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GENERAL VIEW
OF THE
AGRICULTURE
OF THE
COUNTY OF FIFE:
WITH
OBSERVATIONS
ON THE
MEANS OF ITS IMPROVEMENT:
DRAWN UP FOR THE CONSIDERATION OF THE
BOARD OF AGRICULTURE
& INTERNAL IMPROVEMENT.

By JOHN THOMSON, D. D.
MINISTER OF MARKINCH.

O! are there not some PATRIOTS, in whose power,
That best, that godlike luxury, is placed,
Of blessing thousands, thousands yet unborn,
Thro' late Posterity? Some, large of soul;
To cheer dejected INDUSTRY? to give
A double Harvest to the pining Swain?
And teach the labouring hand the sweets of toil?
Yes, there are SUCH * * * * *

THOMSON.


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AND WITH THE CONSENT OF THE

BOARD OF AGRICULTURE

IN IRELAND

BY JOHN THOMSON, D. D.

OF THE UNIVERSITY OF DUBLIN

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THE great desire that has been very generally expressed for having the AGRICULTURAL SURVEYS of the KINGDOM reprinted, with the additional communications which have been received since the ORIGINAL REPORTS were circulated, has induced the BOARD of AGRICULTURE to come to a resolution of reprinting such as may appear on the whole fit for publication. It is proper at the same time to add, that the Board does not consider itself responsible for any fact or observation contained in the Reports thus reprinted, as it is impossible to consider them yet in a perfect state; and that it will thankfully acknowledge any additional information which may still be communicated: an invitation, of which, it is hoped, many will avail themselves, as there is no circumstance from which any one can derive more real satisfaction, than that of contributing, by every possible means, to promote the improvement of his Country.

N. B. *Letters to the Board may be addressed to*
LORD CARRINGTON, *the President, London.*

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M. R. FLETCHER to the Board may be addressed to
Lord CARRINGTON, the President, London.

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AGRICULTURAL SURVEY
OF THE
COUNTY OF FIFE.

INTRODUCTION.

AGRICULTURE, in every civilized nation, has been justly regarded as an object of the first importance, and, of all the useful arts, the most deserving of public attention and encouragement. At the same time that it furnishes a steady supply of all the necessary means of subsistence, and comfortable accommodation, to the individual, it contributes, most essentially, to the strength, the opulence, and the independence of the State. It must, therefore, appear surprising, that, in this country, so much distinguished by other improvements, the improvement of the soil should have continued so long the object of general neglect, and should never, till of late, have received that public encouragement, to which it has so just a claim.

Literary merit has been patronised by the most distinguished names. Improvements in the arts and sciences have been encouraged by public honours and rewards. Laws and regulations have been established, and bounties held out, to give energy and success to the exertions of the merchant and manufacturer. Much blood and

treasure have been spent in the acquisition of foreign territory, and foreign trade; and the lives of many thousands have been hazarded and lost, for their extension and defence. But the cultivation and improvement of our native soil, though an object undeniably of the first consequence to the nation, has been, in a great measure, overlooked, and suffered to languish under the pressure of numberless hardships and discouragements.

Public neglect, however, is not the only misfortune which agriculture hath experienced. From the indolence and inattention of the proprietors themselves, it hath suffered still more severely. Blind to their own private interest, as well as to the general good of their country, they continued long to regard husbandry with an indifferent eye, and have never, generally, till within these few years, taken any proper measures to extricate their estates from that wretched system of management to which, from time immemorial, they had been unhappily subjected.

In many instances, and at a period not very remote, the pride of family distinction, attaching the idea of meanness to the labours of the peasant, led gentlemen of fortune to consider practical farming as beneath their rank, and as bringing them too much upon a level with the inferior orders of society. Besides, the greater part of our young noblemen and gentlemen were trained up in the persuasion, that the science of agriculture formed no part of the education, and the knowledge of rural economy, none of the accomplishments, that belong to men of rank and fashion. The consequence of this

has been an almost total ignorance, and a rooted dislike, of the operations of husbandry among that order of men, who are most concerned and best able to promote its improvement. Abstracting themselves entirely from country affairs, they engaged in other employments deemed more honourable, or more suitable to their station, or else devoted their time to the pleasures and amusements of gay life, at a distance from their estates, which they seldom visited, and of which they knew little, except, perhaps, the amount of the rental. The cultivation of their lands was, of course, left to the management of a class of men, generally without knowledge, without capital, and without enterprize, attached to the customs and fashions of their fathers, and as unwilling to adopt, as they were unable to form, any rational plan of improvement.

It must be admitted, however, that this charge of neglect does not apply universally. Upwards of forty or fifty years ago, many gentlemen both in England and Scotland, began to study agriculture as a science, and to regard practical husbandry as an honourable as well as a profitable employment. By a course of experiments and observations, and at no inconsiderable expence, they gradually introduced an improved system of husbandry into their estates; by which means, they have at last brought them to a high state of cultivation. In every county or district where this has taken place, the consequences are visible and striking. The value of land has increased amazingly. The tenants are in a thriving condition, and many of them rising to affluence. It must be acknowledged, likewise, to the credit of the

farmers, that many of them have displayed much skill and industry in the cultivation of their farms; and have contributed, in no small degree, to the improvement of practical husbandry.

The effects, however, of these laudable exertions have been partial and limited. They have awakened the public attention; they have thrown much light upon this important subject; and have done much good in particular counties and districts. But they have never been able to diffuse a spirit of industry and improvement generally through the kingdom; nor to establish a system of agriculture upon principles capable of universal application.

When these circumstances are considered, we cannot wonder that the progress of agriculture has been so slow, and that, in so few instances, it hath reached to any degree of perfection. If I am rightly informed, a comparatively small part of the kingdom can boast of a complete state of cultivation. A very large proportion, though in a progressive state of improvement, is still, by many degrees, short of perfection. And vast tracts of land, capable of cultivation, still remain in a state of nature, or under a course of management little superior to what existed some centuries ago.

The period, however, is now arrived, when the eyes of the nation seem to be opened; and a taste and spirit for agricultural improvement, which, for some time, have been advancing with slow laborious steps, are now beginning to operate with a vigour and to an extent hitherto unknown. By the persevering efforts of a patriotic individual, a BOARD OF AGRICULTURE has

been established, for the purposes of collecting information respecting the present state of husbandry through the nation ; of rousing and spreading a spirit of industry among the people ; and of devising and employing the most effectual means of accelerating and bringing to perfection the cultivation of the soil in every part of Great Britain.

From such an institution, patronized by our Gracious Sovereign, sanctioned by the authority of Parliament, and under the management of the first names in the kingdom, we are warranted to prognosticate the happiest effects. Every friend to his country must anticipate, with joy, a period not very remote, when the nation at large shall present to the ravished eye a prospect rich and beautiful beyond description—Elegant buildings—regular inclosures—luxuriant crops of every kind of grain—innumerable herds of cattle feeding at ease on the richest pasture—snowy flocks ranging the verdant hills—barren tracks, formerly bleak and dreary, now covered with thriving plantations—whilst the chearful faces of a happy peasantry, and the incessant bustle of active industry, vary and enliven the delightful scene. Posterity will mark the present, as an important æra in the history of their country, and will remember, with pious gratitude, those venerable ancestors who have transmitted to them, not only the best system of government, but also the completest system of agriculture, and a territory improved and enriched by their skilful and laborious exertions.

Deeply impressed with these views, and feeling a strong inclination to contribute, as far as lies in my power, to the success of so noble a design, I was induced, in compliance with the repeated solicitations of the late President of the Board of Agriculture, to undertake the task of drawing up the Agricultural Survey of the County of Fife. How far I have done justice to the subject must be left to others to determine. Notwithstanding my best endeavours to render the performance as correct as possible, I am sensible that it labours under many defects, and that it will have occasion frequently to appeal to the candour and indulgence of the public. Facts I have stated, partly from my own knowledge, but principally from the communications of others, whose acquaintance with the state of the county was more intimate and extensive than mine could possibly be. The observations interspersed through the work, relative to different points in husbandry, are partly the result of experience, and partly hazarded as matters of opinion, which may be adopted or rejected as they shall appear to be well or ill founded. Many errors and mistakes will, I doubt not, occur to the intelligent reader; but I flatter myself, that these will be found to be neither so numerous, nor of such magnitude, as materially to affect the conclusions aimed at, as the great and ultimate object of the present agricultural investigations.


AGRI CULTURAL SURVEY

OF THE

COUNTY OF FIFE.

CHAPTER I.

Geographical State and Circumstances.



SECTION I.

SITUATION AND EXTENT.

THE county of Fife is situated on the south-east corner of the middle peninsula of Scotland, and lies between $56^{\circ} 3'$ and $56^{\circ} 25'$ of N. Lat. and between 2° and $2^{\circ} 56'$ of W. Long. from Greenwich. It is bounded on the south by the Frith of Forth; on the east by the German Ocean; and on the north by the River Tay. On the west, it is deeply indented by the county of Kinross, along the north and south borders of which it stretches westward, till it meets with the shire of Perth. In one point it touches Clackmanan-shire. From the unevenness of its western boundary, and from the deep impressions made in many places by the surrounding waters, it assumes rather an irregular form. By the exactest calculation that can be made, its medium

length, from east to west, may be 36 miles; and its medium breadth, from north to south, 14 miles: and, therefore, the whole contents will amount to 504 square miles, or 256,970 Scots acres, equal to 322,560 acres, English measure.

Four-fifths of the county, nearly, may be considered as arable. The other fifth consists of hill, moss, moor, roads, and woods, and is, therefore, either altogether inaccessible to the plough, or incapable of improvement by tillage, with any prospect of advantage.

DURING the existence of the Pictish Government, this County seems to have formed a part of that large district of country, bounded on the north and south by the Tay and the Forth, and extending from the foot of the Ochil hills, to the German Ocean, which, on account of its almost insular situation, was, in these ancient times, called Ross. This word, in the Gothic or Pictish language, signifies a peninsula. Hence Kinross, or Keanross, as it was formerly spelled, signifies the head of the peninsula; Culross, the back of the peninsula; and Muck ross, the old name for Fife-ness, the point, or snout of the peninsula. By this general name it continued to be called, until, in later times, as Buchanan informs us, "*Reliquum agri ad Fortham usque, ambitio, in varias præfecturas dissecuit, Clackmananam, Culrossianam, et Kinrossianam.*" The last of these, about the year 1426, was divided into the two counties of Fife and Kinross: and at the Revolution, Kinross being thought too small a county, as it then stood, was enlarged by the addition of Orwell, Cleish, and Tilli-

bole ; which parishes, before that period, had belonged to the county of Fife. But though these are now two distinct counties, and are separately represented in Parliament, they are both comprehended in the sheriffdom of Fife.

SECT. II.—DIVISIONS.

A COUNTRY may be divided, either by those discriminating marks, which the hand of nature hath fixed, or by those ecclesiastical and political arrangements, which public authority may think proper to establish. The county of Fife is divided into two parts by that tract of high ground, which comprehends the Lomond hills on the west, and from thence stretches eastward almost in a direct line, till it approach within a few miles of the sea. The two rivers of Eden and Leven throw the county into three divisions. The northern division, between the Eden and the Tay ; the middle division, between the Eden and the Leven ; and the southern division, between the Leven and the Frith of Forth.

In respect of ecclesiastical and political arrangement, the county is divided into sixty one parishes, which are distributed into four presbyteries, namely, the presbyteries of St Andrew's, Cupar, Kirkaldy, and Dunfermline, so called from the names of the places where they are appointed to meet. Of these four presbyteries, the provincial synod of Fife is composed, which ordinarily meets at Cupar and Kirkaldy alternately, and at St Andrew's and Dunfermline occasion-

ally. It is to be observed, however, that the presbytery of Dunfermline, besides the parishes belonging to the county of Fife, includes the parishes of Kinross, Cleish and Orwell, which are within the bounds of Kinross-shire, and Culross in the county of Perth. And Portmoak, though in the county of Kinross, is joined to the presbytery of Kirkaldy.

The two counties of Fife and Kinross, as has been already said, are subject to the jurisdiction of one sheriff-depute, who has two substitutes, one for Fife, and another for Kinross.

The county has also been divided into four districts for regulating the police, and transacting county business, with greater convenience and dispatch, called by the same names, and comprehending the same parishes, with the four presbyteries above mentioned. The proceedings of the district meetings are reported to the general meeting of the gentlemen, which is annually held at Cupar, the head burgh of the county. Within these several districts, Justice-of-Peace-courts are held, when necessary, whose decisions are subject to the review of the Quarter Sessions. In different parts of the county, courts have likewise been established for the recovery of small debts; the benefit of which is, every day, more and more sensibly felt, in respect both of the equity of their decisions, the dispatch of business, and the smallness of the expence and trouble to which parties are exposed.

SECT. III.—CLIMATE.

THE climate of Fife is, in general, much milder and more temperate, than might have been expected from its high northern latitude—milder, indeed, and more friendly to vegetation, than many parts of the island that are placed in a more southern situation.

The degrees of heat and cold are not always in proportion to the latitude of the place; but are, frequently, and to a considerable degree, influenced by the elevation of the country, the quality of the soil, and its state of improvement; its relative situation, and the natural or artificial shelter which it enjoys. By these circumstances the climate of Fife, as well as of other countries, is very evidently affected and diversified.

In that part of the county which stretches along the Frith of Forth, and which is not greatly elevated above the level of the sea, well cultivated and improved, and tolerably sheltered by inclosures and the numerous plantations around the seats of noblemen and gentlemen, the climate is warm and temperate. Snow seldom lies long; and in the case of continued storms, the frost generally disappears a considerable time before it leaves the higher and more inland parts. In the middle and northern districts, where the ground is high and mountainous, the soil is cold, wet, and less improved; or, where it is destitute of shelter, the aspect is bleak, and the air more cold and penetrating.

This county, from its peculiar situation, and from the almost uniform direction of its hills and valleys from east to west, is much exposed to the winds, which blow from the east, north-east, and south-east. These winds not only sweep along the high grounds, but force their way through the valleys without obstruction; so that the whole county, excepting some particular spots, accidentally favoured by situation, lies exposed to their assaults. Armed with the cold of the great northern continent, over which they pass, and unsoftened by the small extent of sea they have to cross, they are keener and colder than the winds from any other quarter; and often prove hurtful to vegetation, especially when the springing grain is yet in the tender blade. The winds from the south-west are usually the most weighty and violent; and sometimes do material injury to the farmer, by shaking his ripe grain in harvest.

In the spring and beginning of summer, vegetation is frequently retarded by alternate frosts and thaws, which greatly injure the pasture-grass and hay crops. But our wheat fields, if the plants keep the ground, are seldom the worse for being retarded. Hoar frosts frequently happen as late as the middle of June, and sometimes later. If wheat be in the ear, and in blossom, when this takes place, it will infallibly be more or less subjected to blight, or what is called mildew: which it generally escapes, if its growth be checked in the spring.

From the dry bottom, and natural warmth of the soil, the north division, and the south banks of the river Eden, have harvest eight or ten

days sooner than the generality of Fife. But, which shews that this is not owing to climate, the south division has pasture grass some weeks earlier and later than the north.

The west and north-west end of the county, in the neighbourhood of the Lomond and Ochil hills, as well as the high ridge of the middle division, being more subject to cold, rain, and damp fogs, are still later, by eight or ten days, in all respects, than the rest of the county.

The quantity of rain that has fallen, or the proportion of dry and rainy weather, in a year, or in any given number of years, in Fife, has never, so far as I know, been calculated and ascertained. But, from the best observations I have been able to make, the weather, in this respect, is much the same as in the counties in the immediate neighbourhood. The Lomond hills on the west, and Largo-Law on the east, may perhaps occasion more rain, at times, than would otherwise happen. The passing clouds, attracted and broken by their summits, often pour out their contents on the adjacent valleys, in every direction, as they are carried by the winds. From every quarter we have fair and rainy weather: but the rains that are brought by the south-west, the south-east, and the north-east winds, are the heaviest, the most frequent, and of the longest continuance. The rains from the two last mentioned points are, for the most part, very cold; and from thence, too, we have the greatest falls of snow in winter. The driest and most steady weather comes from the west, north-west, and east.

With respect to the general state of the weather, through the different seasons of the year, it is unnecessary to be particular.

It is not from the severity of the seasons, from the quantity of rain that falls, or the extremes of heat and cold, that the husbandman has so much to fear, as from the inconstancy and variableness of the weather; an evil from which no season of the year is exempted, and which this county feels in common with the whole island. Seldom do two seasons, of the same tenor, follow in succession. Even the same week, nay, often the same day, exhibits sudden and unexpected changes, which must unavoidably embarrass and retard the operations of husbandry. The inconveniencies, however, arising from this unfavourable circumstance, are not so great as to give any serious check to the efforts of industry, or to prevent, in any material degree, the progress of agricultural improvement. They may be greatly lessened, and, in some cases, altogether prevented, by attention and activity. Extraordinary labour and expence they will, no doubt, frequently occasion: but judicious management, and persevering exertion, shall ultimately succeed.

SECT. IV.—SOIL AND CLIMATE.

THIS county exhibits a great variety of soil, differing much both in kind and quality—clay, loam, gravel, sand, moss, and each of these diversified according to the proportions in which they are intermixed and combined. This ac-

count, however, is only general, and, though just, has nothing in it peculiar and distinguishing; as it may apply to almost any county as well as Fife, and, perhaps, to almost any parish in Fife as properly as to the whole. A more particular description will therefore be necessary.

When the county is carefully surveyed, and examined with a view to ascertain this point, we find it dividing itself into four tracts or districts of ground, clearly marked, and distinguished from each other, by a general difference of soil, and by other circumstances affecting its fertility.

Along the Frith of Forth, from the eastern to the western boundary, the land rises gently, and has no great elevation above the sea. Here the soil is, for the most part, of an excellent quality; deep rich loam, good clay, and gravel mixed with loamy earth. In many places the soil lies on rotten rock; and, when this is the case, it seldom fails to be dry and remarkably fertile. About Largolaw, Kinghorn, Burntisland, and some other places, where the ground is broken and uneven, swelling abruptly into eminences or little hills, the soil is deep and rich, not only in the interjacent valleys, but as far up the hills and rising grounds as they are accessible to the plough.

The breadth of this division, from south to north, is very different, in different places. From the parish of Leven, as it stretches eastward, it gradually expands, till it reaches the breadth of three miles, and exhibits a beautiful tract of rich flat land, unequalled, in point of extent, by any in the county. From the mouth

of the Leven to the western boundary of Kirkaldy, this tract of good land is very narrow; the poor soil approaching within a mile, and, in some places, within half a mile, of the shore. Beyond that, towards the west, it grows broader; and, in the parishes of Inverkeithing, Dunfermline, and Torryburn, the breadth is, in many places, almost equal to the tract in the eastern extremity just now mentioned. Here the ground is more elevated above the level of the sea than the other, and the surface more uneven; but the soil is equally rich and productive. The whole of this division produces luxuriant crops of all kinds, wheat, barley, beans, oats, grass, turnip, potatoes, and all these of excellent quality. In favourable seasons, when the ground has been well prepared, the crops are exuberant almost to excess. And, when well inclosed, and laid out for pasture, the land here brings a higher rent than in any part of Great Britain, where pasture alone is the object.

Between the ideal waving line, which bounds the district just now mentioned, on the north, and the bottom of the high ground south of the Eden, and from St Andrews on the east to the extremity of the county on the west, the quality of the soil is, in general, greatly inferior. A very large proportion is cold poor clay, and very wet; and the strata under it, for the most part, freestone, and closs till. Though numbers of large and small whin-stones are found, almost every where, on the surface, or mixed with the soil, very little whin-rock strata are found under it. In this district there are extensive tracts of mossy, moorish, rocky, and barren ground, ei-

ther altogether incapable of tillage, or incapable of being brought under the plough with any advantage. The most remarkable tract of this kind extends from the western limits of the county, along the north side of the parishes of Saline, Dunfermline and Beith, and from thence by Lochgelly, and along the north side of the parishes of Dysart and Wemyss, till it approaches nearly to the mouth of the Leven. In short, the high exposure of this large division, its almost total want of shelter, the heathy and barren moors it contains, and the scanty crops it produces, render its general aspect bleak and forbidding; and indicate the propriety of applying it chiefly to the purpose of breeding and rearing cattle, for which it is much better calculated, than for raising crops of corn.

But though the quality of the soil be, in general, inferior, and in many places extremely bad, there are many spots of land in this division, and these of considerable extent, where the soil is excellent, and abundantly productive. Amongst these may be mentioned the lands on the east, near the shore, some grounds along the north of Largo-law, a considerable proportion of the parish of Ceres, especially in the hollow around the parish church, and towards the west; the lands about Kennoway, and on the south side of the parish, towards Markinch; the south bank of the Leven, from the east as far as Leslie, and the north bank, which lies mostly on a whin rock bottom, as far as Auchmuir bridge; part of Balingry, Kinglassie and Auchtertool; and many other farms and detached spots irregularly scattered over this district.

Besides the places just now mentioned, there are many thousands of acres, in this division, of a good soil ; but covered, at present, with bent and rushes, and short heath, totally lost through want of shelter, or rendered useless by the superabundance of moisture. Were these lands disposed into fields of a proper size, completely drained, and surrounded and warmed with enclosures and stripes of planting, they might be brought, under the hands of skilful and spirited improvers, to yield good crops either of grain or grass, and rendered four times, at least, as valuable as they are at present.

Next to the district last mentioned, and northward, we meet with another, which marks and distinguishes itself by its situation and the difference of its soil. It extends from the mouth of the Eden, along the course of that river on both sides, till it reaches the shire of Perth. From Cupar westwards, it is a low and level valley, expanding in some places to the breadth of three or four miles ; and, from its situation between two ranges of hills, was anciently called the How of Fife. Along the middle, and on the south side of this vale, the soil is generally light, dry, and sandy. On the west, and at the bottom of the Lomond hills, it inclines to gravel. On the other side of this valley, as it approaches the hilly ground on the north, the soil becomes gradually deeper and stronger, in some places clay, and in others rich loam ; with the exception of Eden's moor, which is a thin mossy soil, with a substratum, in some places, of sand, and in others, of cold till, and covered with short heath. From Cupar eastward, the ground rises ;

the surface is more unequal; and the valley narrower; but widens as it declines and approaches the sea. Here the soil is, in general, superior to that of the western part of the strath. In some places we meet with a thin, wet soil, upon a cold tilly bottom: but the greatest proportion consists of loam partly deep and moist, and partly light and dry; and in some places a rich friable clay on a bottom of dead sand. Near the mouth of the Eden, and on both sides of the river, there is an extensive tract of rich ground, gradually rising from the sea, and bounded by the surrounding hills in the form of an amphitheatre, the fertility of which, and the quality of the grain it produces, are exceeded, perhaps, by no other part of the county.

From the bottom of the hills bounding the valley just now described, on the north, to the river Tay, the land is, almost every where, found to have a whin rock bottom: all the hills are whin rock, and all the stones, in or upon the surface, are of the same kind. These hills are a continuation of the Ochil hills, and their elevation above the sea is considerable. But notwithstanding this, the soil is in general excellent; and, except on the very tops of the hills, where it is thin and exposed, scarcely inferior to any in Fife. When viewed at a distance, this district, from the number of barren rocks, and the quantity of short ill-thriven furze which cover the summits, and, in many places, the sides of the hills, assumes rather a gloomy and barren aspect, and affords no favourable ideas of its fertility. But, upon a nearer inspection, we are agreeably disappointed. The sloping

ground, upon the south side of these hills, from the western boundary to the extremity on the east, is rich clay, loam, and gravel. On the north side, along the Tay, the soil is nearly of the same quality; only in some places the clay is heavier and stronger, and in others, the ground inclines to be wet, from a clayey or tilly bottom. The lands around the old abbey of Lindores, and some other flat ground on the edge of the river, are rich carse lands, equal, perhaps, to any in the kingdom.

In the middle of this district, the high ground on the west side of the road that leads from Auchtermuchty to Newburgh, contains no great proportion of good arable land. But on the east, we meet with a rich extensive valley, commencing at the Loch of Lindores, in the parish of Abdie, and winding along eastward, in different directions, and with various lateral openings, till it reaches the extremity of the county. Here the soil is light loam; gravel; in some places, clay; and in others swampy, and overrun with rushes, from the want of draining. The soil on the acclivities of the hills, on either side, to the very summits, is nearly the same, but in general deeper, richer, and more productive. On the eastern part of this district, where the hills gradually decline; and sink down to the level of the sea, there is much excellent land, especially in the parish of Leuchars, and seemingly under the best management. At the same time, we find here large tracts of flat, benty, and light, sandy soil, lying upon the shore; which,—from its natural poverty; its inability to relieve itself from the

superabundant moisture it receives in winter, or in rainy seasons; and the danger of having the covering mould blown off the new sown grain, by high winds, in dry springs,—is incapable of much improvement, and must ever continue of small value.

To what has been said respecting the soil of this division of Fife, it may be proper to add, that though the crops produced here may not be so luxuriant as those on the south side of the county, the quality of the grain, particularly of the wheat and barley, is thought superior, and brings a higher price at market.

Before I leave this part of the subject, it may be proper to take notice of the *links*, or sand-banks which skirt the south and east coasts of the county. These, though of great extent, are of little value. The continental soil being buried under drifted sand, to the depth, often, of several feet, they afford only a coarse and scanty pasture. But though they have no natural beauties to boast of, they are nevertheless highly ornamental to the county, by the manufacturing towns and thriving villages with which they are crowded. And though, by their natural produce, they can add little to the general stock, they encourage the culture of the more fertile soils, by the constant demands of their numerous inhabitants.

The description, which we have given of the soil, will serve to convey some idea of the surface. It may be sufficient, therefore, to observe, that in surveying it at large, the eye is not fatigued with the prospect of an unvaried plain, where there is no variety of objects to

arrest, and entertain it; nor disgusted by a group of barren hills confusedly huddled together; but entertained by a pleasing variety of mountains and valleys, hills and dales, gentle swellings and depressions of the ground, in every direction and in every degree. The Lomond hills, on the west, and Largo Law, on the east, are equally remarkable for their height, their verdure, and their form; whilst the Norman Law, on the north, rises with gloomy majesty above his surrounding hills. A great number of noblemen's and gentlemen's seats appear in the midst of aged plantations, extensive pleasure-grounds, and large enclosures, disposed with taste and elegance; whilst the scenery, in a variety of instances, is enriched with deep romantic glens, where the trees and copse-wood, bending, in thick confusion, from the rocky precipice on either side, conceal from the eye the stream that murmurs below. The whole county, almost, is surrounded with flourishing sea-port towns, whilst the inland parts are beautified with numerous thriving villages, farm-houses, and cottages, marked and distinguished each by its little clump of trees. These are objects highly pleasing, because they suggest the idea of population, industry, and affluence.

In this survey, the eye would gladly pass over those tracts of land, which are yet almost in a state of nature, unsheltered from the storm, covered with rocks or heath, and drenched or drowned with water. But they are too extensive to be overlooked. May the Genius of Agriculture soon visit these neglected lands, and

turn the barren deserts into fruitful fields! From these unsightly scenes we turn away, and feel relief from the view of those numerous and extensive fields of rich and cultivated ground, which give beauty and opulence to the county, and where industry and skill are exerting their united powers, with success, in carrying forward the improvement of the soil.

SECT. V.—MINERALS AND FOSSILS.

FEW counties in Scotland can furnish such an abundant supply of both coal and lime as the county of Fife. From the Forth almost to the Eden, these minerals are to be found in a great variety of places, and of the best quality. As the strata, however, particularly of the coal, vary much, in their dippings and bearings, as they recede from the shore, it may be proper, in the account to be given of them, to attend to this distinction.

On the south side of the county, along the Frith of Forth, the strata are generally regular, dip to the east and south-east, and trend into the sea, on the one hand, and a short way towards the north-east, on the other; the strata being uniformly cut off before they reach the higher ground, and not extending above two or three miles from the shore. In this district, on the western boundary, we find the coal of Toryburn; and at Limekills; about three miles further east, the lime-works belonging to the Earl of Elgin, the greatest, and most extensive, perhaps, in Scotland. About Inverkeithing, the

whin rock strata prevail, and there neither coal nor lime are found near the shore. At Dalachy, near Aberdour, there is a lime-stone of excellent quality belonging to the Earl of Morton. In the parish of Burntisland, there are inexhaustible quarries of lime-stone, which is exported to Carron and other places, in great quantities.— But between this and the west end of Kirkaldy, the whin rock again intervenes, and neither coal nor lime appears, except in the east of Kinghorn, where lime is found at Abden, within sea mark, and at Innertiel, about half a mile west of Kirkaldy. In the lime-rock last mentioned, though elevated at least 50 feet above the sea at high water, a prodigious quantity of sea-shells are found incorporated with the solid mass. From this circumstance it is presumeable, that the calcareous matter forming the rock must have been, at some remote period, in a fluid state; and that these similar strata must have been formed by the agency of water, and not by fire, as some theorists alledge; for if fire had been the agent, all these shells must have been calcined, and their original form entirely destroyed.

In the parishes of Abbotshall and Kirkaldy, a few seams of coal are found within a mile of the shore; but none of them are wrought at present. In the parish of Dysart, there is a large and extensive bed of coal, the property of Sir James Sinclair Erskine, stretching from the sea to the water of Orr. The part of this coal, that is just now working, is eighteen feet thick, divided into three seams by two thin strata of till. It was discovered and wrought above 300 years ago,

and is remarkable for having been frequently on fire. On the estate of General Wemyss, there are two coalleries, the one at West Wemyss, and the other at Methel, of considerable extent, and of excellent quality. Farther east, we meet with Durie coal, in the parish of Scoonie, belonging to Mr Christie of Durie; and Lunden coal, in the parish of Largo, the property of Sir William Erskine. The next coal found upon the coast is at Pittenweem, the property of Sir Philip Anstruther. Some seams of coal have been discovered at Kilrennie, but not of such value as to be wrought with advantage. In the parish of Crail the substratum is whin-rock, and there neither coal nor lime is to be expected.

The next tract of coal metals upon the north of that which has just now been mentioned, lies generally at the distance of two, three, or four miles from the sea, and in ground considerably elevated. Here the coal, and all the other strata, lie quite differently from those on the shore; the dip being almost uniformly north or north-east; and the bearing from east to west, or from south-east to north-west, with, perhaps, some few exceptions. On this tract, and of this description, are the coal of Annfield, in the parish of Toryburn; of Pitferrane, the property of Sir Charles Halket; Pittencrieff, Batherwic, Chamberfield and Halbeath, in the parish of Dunfermline; of Fordel and Cuttlehill, in the parish of Dalgety; Lochgellie, Dundounet, and Clunie, in Auchterderran; of Bogie, in Abbotshall; of Leslie, Balbirnie, and Balgonie, in the parishes of Leslie and Markinch; the last of which only resembles the metals on the sea-coast, in respect

of its regularity and bearing. Upon the same course is the coal at Gilston, part of Lundin estate; Fallfield and Largo-ward, belonging to Mr Durham of Largo; Lethallen, the property of Major Lumsden; and at Kingsmuir in the parish of Denino, near the eastern extremity of the county. From the one end of this tract to the other, limestone quarries are also found of greater or less extent. In the parishes of Auchterderran and Abbotshall, particularly, are the lime-quarries of Chapel, Gleniston, and Foulford, where a vast quantity of lime rock has been, and still continues to be wrought.

To the northward of the tract last described, we meet with the highest grounds in the county, stretching from Saline to St Andrews. Here the surface being exceedingly unequal, sometimes rising into high hills, and then sinking into deep valleys, we find the different strata lying in all imaginable directions; and sometimes the same strata dipping and cropping towards the opposite points of the compass. In the Saline hills, both coal and lime are found in various places. There is a considerable coal-work at Kelty in the parish of Beith, on the borders of Kinross-shire. And at East Blair, on the south side of Binarty hill, there is another coal, near which is a lime-work belonging to Mr Syme of Lochorr. Between Binarty and the Lomond hills, the strata are interrupted and cut off by the deep valley through which the water of Leven flows. But near the top of the Lomonds, the lime-stone again appears, of which a regular bed is found cropping out on the north side of the west, and on the south side of the east Lo-

mond. Near the bottom, on both the north and south sides of the hill, there is an extensive bed of coal, but too thin to be wrought with advantage. At Forthar, in the parish of Kettle, there is a very valuable and extensive lime-quarry, where a considerable quantity of stone has been burnt annually for many years past. The lime is of excellent quality, and brings a higher price, I believe, than any other in the county. From this, all along to the eastern boundary, great quantities of coal and lime rock are to be found in different places, which it is unnecessary to enumerate. But, from the irregularities of the surface, and the frequent breaks and interruptions of the strata, only a few of these are either valuable or extensive.

From the south of Eden's vale at the bottom of the high ground, over which we have just now passed, northward to the River Tay, neither coal nor lime are to be found; nor does there appear the least vestige of those metals that usually accompany coal. The want of these necessary articles is a great disadvantage to the inhabitants of that district, as they must be supplied at a great expence, either by water, or by a long land carriage.

Considerable quantities of iron-stone are to be found in different parts of the county. This mineral is a constant attendant on coal: and, therefore, wherever there is coal, there iron-stone is to be got. In general, however, the beds of stone are so thin, or the quality so poor, or the distance from a sea-port so great, that the expence of working it would far exceed the price it would bring.

In several places, however, the beds of iron-stone have been found of such a thickness, extent, and quality, as to render the working of them a profitable object. Near Dysart, upon Sir James Sinclair Erskine's estate, there is a field of excellent iron-stone, which has continued to be wrought for a number years. Twenty-four men are employed, who raise annually 2080 tons. Iron-stone is also raised in the parish of Dunfermline. It lies upon Sir Charles Halket's coal, and is wrought by the tacksman of the coal. There is, likewise, an extensive bed of this mineral in the lands of Balgonie, belonging to the Earl of Leven. The stone has been proved by different hands, and is found to yield from 33 to 40 per cent. In consequence of a temporary bargain, a few hands are, at present, employed in working it for the Carron Company. To give the proprietor the full benefit of this valuable subject, the erection of a blast-furnace upon the spot, for making it into pig-iron, would be the most effectual plan. There is plenty of coal at hand, and lime at no great distance, for carrying on the operation.

Freestone, another very valuable and useful mineral, is to be found in abundance, and of the best quality, in this county. In the whole northern district, indeed, little freestone is to be seen. But through the other districts, it is found in almost every parish, nay, in almost every estate of any considerable extent. Its quality is various; but a great proportion of it is excellent, being close, durable, and capable of a fine polish. In the parish of Burntisland, particularly, there is a fine freestone-quarry, from which, on account of its superior quality, and its vicinity to

the sea, most of the new buildings along the coast have been supplied with stones for the hewn-work. In the parish of Strathmiglo there is an extensive bed of freestone of a dark-red colour, which not only answers well for building houses and enclosing ground, but, from the manner in which the strata are formed and ly, is peculiarly fitted for pavement, and, when designed for that use, can be wrought with greater ease and less expence. On the north side of the Lomond hills, and also in the parish of Dunfermline, there are vast rocks of white freestone, which, from its colour, its durability, and its susceptibility of a fine polish, is excellent for hearths, and the jambs and lintels of chimneys, and for the corners, and the doors and windows of houses.

Besides freestone, there is great plenty of whin-stone, especially in the northern division. This is a valuable material, and capable of being applied to many useful purposes, particularly to the making of roads, inclosing and draining land, and the building of houses. To this last mentioned purpose, a great deal of it is excellently adapted. It is of a fine colour, is capable of being neatly dressed, takes firm band, and strongly resists the weather. Houses constructed of this kind of stone, when the architecture is under the management of masons skilled and practised in this kind of work, besides strength and durability, have an elegant and pleasing appearance.

Near Burntisland, upon the shore, and also in some other parts of the county, there are quarries of hard stone, of a dark colour, to be

found, with the peculiar property of resisting the force of fire. It will endure for many years; without being wasted or broken, though exposed to the most intense heat. On this account it is used for the soles of ovens, and for the sides of chimney grates.

In the Lomond hills, it is believed that there are both lead and copper. The existence of the former, at least, is certain. A lead mine of rich ore was discovered many years ago, which at that time was given up, either through the want of enterprize, or the want of money to follow it out. It was again opened, and a second trial made, at considerable expence, by the present proprietor. But, either through the mismanagement of those employed to conduct the work, or because appearances were not sufficiently favourable to justify the risk, it has been again relinquished.

Marle, though it cannot be said to abound, is nevertheless to be met with in several parts of this county. In the lands of Captain Cheap of Rossie, there is an extensive and rich bed of this valuable manure,—the most extensive, perhaps, of any in Fife. There is marle also in the estate of Lundin. Some has been discovered and wrought in General Wemyss's grounds; and in the estate of Balbirnie, there is a considerable, though not extensive bed of shell marle, which has never yet been used. In the bottom and around the edge of Kinghorn loch, also, marle has been found. In summer 1796, which was a very dry season, a considerable quantity was taken out by the different proprietors around the loch. On the farm of Balbody, I have been

told, marle is so plenty, and so near the surface, that the wheels of carts often turn it up as they pass along; and yet the farmer, either from indolence, or through ignorance of its value, has never thought of applying it as a manure to his grounds.

Besides clay of excellent quality for making house bricks and tyles to any extent, a species of clay has been found, proper for the purpose of making fire-bricks. In Durie coal-works, particularly, it is procured in such quantity, as to encourage a gentleman to set on foot a manufacture of fire-bricks, which is doing well; and the bricks, upon trial, are found completely to answer the purpose.

SECT. VI.—WATER.

THE streams in Fife are so inconsiderable, that though they are sometimes called rivers, none of them are properly entitled to be designed by that name. The largest are usually styled waters, and the smaller streams, brooks, or burns—the water of Leven, for instance, and Pitmilly burn. The following are the principal waters:

1st, The *Orr*, which issues from a loch or lake of that name in the parish of Balingry. About a mile below the loch, it is joined by a stream from Lochfittie; and farther down, by another from Lochgellie, and at last loses itself in the water of Leven, about half a mile above Cameron bridge. Upon this water there are six corn mills, two fulling mills, two lint mills,

one flour mill, and one coal-engine. Lochorr has been lately drained by the proprietor; by which means he has added above a hundred acres of land to his estate. But while the proprietor of the loch has been a gainer, the proprietors of the mills have been materially injured by the drainage. The loch was originally a natural reservoir, in which the water was collected, and from which a regular and sufficient supply was furnished at all seasons. But now, that the dam is removed, and the water allowed to run off as it gathers, the mills, in a long course of dry weather, are but scantily supplied, and must occasionally stop. Besides, the haughs and low grounds, upon the banks of the water, are liable to be overflowed and injured, in time of floods or great falls of rain; there being nothing now to prevent their running off as they are collected.

This water, issuing from mossy ground, and in its course being mixed with coal-water, has never been used for the purpose of bleaching. Trout, pike, perch, and eels are to be found in it, but no salmon.

2d, *Lochty*, which rises out of Boglochty, in the parish of Balingry, runs upon flat ground through the parish of Kinglassie, and falls into the Orr, about half a mile below the road that leads from Kirkaldy to the New-Inn. This is a small stream, except in rainy weather. Fish the same as in the Orr. Only one lint-mill upon it.

3d, The *Leven*, which issues from the celebrated Loch-Leven, in Kinross-shire, and from which it takes its name. This water runs east-

ward through a beautiful strath, by Leslie, Balgonie, and Balfour, and empties itself into the Frith of Forth at the town of Leven. In its course it is joined by the water of Lothrie a little below the village of Leslie; by the Orr, as was said, half a mile above Cameron bridge; and a little farther down, by a burn or brook, which descends from the Lomond-hills, and runs through a valley in Markinch, a little towards the north. From its rise to the sea, it has a course of eleven or twelve miles. It is a clear, constant, and weighty stream, and, from the declivity of its channel, is, in many places, rapid; of quantity and force sufficient to drive machinery of almost any magnitude. There are, upon this water, seven bleachfields, two large cotton-mills, three mills for spinning flax, twelve corn-mills, three fulling-mills, seven lint-mills, two flour-mills, four barley-mills, one mill for manufacturing lintseed oil, and three coal-engines. Besides the stations already occupied, there are many others equally convenient for erections of the same kind, and where a constant and plentiful supply of water can be had at all seasons of the year. This water abounds with excellent salmon and trout, and some pikes and eels. Where it falls into the sea, there is a considerable salmon-fishery, the property of which belongs to Mr Christie of Durie.

4th, The water of *Eden*, which is formed by the confluence of several small streams in the parish of Strathmiglo, winds its way slowly through a level valley, passes the town of Cupar, and loses itself in the German Ocean a little below the Guard-bridge. This water is

increased by the accession of several small streams that descend from the high grounds on either side, and has a course of about eighteen miles. Formerly, from its having little descent, and from its frequent and sharp turnings, it very often overflowed its banks, and did considerable damage to the ground on either side, by washing away the soil. But some of the proprietors, through whose lands it runs, have now partly remedied this evil, by straightening and deepening its channel. Mr Johnston of Lathrisk, in particular, so far as he was concerned, spared no labour or expence in order to render the work as complete and effectual as possible; and his operations have been equally successful and advantageous to his estate. He caused a spacious canal to be made for the water, twelve feet wide at the bottom, and thirty feet at the top, secured, on the sides, by embankments and hedges, which include a space of seventy feet in breadth; so that, in time of a flood, there is sufficient space for containing the water, and preventing its overflowing and damaging the adjacent grounds. Upon this water there are some mills, and a bleachfield near Cupar. It abounds with excellent red and white trout, pikes, and eels: and there is a salmon-fishing at its mouth near the sea.

Besides the waters just now mentioned, there are a great many smaller streams, upon which mills for corn, flax, &c. have been erected; and springs of good water are so numerous, that, upon a judicious inclosing of the grounds, there would be few fields of any considerable extent without a sufficient supply.

Under this article, it may be proper to take notice of the lochs or lakes with which the county abounds, and which add greatly to its beauty. To enumerate the whole would be unnecessary; but the following deserve particular notice.

The Loch of *Lindores*, in the parish of Abdie, is a beautiful sheet of water, nearly a mile in length, and of unequal breadth. It abounds with pike and perch, and is much frequented by wild ducks and other kinds of water fowl. Colonel Simson of Pitcorthie is the proprietor, and politely allows the privilege of fishing and shooting upon it, to such of the neighbouring gentlemen as are fond of these amusements. The situation of this loch, too, in relation to the surrounding scenery, contributes much to its natural beauty. The small wood of Wood-mill, just shewing its northern extremity on the S. W. of the lake; the manse, church, and church-yard of Abdie standing solitary on the west; and the ruinous mansion-house of old Lindores, with the trees surrounding it, on the north, form a most picturesque view, and have a fine effect. *Kilconquhar loch* lies on the boundary that divides the parish of Kilconquhar from the parish of Elie, is nearly of a circular form, and may be about two miles in circumference. It is not remarkable for its fish; pike and eels being the principal kinds found in it. But being situated in the midst of a fertile country, between the large plantations and enclosures around Ely house, on the one hand, and Kilconquhar on the other, it becomes an interesting object, giving richness and variety to the prospect, and

heightening all the other beauties of the place. *Kinghorn loch* lies on the north side of the town of Kinghorn, and, though not large, is a fine object upon the edge of the road that leads from Kirkaldy to the Queensferry. It forms a natural reservoir, from which the cotton and flax machinery at Kinghorn is supplied with water. In the parish of Auchterderran there are two lakes of considerable size, viz. *Lochgellie* and *Comilla loch*, the former about 3 miles, and the latter about 2 miles, in circumference. And farther west, in the parish of Beith, we meet with *Lochfittie*, of an oblong figure, and of equal extent with either of the two last mentioned. These three lochs being situated in the most uncultivated, perhaps, and least sheltered parts of the county, may be considered as natural beauties, which arrest the eye of the traveller, and afford him a momentary amusement under the vexations of wretched roads, and the inhospitable appearance of the country through which he is passing. To those already mentioned we shall only add the small loch at *Otterston*, in the parish of Dalgety, about a mile from the shore, which, from its situation, is universally admired. On its banks stand three gentlemens houses, two of which are still inhabited; and it is so surrounded with rising ground and trees, as to furnish a pleasing miniature scene.

To what has been said upon this article I shall only add, that besides the great abundance of wholesome fresh water with which the county is supplied from itself, it enjoys the benefit

of an extensive sea-coast, a circumstance which not only contributes to diversify and enliven its general appearance, but must prove a source of many substantial advantages, which a more inland district cannot enjoy.

CHAPTER II.

State of Property.

SECTION I.

ESTATES, AND THEIR MANAGEMENT.

PROPERTY, in the county of Fife, is, perhaps, more equally divided, and, in proportion to its value and extent, distributed among a greater number of proprietors, than in any other county in Scotland. Here we find no overgrown estates, such as are frequently to be met with in other parts of the kingdom, the proprietors of which, exalted so far above the rest by their princely fortunes, and perhaps by the splendors also of hereditary honours, think themselves entitled to take the lead in all public business, and, by the influence usually attendant on rank and opulence, seldom fail to secure to themselves the full power of directing all the political affairs of their respective counties. In Fife a large proportion of the estates run between 400 l. and 3000 l. per annum. From 3000 l. to 6000 l. there are only a few; and only one, I believe, amounts to 8000 l. From 400 l. down to 30 l. or 40 l. per annum, there are a great number of proprietors, who pay cess and other public burdens, and consequently rank as heritors; and, although of inferior fortunes, are generally men of most respectable characters,

This extensive distribution of property is attended with the happiest effects. The nobility, in point of fortune, are equalled, and in some instances exceeded, by many of the commoners. But influence, derived from superiority of rank, unsupported by a corresponding superiority of fortune, can never be very extensive or dangerous. Accordingly, in their interference in the public and political business of the county, their good sense never allows them to overstep the bounds of their order, and in no instance do they discover any inclination to arrogate to themselves powers, which are the common right of the proprietors at large. On the other hand, the gentry, feeling their own consequence, as men of opulence and respectability, act, upon all occasions, with a becoming spirit of independence. Hence it happens that the noblemen and gentlemen in Fife live on the most friendly and intimate terms; and all county business is conducted with the greatest harmony and ease, alike undisturbed by the insolence of family pride, or the mean jealousy of inferior rank, the violence of party-spirit, or the disgraceful artifices of political intrigue.

The number of heritors liable in cess is upwards of 1200: about 400 of these are entitled to be commissioners of supply. Of the proprietors, the following hold the first rank.

Noblemen.

The Marquis of Tweeddale	The Earl of Morton
The Marquis of Titchfield	The Earl of Murray
The Earl of Craufurd	The Earl of Kelly
The Countess of Rothes	The Earl of Elgin

The Earl of Leven and Melville	The Earl of Hopetoun
The Earl of Balcarras	Lord Dundas
	Lord Minto.

Baronets.

Sir John Henderson	Sir Philip Anstruther
Sir James St Clair Erskine	Sir Robert Anstruther
Sir Charles Halket.	Sir William Erskine.

Besides the noblemen and baronets above-mentioned, there is a great number of proprietors, who, though of inferior rank, are of high respectability, distinguished by the antiquity of their families or the opulence of their fortunes, and many of them by both.

Transference of Property. The transference of property, by sale, or otherwise, in this county, during the present century, has not been remarkably extensive. Some estates, indeed, have entirely changed their owners; and parts of estates have either been sold or gratuitously alienated, by which others have been enlarged, or new proprietors created. But the great body of the proprietors hold the lands, either in whole or in part, that have been in their families for a century back; and not a few continue to enjoy the estates that were in the possession of their ancestors several hundreds of years ago.

Valuation of the County. As far back as the reign of Alexander III., a general valuation of the lands in Scotland was made, for the purpose both of regulating the proportion of public subsidies, and of ascertaining the amount of non-entry and relief-duties payable to the superior. In process of time, however, this valuation was deemed too low a standard for the superior's

casualties; and, therefore, in the reign of James III., they were fixed by the then value of the lands. The former was called the old, and the latter the new, extent. But though the relief duties were henceforth regulated by the new extent, the public subsidies continued to be levied by the old extent, till the time of Oliver Cromwell, when, by several acts of Parliament, a tax was laid upon the lands by new proportions. These proportions were fixed by Parliament in the year 1656; and the sums to which each county was subjected, were subdivided among the individual landholders, according to the valuations already settled, or that should be settled by the commissioners appointed for that purpose. The rent, fixed by these valuations, is commonly called the valued rent, according to which the land-tax, and most of the other public burdens, have, ever since, been levied.

The whole valuation of the county of Fife, by the old extent, amounted to 1347l. 10s. Scots. This appears from an inquest held at Cupar, by order of the king, in the year 1517, by Patrick Lord Lindsay of Byres, Sheriff, and twenty-four jurors, who divided the county, and ascertained the valuation of all the estates according to the old extent. Without taking notice of the valuation of each estate or portion of land separately, as detailed in the scheme, I shall only mention the sums that fell to the share of each of the quarters into which the county was divided:

		<i>Scots.</i>
The Quarter of Eden	- L.	360 10
The Constabulary of Crail	-	217 10
The Quarter of Leven	-	365 0
The Quarter of Inverkeithing	-	162 0
The Quarter of Dunfermline	-	60 10
The Regality of the Church	-	182 0
		L. 1347 10

The valued rent, as it now stands, amounts in whole to 362,584l. 7s. 5d. Scots, proportioned among the different districts in the following manner :

		<i>Scots.</i>
Cupar	- L.	93,520 6 7
St Andrews	-	124,832 4 11
Kirkcaldy	- -	87,780 6 1
Dunfermline	-	56,451 9 10
		L. 362,584 7 5

The valuation of Fife is higher than that of any other county of Scotland. The valued rent of the whole kingdom is stated at 3,872,600l. Scots, of which the valuation of this county is nearly three thirty-two parts, and consequently above three times the average of the other counties.

The proportion between the real and valued rent cannot be easily or accurately ascertained. Proprietors are unwilling to make the rentals of their estates public. Besides, many of them have considerable portions of their lands in their

own possession, either as farms or as pleasure-grounds. Most of the small heritors farm their own estates; and in the hands of the old feuars there is a considerable quantity of land, of which the yearly feu-duty, drawn by the superiors, is a mere trifle. But, supposing the whole lands in the county, fit for tillage and pasture, which amounts to about 230,000 acres, were to be let just now in lease, the gross yearly rent might be computed at 212,000 l. According to this calculation, the annual average rent per acre is 18 s. 6 d., and the real rent is to the valued rent in the proportion of 6 l. of the former to 10 l. 5 s. Scots of the latter. This calculation, however, is certainly too high for the lands, at present actually under lease, the average of which may not exceed 17 s. 6 d.

Land-Tax.—The whole land-tax payable from this county amounts to 3275 l. 19 s. Sterling; and the cess paid by the royal burghs is

Entails.—Tailzie, or entail, though sometimes used to denote simple destination, is chiefly used to signify the settlement of a land estate upon a long series of heirs substituted, in succession, to one another, containing prohibitory and irritant clauses, which preclude any of the heirs from alienating the estate by debt or deed, in prejudice of the substitutes specified and fixed by the deed of entail. What proportion of the land in Fife is under this kind of destination, it is impossible, from any information I have been able to procure, exactly to state. It is well known, however, that a great many estates, and some of these of the first magnitude, are strictly tailzied.

How far this mode of settling the succession of heritage is wise and proper, may deserve consideration. To assume the power of determining just now, who shall possess the estate 500 years hence, when the present proprietor shall have as little interest in it, as he had 500 years ago, has at least the appearance of absurdity. Perhaps ambition to perpetuate the existence of a family called by his name, at least for many generations to come, is the motive. But is vanity a principle of conduct which a virtuous and dignified mind would wish to adopt or to avow? Or, is it his object, in securing to his posterity the unalienable possession of his lands, that they may be enabled to support, with greater dignity and splendor, the titled rank to which he has raised them? But is it certain that the possession of the estate will prevent them from disgracing the nobility fairly and perhaps hardly won by the illustrious deeds of a worthy ancestor?

It merits consideration, also, whether entails may not be unfriendly and injurious to the prosperity of a great commercial and manufacturing nation. The free circulation of land property is a powerful spur to enterprise and exertion; as by that mean, the merchant or manufacturer has it in his power to retire, when he thinks proper, from a hazardous employment, and to convert the profits of his successful industry into a more stable and permanent inheritance. But were all the estates in the kingdom guaranteed by entails to the present proprietors and their posterity for ever, this would be rendered impossible.

Besides its being an unnatural restraint upon property, it not unfrequently puts it in the power of profligacy and dissipation, to ensnare the honest tradesmen, who may not be apprised of the terms upon which his employer holds his estate.

Entails have often the unhappy effect likewise of restraining, within too narrow limits, the operations of natural affection, and natural justice, by putting it out of the parent's power to make a suitable provision for the younger branches of the family.

Nay, in many instances, they prove a great bar to the progress of agricultural improvement. If the proprietor has a large family, when he finds that he can neither burthen his estate, nor alienate any part of it, instead of devoting a liberal portion of his income to the amelioration of his lands, the advantages of which must be ultimately reaped by the heirs of entail, he will be led to save every shilling in his power for the education and settlement of his younger children. Or, if he has no heirs of his own body, and his estate, agreeably to the nature of the entail, must pass into the hands of a distant relation, or of one with whom he has little connexion, and for whom he has as little friendship, he will be equally indisposed to project and execute schemes of expensive improvement.

Residence of Proprietors.—A few of the proprietors, whose family seats, and the principal part of their property, lie in other counties, are non-resident, and seldom visit Fife. There are some, likewise, engaged in particular employments, with the prosecution of which a constant

residence upon their own estates, is incompatible. And there are some, who have been led by matrimonial connections to take up their abodes in other parts of the world. But a great majority of the proprietors are constantly or occasionally resident; a circumstance highly favourable to their own private interest, as well as to the general prosperity of the county to which they belong.

Management of Estates.—It has been already observed, that the small heritors, who are very numerous, usually farm their own lands, and many of them have been equally spirited and successful in their improvements. But the great landholders let their grounds to husbandmen, who farm them under lease. Several of the gentlemen, however, of this description, having acquired a taste for agriculture and rural employments, have been in use, for some years past, to retain a portion of their land, in their own possession, and, in some instances, to a considerable extent, to be cultivated and improved under their own direction: This plan has produced very happy effects. Their judicious and successful exertions have not only contributed to their own amusement and advantage, but have been the means of awakening a spirit of industry, and improving the knowledge of husbandry, through the county at large.

Most of the principal landholders, and even some of smaller fortune, whose employments in life oblige them to be absent, commit the management of their estates to factors, whose province it is to let the lands, to receive the rents, and, in general, to transact all business with the

tenants in the name and behalf of the proprietor. This is a charge of very great importance. The improvement and prosperity of the estate; the advantages resulting from it to both landlord and tenant; and that mutual attachment and good understanding which are so necessary to the comfort of both, depend, in a considerable degree, on the character and abilities of the person appointed to this office. A factor ought to be a man of temper, prudence, and address, that he may be able to manage the various characters with which he must be connected, and to command their respect and confidence. He ought to have a competent knowledge of the laws of his country, particularly of those which have a more immediate connection with the business in which he is engaged, and to be well acquainted with the legal forms, by which his transactions between landlord and tenant ought to be regulated. This qualification will enable him to avoid any irregularities or mistakes in business, that may lead to vexatious and troublesome litigations. It will also give him weight and influence among the tenants, in settling their little disputes, and preventing them from entering into unnecessary law-suits. A factor ought likewise to be well acquainted with rural affairs,—with the nature of soil, the value of land, and the method of management. In short, he ought, if possible, to be a practical farmer. And it would be no small advantage, were he to have his residence and his farm upon the estate which he is employed to manage. Thus qualified, and thus situated, he would be able, on the one hand, to form, upon every occasion, a

right judgment of his master's interest; and to guard him against any unfair advantages that might be attempted; and, on the other, to discern clearly what ought, and what ought not, to be granted to tenants, both in the original paction, and in the progress of its fulfilment. And he would be able also to give sound advice to the tenants, with respect to the method of managing their farms, and to ensure a prompt compliance, by exhibiting, on his own farm, the successful result of the practice he recommends. I need scarcely add, that strict and inflexible integrity is peculiarly requisite in one entrusted with a business of this kind. With a view to secure extraordinary favour from his employer, such a man will not allow himself to harrass and distress the tenants, by iniquitous and oppressive exactions; nor will he be tempted, by the offer of bribes or favours, to grant the tenants advantages and indulgences inconsistent with justice, and injurious to the landlord or his estate. A factor of this character, and of this character all factors ought to be, will inspire the tenants with activity and confidence, strengthen their attachment to their master, secure a cheerful and punctual payment of rent, and thus promote the best interests of both parties.

SECT. II.—TENURES.

THE lands in Fife generally hold blench and feu of the Crown. Blench-holding is that kind of tenure, by which the vassal is bound to pay

to the superior an annual elusory duty, such as a penny Scots, merely as an acknowledgment of the superiority. Feu-holding, again, is that by which the vassal is obliged to pay to the superior an yearly rent in money or grain, in the name of feu-duty. Several of the proprietors, who hold their lands by this tenure, pay a very considerable sum annually to the Crown. Anciently, a large proportion of the property of this county held of the clergy, but which now, since the abolition of Episcopal government, holds of the Crown, as coming in place of the bishops. The feu-duties for such lands were paid, partly in money, and partly in grain. They still retain the name of Bishop's rents: but the proportion, formerly paid in grain, is now paid in money by the fiars of the county. The chief revenue of this kind in Fife arises from the archbishopric of St Andrew's. A few tenements hold of the Prince, and some of the lands pay a revenue to the Castle of Edinburgh.

The number of freeholders in Fife, qualified to vote for the member of Parliament, presently standing upon the roll, as made up at the last Michaelmas head-court, amounts to 173.

Besides those who hold immediately of the Crown, there is a great number of heritors, and many of these of considerable property, who hold their lands of a subject-superior, and of course have no voice in the election of the member of Parliament. There is also another class of proprietors, who pass under the general designation of feuars, holding of individual proprietors, and subject generally to a small duty, or quit-rent. Exempted from the payment of

cess, and all public burdens, except such as they are subjected to in common with the inhabitants at large, they cannot rank as heritors, and are excluded from all concern in the management of county business. This class is very numerous, and their number has of late greatly increased. Within the last ten or twelve years, a considerable quantity of land has been feued to manufacturers, tradesmen, and others, especially in the neighbourhood of villages, in some cases, simply for houses and gardens, and in others, for the convenience of keeping a cow. In the settlement of these feus, no original price or *grasum* is, in general, required, but a perpetual yearly rent or feu-duty is fixed, the amount of which is mostly from 3 l. to 6 l. per acre, more or less in proportion to the quality of the land, or the convenience of its situation.

Burgage-holding is another tenure known in this county, and is that by which royal burghs hold of the Sovereign the lands which are contained in their charters of erection. There are thirteen royal burghs in Fife which have a right to parliamentary representation, besides some others, which do not enjoy that privilege.— Though I have not had access to any of their charters, yet, from the Statistical Account of Kirkaldy, it appears that the burgh of Kirkaldy had anciently considerable property annexed to it, to be held of the Crown: and it is presumable that the charters of the other royal burghs would contain similar privileges. It is believed that the greater part of these burgh lands have been alienated and feued out to private individuals; but still the burgh, considered in its cor-

porate capacity, must be held as the Crown vassal, and the present feuars only as sub-vassals holding of the burgh.

In Fife there are two complete districts of burghs, each of which sends a member to Parliament, viz. one comprehending the burghs of Dysart, Kirkaldy, Kinghorn, and Burntisland; and the other Pittenweem, Easter and Wester Anstruthers, Crail, and Kilrenny. The burghs of Cupar and St Andrews are united to Perth, Dundee, and Forfar; and Dunfermline and Inverkeithing, to Stirling, Queensferry, and Culross. Fife, therefore, has, in effect, four representatives in Parliament, and consequently, nearly the eleventh part of the whole representation of Scotland. This however is no more than its just share, being nearly in proportion to its valuation, and the amount of cess and land tax which it is bound to pay.

CHAPTER III.

Buildings.

SECTION I.

HOUSES OF PROPRIETORS.

FEW counties in Scotland can boast of so great a number of noblemen's and gentlemen's houses as the County of Fife; many of which are uncommonly elegant, and by the rich and extensive plantations, and pleasure grounds, with which they are surrounded, add greatly to the beauty of the country. To enumerate all the houses belonging to proprietors would be unnecessary; I shall therefore mention such only as appear to be most worthy of notice.

Houses of the Nobility.

* Crauford Lodge	The Earl of Crauford
Leslie House	The Countess of Rothes
Aberdour	The Earl of Morton
Dinnibirsel	The Earl of Moray
Kelly House	The Earl of Kelly
* Cambo House } }	

* Broom Hall		The Earl of Elgin
Melville House	}	The Earl of Leven and Melville
Balgownie Castle		
Belcomie		

Houses belonging to Baronets.

Fordel		Sir John Henderson
Dysart		Sir James St Clare Erskine
Pitferrane		Sir Charles Halket
Elie House		Sir Philip Anstruther
Balcaskie		Sir Robert Anstruther
* Tory	}	Sir William Erskine
* Lundin House		

Houses belonging to other Proprietors.

Balcarras		The Honourable Captain Lindsay
* Raith		Mr Fergusson
* Balmuto		Lord Balmuto
Cockernie		Mr Moubray
Pitliver		Mr Wellwood
* Dinnikeer		Mr Oswald
Wemyss Castle		General Wemyss
Durie		Mr Christie
* Largo		Mr Durham
* Coats		Mr Lindsay
* Strathairlie		Mr Briggs
* Balchristie		Mr Christie
Newton		Colonel Thomson
* Lethallen		Major Lumsden
Kilconquhar		Mr Bethune
Innergelly		Mr Lumsden
Kilrenny		Captain Gilbert Bethune
Pitmillie		Col. Monypenny
Cuttlehill		Mr Wemyss

* Lochorr	Mr Syme
Balingry	Mr Bonnar
Balbedie	Mr Malcolm
Inchdornie	Col. Ayton
* Balbirnie	Mr Balfour
Balfour	Capt. Gilbert Bethune
Pittilock	Capt. Law
Kirkforthar	Capt. Seton
* Barnslee	Col. Paston
* Cariston	Mr Wemyss
Auchtermairnie	Mr Lunden
* Kingsdale	Mr Stark
Stratherny	Col. Douglas
Wemyss Hall	Mr Wemyss
Strathtyram	Mr Cheap
* Blebo	Mr Bethune
* Smithy-green	Mr Campbell
* Bendirran	Mr Dalzell
* Upper Rankeilor	Col. Hope
* Nether Rankeilor	Major Maitland
Ramorny	Mr Maitland
* Tarvet	Capt. Rigg
* Saintford	Mr Stewart
* Clato	Mr Low
* Annfield	Mr Low
* Lathrisk	Mr Johnston
* Cunnochie	Major Paterson
Fernie	Mr Balfour
* Wellfield	Capt. Cheap
Myres	Mr & Mrs Moncrieff
Rossie	Capt. Cheap
* Pitlour	Mr Skene
Nuthill	Mr Sandilands
* Mugdrum	Mr Hay
Pitcairlie	Mr Cathcart
Lithrie	Col. Baillie
* Birkhill	Mr Wedderburn
Mountwhannie	Mr Gillespie
* Balgarvie	Heirs of the late Mr Robertson
* Naughton	Major Morrison
* Tayfield	Mr Berry
* Hilltown	Miss Bell
* Lochmalonie	Major Scott

Ardit	Mr Anstruther
Kincraig	Mr Gourley
Carslogie	Col. Clephane
Earlshall	Mr Henderson
Kemback	Mr M'Gill
* Chapel	Mr Arnot
Kevil	Mr Robison
Pittencrief	Capt. Phin
Logie	Mr Hunt

There cannot, perhaps, be a surer criterion by which to judge of the affluence and prosperity of a country, than the state of its buildings. When we find the houses few, of a mean appearance, and ruinous or in bad repair, and at the same time see few or no buildings going forward,—we immediately and justly conclude that there is neither spirit, nor taste, nor wealth in it, and that improvements of every other kind must be declining, or at a stand. But when the buildings are numerous, many of them superb and elegant, and all of them neat, and in good order; and when we observe building going on without interruption, and new houses starting up in different places every year,—we naturally infer general wealth, growing prosperity, and a corresponding progress in every other kind of improvement. If this be a fair rule of judging, then the state of the buildings in Fife, at present, and for some years past, must suggest very flattering ideas of its advancing prosperity.

Amongst the proprietors houses above enumerated, all those marked with an asterisk

have either been wholly built, or have received very large additions, or have undergone very extensive repairs, within the last twenty-four years. If to these we add several large and elegant houses that have been built of late by some opulent manufacturers in Kirkaldy, Dysart, and other places, the expence of building them will, upon a moderate calculation, amount to 100,000 l., within the above-mentioned period. And if such a large sum of money has been expended in building and repairing only fifty or sixty houses, what an immense sum may we suppose has been laid out, during that time, in building small proprietors houses, farm-houses and offices, large houses for public works in the manufacturing line, feus, cottages, and many other houses in the towns and villages? Should we hazard a calculation, it cannot be less, it probably be more, than 18,300 l. annually, which is only 300 l. to each parish, and yet this amounts to 439,200 l.; so that the whole money expended in building in this county, during the last twenty-four years, cannot be under 539,200 l. It consists with my own knowledge, that, in one country parish, the money spent in building new houses, during the last fourteen years, without taking the houses of any of the great proprietors into the account, has amounted to upwards of 10,000 l.

SECT. II.—RUINOUS BUILDINGS.

THIS county presents to the eye a great number of ancient edifices, fallen, or falling into decay. Some of these ruins are truly magnificent, and are striking monuments of the taste and opulence of our ancestors in ancient times.

In St Andrew's, a town of great antiquity, the remains of several superb structures are still to be seen. *St Regulus's Chapel and Tower*, said to have been built in the fourth century, continue remarkably entire. The two side ailes of the chapel are, indeed, demolished; but the body of the building remains. The tower is a square of 20 feet, and 108 feet high, of asler work, and still in high preservation. The arches of the doors and windows are semicircular. The priory also is an extensive ruin. The surrounding wall is pretty entire, and part of the houses belonging to the prior and sub-priors still remain.

Adjoining to the priory are the ruins of the *Cathedral*. This magnificent fabric was begun by Bishop Arnold in the year 1161, and was finished by Bishop Lamberton, anno 1318, 157 years from the time when it was begun. It was built in the figure of a cross, the length from east to west measuring 370 feet, and the transept 322 feet. Of this extensive and elegant building nothing now remains, but fragments of the east and west ends; a part of the west wall of the south transept, and a part of the south wall to the west of the transept. The rest

was demolished by the Reformers, in the days of Mr John Knox. It is matter of regret, that zeal, employed in so noble a cause as the overthrow of papal superstition and tyranny, should have unfortunately, in its course, destroyed such a valuable monument of the taste and skill, as well as the opulence, of our country in former times. The original grandeur of the fabric, however, the style of architecture, and the excellence of the workmanship, may still be traced in the parts that remain.

On the north side of the town, and on a perpendicular rock, stand the ruins of a castle called *Cardinal Bethune's*, in which he resided, and in which he was slain. It has been a spacious and strong building; but was almost wholly demolished, in consequence of an act of council, after the Cardinal's death. Here is still shewn the window from which he beheld, with barbarous pleasure, the execution of Wishart, and from which also his own body was afterwards exposed, when he was put to death by Norman Leslie, in the year 1545.

Near the west end of the south street, and on the south side, is a convent of Grey Friars. The ruins of the chapel are still to be seen, and are esteemed a great curiosity. And at the west end of the north street was a convent of the Black Friars, of which nothing now remains but a part of the garden wall.

In Dunfermline, too, we meet with the vestiges and ruins of many ancient buildings of great extent and magnificence. Here are still to be seen the ruins of the *Abbey* founded by Malcolm Canmore, and finished by his son Alexander I.

for the Order of the Benedictine Monks; a building so spacious, that, we are told, three sovereign princes, with all their retinue, might have lodged conveniently within its precincts. It was at first governed by a prior, but was, afterwards, changed into a monastery by David I. This abbey was almost wholly burnt down by the English, in the reign of Edward I. And the principal parts of the church, with some remaining cells belonging to the monks, were demolished, it is supposed, at the Reformation. The present ruins of the abbey are inconsiderable; but there still remains a window, which belonged to the Frater hall, and which strikes by its extraordinary size, and the beauty of its workmanship. And the present church of Dunfermline, the remains of the old abbey church, may serve to give some idea of the ancient grandeur of that venerable fabric.

Here, too, is to be seen the fragments of a *Tower* or *Castle*, built by Malcolm III., and in which he resided; and also the south-west wall of a magnificent *Palace*, probably the abode also of royalty, though the period of its erection is unknown.

In the parish of Newburgh, and in the middle of an extensive field of rich land, gently rising from the edge of the river Tay, stand the venerable ruins of the *Abbey of Lindores*. This monastery was founded in the 12th century, and dedicated to St Mary and St Andrew. The monks were of the Order of St Benedict. They had many churches, and drew large revenues from several different counties. The extent of ground occupied by the buildings of the abbey

cannot now be known, as many of them have been completely razed, and the ground on which they stood converted into arable land. From the remains of the church, which are still extant, no distinct idea of the size or elegance of the fabric can be formed. Parts of the garden walls are still standing, and a number of the fruit-trees still continue to bear. These trees, from the appearances of decay, which they exhibit, must have been long since planted; but whether in the days of the monks, or by the residing proprietor, after the abbey was erected into a temporal Lordship, it is impossible with certainty to say.

In addition to the ecclesiastical buildings already mentioned, we might take notice of the abbey of *Inchcolm*, the priory of *Pittenweem*, the abbey of *Balmerino*, and several other religious houses, the ruins of which are still to be seen. But referring the curious, for a description of these, to Grose's *Antiquities*, and Sibbald's *History of Fife*, I shall now mention the ruins of some of the most remarkable secular buildings in this county.

The *Palace of Falkland* deserves to be taken notice of in the first place. It was originally one of the seats of the M'Duffs, Earls of Fife, and was then called the castle of Falkland. In the reign of James I. it was forfeited to the Crown. Afterwards it was greatly enlarged and ornamented by James V.; and from the pleasantness of its situation, and the conveniency of the adjacent country for hunting, it was made a royal residence. The south front is yet remarkably entire, and partly inhabited. The east-wing

was accidentally burnt down in the time of Charles II., of which a great part of the, naked and mouldering walls still remain. Of the rest, few vestiges are now to be seen.

Bethune's Tower, near Melville house, has evidently been a part of a much more extensive building, the remains of which can, at this day, be easily traced. The age of this old fabric cannot be ascertained. But Cardinal Bethune repaired it, and occasionally resided in it. The arms of the Bethunes, and several heads of the Cardinal in his cap, are still distinctly seen on the wall. The Earl of Leven, whose property it now is, is careful to preserve and keep in repair this venerable relic of antiquity.

The *Castle of Rosyth*, in the parish of Inverkeithing, is built upon a rock, which is surrounded by the sea at full tide. It consists of a large square tower, with some low ruinous buildings adjoining, and has the appearance of being a part of a much larger fabric. On different parts of the walls, several pieces of sculpture still remain, and some inscriptions continue distinctly legible. This castle was anciently the seat of the Stewarts of Rosyth, lineally descended from James Stewart, brother-german to Walter the great steward of Scotland, and father to King Robert. After having changed its owners several times, it came at last into the hands of the Earl of Hopeton, whose property it now is.

The *Castle of Lochorr*, an old ruin, stands in the middle of the loch of that name in the parish of Balingry. It was built by a Duncan Lochorr in the days of King Malcolm III., and consisted of a strong tower and many lower hou-

ses, all enclosed by a wall washed by the water of the loch. In process of time, Wardlaw of Tory, by marrying the heiress of Balingry, got a right to this castle; and before the time of Charles I. it was the chief mansion-house of that family. This ruin formed a beautiful object in the loch before it was drained.

Seafield Tower is an old ruin in the parish of Kinghorn, standing on a rock close by the shore. It was the ancient seat of the Moubrays, a family of distinction in this county.

The *Castle of Ravenscraig*, an ancient fabric now in ruins, stands upon a rock projecting into the sea, at the east end of Pathhead, in the parish of Dysart. It was a gift from James V. to William St Clare Earl of Orkney, with the adjoining lands, in consideration of his resigning the titles of the Earl of Orkney. Ever since that period, it has been in the possession of the family of St Clare.

The *Castle of Easter-Wemyss*, usually called M'Duff's castle, stands in the parish of Wemyss. It is said to have been built by M'Duff Earl of Fife, in the eleventh century. Two square towers, with a considerable part of the wall, which surrounded the castle, still remain. It is situated on a delightful eminence, about a hundred yards from the shore.

Craigball, in the parish of Ceres, is an extensive ruin, situated upon the bank of a beautiful glen, planted with trees. It was the seat of Sir Thomas Hope, advocate to Charles I., from whom the principal families of the name of Hope in Scotland are descended, and continued to be the residence of his heirs, till the beginning of the present century.

Tarvet Tower, a beautiful fabric of hewn stone, stands on the estate of Scotstarvet, in the parish of Ceres. It is twenty-four feet square, and fifty feet high. It is situated on high ground, and is seen at a great distance. The tower is formed by one lofty vault raised on the top of another, the uppermost of which is surrounded with a battlement, and has over it an apartment still covered with slate. From the thickness of the walls, and from the small number and diminutive size of the windows, it appears to have been originally designed for a place of defence.

Denmiln Castle, in the parish of Abdie, *Leuchars Castle*, in the parish of Leuchars, *Bendon*, in the parish of Markinch, and some others, might have been noticed. But passing these, we shall only mention

Balgonie Castle, in the parish of Markinch, belonging to the Earl of Leven. This is a fabric of great antiquity, and of considerable strength. The time when it was built cannot be exactly ascertained: but, from the best information that can be got, we are inclined to think that it was built in the 12th or 13th century. From the similarity of its architecture to that of the castle of Loch-Leven, it is presumeable that it may be nearly of the same age; and, though the precise time when the latter was built cannot be known, yet we find that it was a place of strength at the beginning of the 14th century, as it then sustained a siege and prevailed.

Balgonie Castle is pleasantly situated on the south bank of the Leven, elevated about 36 feet above the bed of the river. It is of a quadrang-

gular form, and stands on an area of about 135 feet by 105. The open court within is 108 feet by 65. The tower, which stands on the north side, and near the north-west angle, is 45 feet by 36 feet over the walls, and near 80 feet high. The top is surrounded with battlements, which project a foot over the walls. It has a square roof in the middle, between which and the battlements a passage goes quite round, covered with flat stones. The walls of the two lowest stories, both of which are vaulted, are $8\frac{1}{2}$ feet thick; but, above these, they are only 7 feet thick. There is an apartment in it called the Chapel; and in the wall on the opposite side of the court, the ruins of a room are still to be seen, which was called the Chaplain's room.

Connected with the tower, there is a house of three stories, extending to the north-east corner, built by the first Earl of Leven: and on the east side of the court is another house of the same height, built by the present Earl's grandfather. On the south and west sides of the court there is a high wall, which appears to be coeval with the tower; and, without the wall, the remains of a large fossè are still to be seen. The architecture of the keep is still very perfect; and the third storey has been lately repaired and made habitable by the present Lord Balgonie.

Besides the ruinous buildings already mentioned, there are many others of inferior name, but which were once the habitations of families of great respectability; and many castles and mansion-houses of eminent men, the foundations of which still remain, but which are so completely demolished, that we could scarcely discover

where they stood, did not tradition or ancient record direct us to the place.

Ruins so extensive and magnificent, and, in proportion to the narrow extent of territory to which they are confined, so numerous, while they serve to give us a very high idea of the splendor and opulence of this county in former times; and of the dignity, rank, and consideration of its ancient proprietors; must, at the same time, spread a melancholy gloom over the mind, while contemplating them, and lead irresistibly to serious reflection. The time was when these mouldering fabrics stood firm and complete, adorned with all the elegance known in ruder times, and many of them inhabited by the first families in the kingdom. In them all the pomp of power and riches was displayed; there hospitality spread the sumptuous board; the voice of health and festivity resounded through the halls; and the gates were crowded with numerous retainers and dependents. But now these once stately mansions, unroofed, stripped of their ornaments and deserted, are mouldering away in solitary silence, under the ravaging hand of time. The powerful, the flourishing, and wealthy masters, whom they once boasted of, are long since gone and forgotten in the dust. The names of but a few, and the deeds of still fewer, have reached the present times. What they and their habitations are now, we, and our still less durable dwellings, in the revolution of a few ages, must certainly be.

Immortality is the natural wish of the human heart; and though too many give themselves

but little concern about an immortality beyond this present life, there are few who do not wish to live in the remembrance of posterity. But by what means shall this wish be most effectually accomplished? The cabinet, the field, the bar, the sciences and the arts, are all avenues to lasting fame: but they are avenues open to a few only. Reputation may be more generally, and not less honourably acquired, by the more useful, though less splendid arts of rural life. Let the spade and the plough engrave your names upon your lands; and let your memory be perpetuated by substantial and permanent improvements of the soil. With what warmth of affection will you be remembered by posterity, when they shall be able to say, to the skilful and patriotic industry of our ancestors we owe the richness and fertility of our lands. These aged and extensive plantations which now shelter and adorn the once naked and barren hill, were planted by their hands. By their toilsome and expensive labours, the marsh has been drained, the stony ground cleared and subjected to the plough, barren moss converted into fertile soil, and luxuriant crops taught to grow, where nought but water, heath, furze, or rocks, were formerly to be seen.

SECT. III.—FARM-HOUSES, OFFICES, & REPAIRS.

NOT more than twenty years ago, the farmers houses and offices in this county had, in general, a mean and wretched appearance. The farmer usually lived in a low smoky house,

badly lighted, and without divisions or separate apartments, except such as were formed by the arrangement of the furniture. The office-houses were small, the walls low and rudely constructed, and the roofs ponderous, and with difficulty kept dry. Sometimes they were placed irregularly, as fancy or supposed convenience dictated; and sometimes they formed a square with the dwelling-house, the barn on the one side, and the stable and byre on the other. In the middle stood the dunghill, the hollow situation of which received and retained all the rain that fell within the square. During the summer months, after the dung collected through the season, was carried to the land, the hollow where it lay exhibited the disagreeable object of a pool of stagnant putrid water, equally offensive to the smell, and pernicious to the health. The intermediate passages between the houses and the dunghill were very narrow, and often a complete mire by the treading of the cattle, or laid with round stones confusedly thrown together.

Since that period, however, there is a material change, in this respect, to the better. At this moment, there are, in Fife, a great number of very excellent farm-steads. The dwelling-house is of two storeys, substantially built, covered with slate, neatly finished, and with every necessary convenience for the accommodation of the farmer's family. The office-houses are built in the form of a square, sometimes at the back of the dwelling-house, and including it as a part of the square; and sometimes at a little distance from it, having stables, cow-house, barn,

shades for the implements of husbandry, straw-yard for feeding cattle, milk-house, hog-house, &c. all built of stone and lime, covered with slate or tyle, conveniently arranged, and of sufficient dimensions for the size of the farm. Of these, several have been projected and executed by the landlords, upon certain conditions specified in their agreement with the tenants; some by small proprietors, who farm their own grounds; and some, by the tenants themselves, and that without the promise or prospect of any allowance or adequate compensation. This last case, however, occurs only where the leases are of long endurance.

But though we meet with a considerable number of farm-steads of this description, there are still many which continue in the barbarous state first described, and these upon the grounds of proprietors from whom better things might have been expected.

Between those, which may be styled the best, and the worst, there are a great number of farm-steads, which, though tolerably decent and commodious, are still, through the inattention or ill judged parsimony of the landlord, or the indolence and negligence of the tenant, destitute of much of that convenience and accommodation, which every farmer ought to have, and which, indeed is necessary to the prosperity of his farm. Some, for instance, are badly constructed and arranged, or on too small a scale for the farm. Some have no granaries or lofts for holding threshed grain. Some have either no shades, or shades not sufficiently large for the farming utensils; so that we often see their carts and

Plan of the Farm Stead of Kinninmonth in the Parish of Kinglafsie the property of James Blyth Esq^r

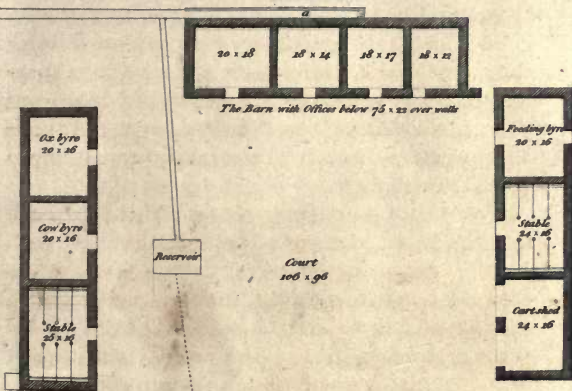


Second Story of House



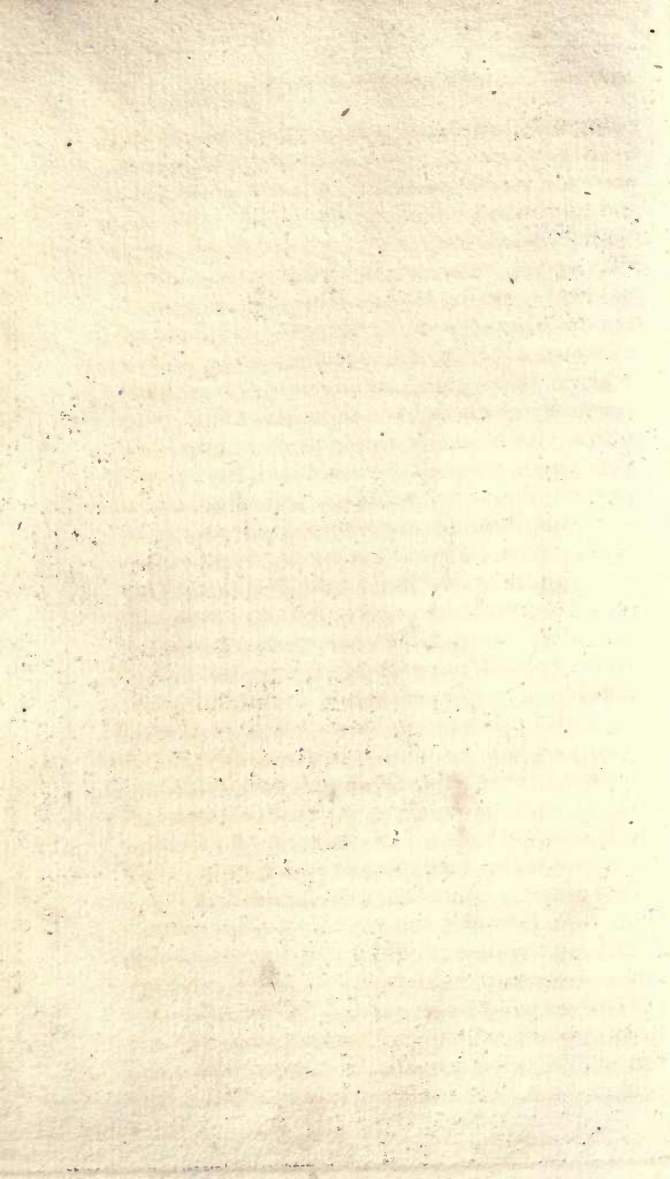
The Barn above the Byres is 9 feet of wall above joists. Two doors in the back, one 5 feet & the other 4.7 high. One door in the front & one window. a. Threshing mill wheel.

Ground Plan



Length of house 45 ft. over walls, width 23 ft. 6 in.





ploughs rotting, in consequence of their continued exposure to the sun and rain. Some have no straw-yards, no feeding byres for their cattle, and both stables and byres too short in the saddles. Many have no proper site for the dung-hill, so that in some cases, we see the dunghill soaking in water, and in others the rich moisture running to waste. Some want a proper milk-house, and other conveniences necessary to a dairy. Some are set down in an extreme corner of the farm, or at a distance from good water. And many have no better threshing floors than damp clay. And, therefore, though much has been done of late, much yet remains to be done, for the improvement of the farmsteads. Neat farmers houses and complete offices, while they do credit to the proprietor, and give a beauty and richness to the appearance of the country, are, at the same time, absolutely necessary to the prosperity of the farmer. Every gentleman, of a generous and liberal heart, will feel much pleasure in seeing his tenants in a thriving condition. But this cannot well be expected, unless they have every reasonable indulgence and convenience to excite them to carry on their operations with spirit, and to enable them to derive every possible advantage from their farms. Farm-houses inconveniently situated, or built and arranged on an injudicious plan, may render extraordinary labour requisite, and consequently heighten the farmer's expences beyond what is necessary. The offalls of the dairy, kitchen, barn-yard, garden, &c. may be turned to good account, by rearing pigs and poultry: but this cannot be done, without pro-

per houses for lodging and protecting these animals.

Farm-steads ought to be proportioned to the extent, and suited to the nature of the farms, on which they are built. The farmer of 100 acres of land may be supposed to carry on the same plan of husbandry with the farmer of 400 or 500 acres: the difference, therefore, ought to be in the extent, not in the kind of his accommodations. The former has occasion for the same houses and conveniences, as the latter, but only smaller, in proportion to the smaller size of his farm. Neither is it to be expected that he should have a dwelling house equally spacious and elegant with the other. The nature of the farm ought likewise to be attended to in this matter. A farm entirely under tillage, and one chiefly suited to grazing, will require different kinds of accommodation.

In short, farmers will, in general, be able to point out what may be necessary to accommodate them, though seldom to tell in what manner utility and neatness are to be united in the execution. When farmsteads are to be built or thoroughly repaired, it might be adviseable that a proper person be employed to plan before building, and the plan deliberately examined and considered by both landlord and tenant; in which case, no material defect could escape the observation of both. The expence should, in the first instance, be laid out by the proprietor, as no part of the tenant's stock should be diverted from its proper purpose, the improvement of his farm. Neither ought the landlord to consider this as lost money. There is no

farmer of understanding, who will not give more rent for a farm that has such a complete farmstead as to enable him to carry on his business with the greatest possible advantage, than for one that has it not.

Repairs.—This matter depends very much upon circumstances. In general, the incoming tenant, receiving the whole houses from his predecessor, in a habitable condition, is bound to leave them in the same state at his removal. But it sometimes happens that the houses, upon the entry of a tenant, are in a ruinous state, and the former tenant not bound to repair them; sometimes new houses are to be built, or additions to be made, or the old houses to be repaired in a different form. In these cases, the building or reparations depend upon the bargain between the landlord and the tacksman. If the proprietor is at the expence of the work, he gets a plan and estimate, and by his own manager sees it executed; or perhaps he allows the estimated sum to the tenant, who takes charge of the execution, and sees that the work be sufficiently done. If the tenant repairs the houses at his own expence, he takes the farm with that burden, to which he attends in the stipulated rent. In all cases, however, he is bound to uphold the houses, and to leave them in sufficient order.

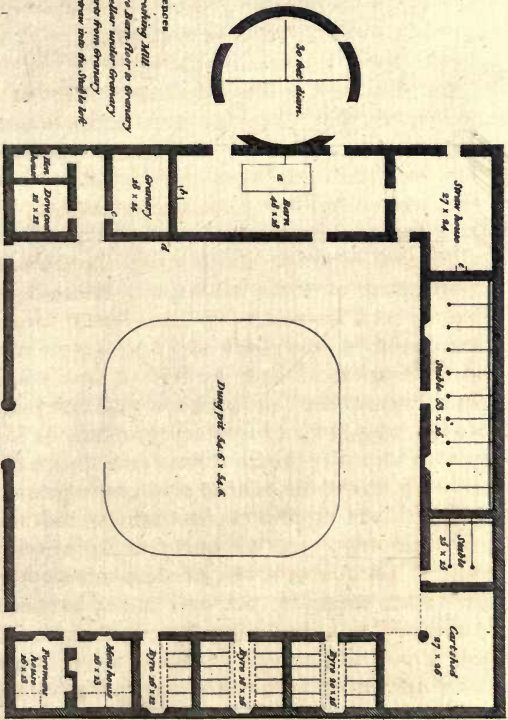
Insuring all farmsteads against fire is a measure which I would seriously recommend as highly prudent and proper. And to encourage tenants to this, landlords ought to contribute a proportion of the premium, especially as their own interest is materially concerned. An acci-

dental fire may not only ruin the tenant, but totally disable him for paying his rent.

SECT. IV.—COTTAGES.

COTTAGES in this county, in point of improvement, have kept pace with the houses of the farmers. They are, indeed, generally better now, than many of the best farm-houses were thirty or forty years ago. Such as have lately been built are usually about 15 or 16 feet wide, and 6 or 7 feet high in the side walls, constructed of stone and lime, covered with thatch, well lighted, and sufficiently large to accommodate any ordinary family. On the north division cottages are few. This is an inconvenience that hath been felt and complained of. Feuing ground in small proportions is not common in that quarter, and tenants are backward to allow the benefit of a cow's grass to a cottager. And therefore, mechanics, tradesmen, and labourers, are discouraged from settling there. Through the rest of the county cottages are more common, but still not so numerous, it is thought, as their importance to agriculture and population requires. They are of various sizes, consisting of from three or four to eight or ten dwelling-houses. When these cottages are attached to particular farms, and at the disposal of the tenant, as indeed they generally are and ought to be, they must be of great benefit to the farmer. He has it in his power to let the houses to married servants, to tradesmen and labourers, on such terms as always to se-

Plan of a Farm Steading belonging to W^m Hunt Esq^r of Loggie.



References

- a. Machinery of Thrashing Mill
- b. Ditch 3 1/2 feet above Barn floor to Granary
- c. Raily to potato cellar under Granary
- d. Door for taking carts from Granary
- e. Door for carrying manure into the Stable lot.



cure their assistance in hay-time and harvest, and at any other season when extraordinary hands may be necessary to expedite the business of the farm. But this subject we will probably have occasion to resume before the conclusion of the survey.

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CHAPTER V.

Mode of Occupation.

SECTION I.

SIZE OF FARMS.

FARMS in this county, in respect of extent, differ much from one another. They are found of all sizes, from 50 or 60 acres to 400 or 500 acres. The average perhaps may be 120 acres. There are, besides, many tenements from 50 acres downward to 8 or 10. But few of these are occupied by actual farmers. Many of them are the property of small heritors; and many of them are taken by manufacturers, tradesmen, mechanics, and others, merely for convenience or amusement, who do not depend upon their produce for the support of their families, or the payment of the rent.

The question respecting the size of farms has been much agitated. Some have argued that large farms are most favourable to population, and to the complete and rapid cultivation of the soil; whilst others have insisted that small farms are best calculated to produce these advantages. But as the arguments on both sides appear to be equally conclusive, it is presumeable that both may be wrong. The truth is, the actual diversity of land, in respect of situation, quality, and

state of improvement, naturally points out the propriety of a diversity in the size of farms. There is, no doubt, a point on both sides beyond which we ought not to go. No arable farm, perhaps, ought to exceed 400, or at the utmost 500 acres: and none should fall below 60 or 70 acres. Between these two points, farms may be of all different sizes, without prejudice to the public, or to the individual, varying, however, in this respect, according to existing circumstances. If the ground be all arable, of a rich quality, and in a high state of cultivation, 60 or 70 acres may, in some cases, be sufficient, and may enable the occupant to rear his family, and to live in a decent, respectable style. But if the land be in a state of nature, or hath, as yet, received no substantial improvements, this size would be, by far, too small. No man of stock, enterprize, and ability, would sit down upon such a farm. He could have no room for exertion, no opportunity of a profitable application of his talents, and no prospect of receiving ultimately any returns corresponding to the capital and skill which he is able to employ. Farms, therefore, consisting of land of this kind, ought to be much more extensive. Three or four hundred acres might be sufficiently small. In like manner, ground that is not only arable, but, at the same time, best adapted to the cultivation of grain, may be let in much smaller proportions than would be proper in cases where the land is either not arable, or more applicable to the purposes of grazing and rearing cattle.

Besides, we find that there is a great diversity among men, in respect of abilities and circumstances: it seems proper, therefore, that the division and size of farms should be proportioned, in a correspondence to this diversity. A man may be able to stock a farm of 80 or 100 acres, but not one of 300 or 400. Or, in point of ability, he may be equal to the task of managing the former, and yet not qualified to conduct the more extensive and complicated operations of the latter. On the other hand, it would be hard to confine a man of large stock, and superior abilities, to a small possession, where he can have no scope for his genius, and where he cannot employ half his capital.

A mixture of large and small farms appears, in another point of view, to be extremely proper, as it may be the mean of preventing a dangerous diminution of active and experienced hands for carrying on the operations of husbandry. Every gentleman-farmer has usually a foreman, to whom he commits the management of his farm: and almost every great farmer has one, either as a foreman or principal servant, on whose abilities and fidelity he can trust for conducting the practical part of his business. If this foreman be married, as is often the case, the prospect of being able to secure a small farm for his son, if he has one, and to stock it, by the savings of his honest industry, will be a powerful inducement to breed him a farmer. Nor will this motive influence those merely who are already engaged in the farming line. The consideration of such a decent independence, so easily accessible, will induce others

to breed their children to husbandry, by putting them into the service of the farmers; whilst the desire of attaining the object in view, as speedily, and with as much advantage as possible, will render such servants sober, industrious, and attentive to their duty.

Small farms thus passing into the hands of those who have acquired skill and experience on extensive farms under a proper system of husbandry, will form excellent nurseries for farm servants both to gentlemen and principal farmers. But should farms be generally of such magnitude as to preclude every hope of this kind, parents will seek independence for their children, by breeding them manufacturers, tradesmen, or mechanics.

In short, either extreme would be attended with bad consequences. On the one hand, to mince down all the land in the kingdom into small tenements, whilst this could neither encrease population nor add to the strength of the state, would, most probably, check the progress of improvement, and prevent its being ever brought to any degree of perfection. On the other hand, to throw the whole estates of the kingdom into the hands of a few great farmers, as it might be equally hurtful to the progress of agriculture, would certainly be highly impolitic, as it would weaken, in a considerable degree, that support and security which the constitution of the country, as well as public order and tranquillity, derive from the general diffusion of property. That *amor patriæ*, that public spirit, that strong sense of national honour, which, in former times, animated the breasts even of the

lowest orders, seem now to be, in a great measure, gone, and nothing but the selfish principle remains, by which the great body of the people can be bound to their country and its support.

Let us suppose the whole lands in Scotland, usually in the possession of husbandmen, thrown into the hands of 8000 great farmers; and each farmer to have one son who might be depended upon, as having a joint interest with his father; there would, in this case, be only 16,000 of this class, whom we could trust to join the landholders in the defence of their country: all the rest employed in husbandry being in a servile dependent state, no certain or effectual support could be expected from them. Suppose again, that instead of 8000, the kingdom should be divided into 30,000 farms; in this case we should have 60,000 men of this description to join their masters, who, though not equally interested with those before mentioned, would, nevertheless, have such a stake in the country, as would be a sufficient inducement to oppose every attempt against the peace and safety of the kingdom, whether from foreign or domestic foes.

Amongst the numerous causes which combined to overthrow the French Monarchy, and to involve the *great nation* in anarchy, despotism, and blood, this defect was, perhaps, one of the principal and most availing. All were either extremely rich, or miserably poor. In the hands of the higher orders, were all the honours, wealth, and power of the nation; while dependence, servility, and abject poverty, was

the miserable portion of the lower, and by far the most numerous class. And if there were any intermediate gradations, the numbers who occupied them were few; and the insecure and uncertain tenure, by which they held their property, must have rendered their exertions feeble, even though they had been disposed to take part with their government. No wonder then, that men thus circumstanced, men who had nothing to lose, and no hopes of bettering their condition in the present state of things, should have been so easily deceived by the seeming patriotism of unprincipled demagogues, and so universally have fallen in with a scheme which promised them emancipation from poverty, dependence, and degradation, and a more equal distribution of property and power. And if we consider that turbulent and seditious temper which, for some years past, has discovered itself in this country, and which has required all the vigilance and activity of Government to keep in check, it appears highly probable that, had it not been for the weight thrown into the scale of constitutional authority and power, by the numerous, wealthy, and respectable classes which occupy the intermediate ranks between the great landholders, and those who have little or no property, revolutionary and anarchial principles might have prevailed, and this kingdom have experienced similar convulsions, attended with consequences equally disastrous and fatal.

SECT. II.—CHARACTER OF THE FARMERS.

Several of the farmers in this county, and these not the least respectable, came originally from other, and more highly improved parts of the kingdom; and being generally men of considerable stock, and possessed of superior professional knowledge, sat down, with great advantage, on the less cultivated, and consequently low rented lands in Fife; and, by their abilities and enterprise, have contributed not a little to forward the improvement of this county.

There are also many of the farmers, who were originally in a lower class, or in a different line of life; but having, by industry and frugality, acquired a little money, and having contracted a taste for husbandry, commenced farming on a small scale. By persevering in the same plan of rigid œconomy and hard labour, they gradually improved their stock, and at last launched out more extensively into the business. And now, in point of circumstances, as well as of professional skill, hold a respectable place among the farmers.

But the great body of the Fife farmers are the descendents of the old stock of cultivators; several of whom, just now, hold the farms that have been in the possession of their ancestors for some generations back. Formerly, the connection between master and tenant was very strong. They were, for the most part, warmly attached to each other; and the interest which the landlord took in the prosperity of his tenants

was generally repaid with corresponding affection and respect. This connection and mutual attachment often descended from father to son; and its long continuance was frequently the pride and boast of both. But now considerations of interest are weakening these old fashioned attachments; and the amount of the offered rent is generally more attended to than the plea of long possession. Nor can this, in every instance, be blamed. When an old tenant is industrious, and discovers good management, and an inclination to do well, he may reasonably expect a preference, upon equal, perhaps upon easier, terms than a mere stranger. But surely it cannot, in reason, be expected that a preference should be given, solely upon this ground, to a man who, by his indolence, ignorance, or dissipation, has suffered his farm to run into disorder, and has thereby disqualified himself for doing justice either to himself or to his master.

Though it may not, perhaps, be the principal object of this enquiry, to ascertain the moral and political character of the farmers, yet it might be improper to suffer this to pass altogether unnoticed. The principles and morals of men must ever have a powerful influence in modelling and forming their characters in relation to the several occupations and pursuits in which they may be engaged. In proportion as these are good or bad, the character of the farmer, as well as of the merchant, the manufacturer, the tradesman, &c. will be more or less respectable. Intemperance and dissipation will relax the sinews of industry, and divert the attention from business; and the want of integrity will

create suspicion and distrust, and hurt him in all his public transactions. His example will corrupt the conduct of his servants, rendering them negligent, unfaithful and disorderly, the consequence of which will be confusion and mismanagement, in every department of his business.

I feel much satisfaction in having it in my power to bear a favourable testimony to the character of the Fife farmers, in this respect. To affirm that there are no individuals among them of a suspicious, or openly bad character, would be a position which could neither gain nor deserve credit. Such perfection is not to be expected, even in societies much less numerous. But these exceptions are comparatively few. Taken in a body, their general deportment is characterised by decency, sobriety, and strict integrity. In domestic life they are regular, frugal, temperate, and œconomical. In their intercourse with one another, they are hospitable, communicative, and obliging. And in all their public transactions, their conduct is uniformly fair, upright and honourable.

Their political character is equally irreprehensible. Impressed with a proper sense of the advantages they enjoy under a civil Government, which affords protection and security to their persons and property, and suffers them to prosecute their labours and improve their fortunes, without the dread of oppressive exactions, or lawless depredations, they cherish the warmest sentiments of loyalty to our gracious Sovereign, and venerate the Constitution of their Country, as one of their most invaluable

blessings. Untainted by that revolutionizing spirit—that political *mania*, which, of late, hath so much agitated the public mind, and endangered the public tranquillity, they give no encouragement to the abettors of sedition, and are ready to contribute what lies in their power for the support of Government, and for the preservation of the peace and quiet of the Country.

Such is the character which the farmers of this county bear as men and citizens. Considered as cultivators of the soil, they deserve also to be mentioned with respect, as a very intelligent, active, and industrious body of men. A great proportion of them have distinguished themselves by their spirited exertions, their skilful management, and by the high state of cultivation to which they have brought their farms. A spirit of enquiry, a taste for improvement, and a laudable desire to excel in their profession, have, of late, spread very generally among them; by reading, by observation, by mutual communications, and by experience, they have acquired much professional knowledge, which, while it hath enabled them to correct former prejudices and mistakes, has led them to adopt the best plans of improvement, and, except when prevented by obstacles thrown in their way by the proprietor, or by the nature and situation of the land, have carried them into execution with judgment and success.

From the progressive improvements in the science and practice of agriculture, which have been going forward during the last twenty or thirty years, the condition and circumstances of the farmers have experienced an alteration to

the better gradually taking place. And their growing affluence, co-operating with the general progress of luxury and refinement through the nation, have had a very visible effect upon their manners and habits of life. Formerly it was customary for the farmers to subject themselves to every kind of drudgery and hard labour, undergoing the same toil, living upon the same fare, and often eating at the same table, with their servants. And in some instances this may be the case still, especially where their farms are small, their circumstances narrow, their rents high, and consequently cannot afford to exempt the master from personal labour. But many of the farmers now occupy a more respectable and important station. Their chief business is to superintend. The operative and servile part is committed to others: But the master's presence and direction are every where to conduct and forward the various necessary operations, in every department, and in their proper season. These requisite attentions, together with the business of the counting-room, and his attendance on markets for the disposal of his grain and cattle, a province which he usually reserves to himself, will afford little time for relaxation or idleness, and are surely much more conducive to his interest than holding the plough, threshing the grain, or filling and driving his own dung cart.

The alteration in their style and manner of living is equally remarkable. Their houses, in general, are decently and substantially furnished, and the apartments so arranged, and the general economy of the house so regulated, as to produce a more marked distinction between mas-

ter and servants, and to put an end to that indiscriminate intercourse in respect of sitting and eating, which was common in former times. Though many of them continue to be mostly supplied with necessary maintenance from the produce of their farms, and to be clothed with their own manufactures, there are few who do not indulge more or less in the luxuries of life. Butcher meat is much commoner now than formerly, and their Sunday's dress at least is furnished from the shop. The universal use of tea, as an article of living, need not be mentioned, as there is scarcely a cottager's house in the county where it is not to be found. It is to be observed, however, that between the great body of the farmers, and those who rank in the highest class, there is in this respect a very remarkable difference. Several of this last description are men, not only in easy but affluent circumstances, men who have had the advantage of a liberal education, and whose manners, from their intercourse with the world, have acquired a superior polish. Correspondent with these circumstances is their style and manner of living, the elegance of their furniture, the economy of their table, and the quality and fashion of their dress. Thus distinguished by education, fortune, and manners, they hold a most respectable place in the community, and are entitled to be considered as one of the intermediate links which, in the gradations of rank and opulence, connect the higher and lower orders of men in society.

SECT. III.—RENT.

THE rent of land in Fife is very different, being higher or lower according to the quality of the soil, the convenience of situation, or the state of improvement. Some land, from its situation in the neighbourhood of towns, and even some, from its own intrinsic richness, is rented as high as 4, 5, and 6 pounds per acre. Farms of considerable extent are let at 3 l. ; a great many at 2 l. per acre. In short, we find land rented in all the various gradations downward to 5 s. ; and even some moorish, hilly pasture ground below that rate. Grass parks generally bring a high rent. Those at Lundin, Balcarras, and in some other places, have been let as high as 3 l. per acre.

But, though the rents generally vary according to the difference of soil, and other circumstances, from the best observations I have been able to make, they appear to be in no just proportion to the comparative value of the land. Farms of inferior quality are, for the most part, higher in proportion than those of rich productive land. This inequality may arise from two causes : On the one hand, the proprietors of the poorer lands finding other gentlemen getting high rents for theirs, and not adverting to the difference of quality, or regarding their own property with a partial eye, struggle hard to be on a footing with their neighbours ; and though they may not succeed entirely to their wish, are generally fortunate enough to get an advance of rent above the due proportion. On the other

hand, tenants who are on the outlook for farms, and impatient to fix, incompetent judges perhaps of the quality of the ground, or cherishing too sanguine expectations from their own industry and skill, are induced, especially if spurred on by competition, to come up to the landlord's terms.

Formerly rent was made payable partly in money and partly in kind. The tenant was, besides, obliged to pay a certain number of poultry, to furnish a certain number of carriages, and sometimes to send a certain number of hands in harvest to assist in cutting down the landlord's corn. Of late, however, gentlemen, considering rent in kind as a troublesome concern, and of uncertain value, and wishing to have a fixed and known rental, have, in almost all the new leases, converted the whole rent into money, except the victual due to the minister, which the tenant is still obliged to pay, and for which, if not considered as a part of the stipulated rent, he is allowed a deduction, the price of the victual being regulated by the fiars of the county.

Were I permitted to give my opinion upon a subject, of which I profess not to be a competent judge, it would be, that the rent of every arable farm should be fixed in kind, the *ipsa corpora*, at the same time, not to be delivered to the landlord, but to be paid for in money, according to the rate of the fiars. To this plan, I know, some gentlemen object, because, from the variableness and uncertainty of prices, they can never have a certain and known rental, and consequently must ever be at a loss how to regulate their expenditure. But this objection is easily obviated. Let their expenditure be regulated

by the lowest supposable average prices, and if any overplus remains, which, most probably, will be the case, they cannot surely complain of this as a disadvantage. Tenants, also, may possibly object to this scheme, from the notion that prices may rise, in which case they would lose all the advance upon that proportion of their victual which they are bound to pay to the master. But this objection hath as little weight as the other. It will be admitted that the rent must be paid by the produce of the farm. When a tenant, therefore, proposes to take a farm upon a nineteen years lease, suppose, in order to determine what money rent he ought to pay, during that period, he must calculate the probable produce of the farm, the probable average price which that produce will bring during the currency of his lease, and what proportion of it may probably be necessary for defraying the expences of cultivation and management ; he will then be able to judge what proportion he can afford to carry to market for the payment of his rent ; and the average value of this constitutes the yearly rent which he ought to pay. If then it be necessary, that, before he can fix the money rent, he should know what quantity of victual must be allotted yearly for that purpose, it can, surely, be of no consequence to the tenant, whether he pay his rent in money or in kind, since, with respect to him, the one is tantamount with the other ; or whether he pay the average price of the victual for 19 years in the name of money-rent, or the price it brings every separate year, during that period, since, in the calculation,

they amount to the same. Upon the whole, this plan seems to be perfectly fair and equitable for both parties. If the prices shall exceed the calculation, the master, indeed, as is reasonable, has a share of the advantage; but the tenant is a gainer on that part of the produce which belongs to himself, to the amount of the excess of the prices above his expectation. If the prices shall, at any time, fall below the calculation, the whole loss does not fall upon the tenant. The amount of what the price of the stipulated victual rent is below the original calculation, is born by the landlord. Neither party, therefore, can have any just reason to complain.

Formerly, when less labour was bestowed upon land, and the operations of husbandry admitted of longer intervals, especially in the summer months, when the farmer's servants and horses had little else to do, than the former to pull thistles and the latter to eat them, the burden of personal services was slightly felt. But, under the present system, when every season, and every part of the season, has its own particular task, which, in general, cannot, without risk, be neglected or delayed, they must be considered as a great hardship. To call for the farmer's reapers, when his own corns are ready to be cut down, or to demand his horses and servants, when the critical moment of sowing, fallowing, &c. is present, may cause him lose the proper season, derange his plans, and subject him to material damage. These services, however, have seldom been rigidly exacted, and will, it is presumed, be in time entirely given up.

SECT. IV.—TYTHES.

TYTHES, so loudly and so justly complained of as an intolerable evil, wherever they prevail, are unknown in this county. In one or two places, indeed, tythes still continue to be exacted. But these are such inconsiderable spots, that the grievance is little felt, and deserves not to be mentioned. Exemption from this oppressive burden is not peculiar to Fife; it is very generally enjoyed through the whole of Scotland; and must be considered as a circumstance highly favourable to the progress of agriculture, and to the peace and prosperity of the country at large. The proprietor, in letting his lands, feels no obstruction from this quarter to the natural and reasonable increase of his rental. The activity of the tenant, in the cultivation of his farm, is not discouraged or checked by the apprehension that another will carry off a large share of the profits of his industry. And a fruitful and lasting source of misunderstanding, and often of ill blood, between the parochial clergy and the tenantry, so fatal to the respectability and usefulness of the clerical office, is removed.

SECT. V.—POOR'S RATES.

POOR'S rates have, as yet, obtained no establishment in Fife. Extraordinary contributions, in seasons of extraordinary scarcity, have been

made: and some of the most charitable among the higher and more opulent classes, afford occasional aid to the most indigent by private alms. But the poor are generally supported by the weekly collections at the church doors, by the allowance for the use of the parish mortcloaths, and by the interest of funds raised by savings or donations, but which, for the most part, are of inconsiderable amount. These funds, scanty and inadequate as, for the most part, they are, have, nevertheless, been made to answer the purpose hitherto, by the judicious and æconomical management of the kirk-sessions, under whose administration they are placed. And, I am confident, it will be allowed, that there are no funds in Great Britain, of any description whatever, managed to better purpose, and with so little expence, or which, in proportion to their amount, are made to go so great a length, and to be so extensively beneficial.

The kirk-sessions, considering themselves as guardians of the poor, and feeling it to be their duty to contribute what lies in their power, to render their situation as comfortable as possible, act in this business without fee or reward. From their intercourse with the inhabitants of their respective parishes, they are, in general, well acquainted with the situation of every person applying for, or needing relief. And as they can be under no temptation to partiality, the supplies granted are proportioned as exactly as possible to the necessities of the different claimants.

How long this matter may continue on its present footing, it is impossible to say. The

number of the indigent is not diminishing: the price of provisions is on the increase: and although an honest pride, or a spirit of independence, may produce a disinclination to be indebted to public charity for support; yet urgent necessity must finally triumph over these considerations; and even humanity will consider it as a duty to search out and relieve those, whose modesty may endeavour to conceal their extreme want from the public eye. If therefore, the present funds shall cease to be adequate to the real necessities of the poor, in consequence of the public liberality not keeping pace with their increasing number or their increasing necessities, Poor's rates will become unavoidable, the bad effects of which are numerous, and have been severely felt by our sister kingdom. These I will not pretend to enumerate. I shall only observe, that a scheme which teaches men to consider supplies of this kind, not as a charitable contribution, but as a legal provision, and not to receive them as alms, but to demand them as a right, must inevitably increase the number of claimants, by extinguishing that feeling of shame and dishonour, which is usually attached to a state of dependance on public charity, and which hath so strong a tendency to prevent improper applications. A scheme which entirely removes all apprehensions of want, and holds out the prospect of an abundant and indiscriminate supply, must surely be an enemy to industry and frugality, and a powerful encouragement to idleness, dissipation, and intemperance. Tell a man that he has a legal right to support from the parish, when he comes to be in want, and it

will be a matter of indifference to him, whether he lay by the savings of his labour, or throw them away by folly and extravagance. So long as people know that the allowance of public charity must be small, and that, in bestowing it, consideration will be had to their former industry and good conduct, they will be naturally led to labour for their own support as long as possible; and, even after public aid is needed and bestowed, will continue their exertions while they can, that, by the addition of their own earnings, scanty as they may be, their situation may be rendered as easy and comfortable as possible. But give them a legal claim to support, when unfit for labour, and in necessitous circumstances, and one of the most powerful incitements to industry and sober conduct is removed. Extravagance can indulge itself freely, without the dread of beggary; an inclination to idleness can easily frame excuses for a cessation from labour; and inability will often be pretended, where in reality it does not exist.

If ever it shall be found necessary to introduce poors rates into this county, the proprietors will have themselves to blame. At present, the greatest share of the weekly collections comes from the pockets of the farmers, tradesmen, and labourers. Non-residing heritors cannot be supposed to contribute any thing this way; and they seldom give any thing any other way. Of the resident proprietors few can be said to attend the church regularly, and consequently add little to the amount of the public collections. There are still some, however, and, I say it with much pleasure, whose attendance

on public worship is punctual, and whose contributions to the poor are liberal. The latter is, indeed, a natural consequence of the former. Wherever there is true devotion, there will be bowels of compassion to the poor brethren. Prayers, without alms, can never come up as an acceptable memorial before God. If we are not charitable to an indigent brother whom we have seen, how can we love God whom we have not seen? But though nothing, except genuine piety, can give birth to charity, other motives may lead to alms-giving. I conclude this article, therefore, with observing, that if the proprietors, whether resident or not, would contribute for the support of the poor, as much in proportion as the inferior classes, which they certainly ought, and are well able to do, the poor might continue to be decently supplied, on the present plan, and all the evils of a poor's rate completely avoided.

SECT. VI.—LEASES.

THE lands in this county are almost universally occupied under lease. The period of endurance is various: but in general it is 19 years. In some instances leases have been granted for 21, 25, 31, and 38 years: and frequently a lifetime has been added. This addition, however, is now, in most cases, dropped. The term of entry to an arable farm is usually Martinmas, and Whitsunday for a grass-farm. The terms, when the rent is payable, if a grass-farm, are Martinmas and Whitsunday immediately after

entry, in equal proportions; and if an arable farm, Whitsunday and Martinmas, 18 and 21 months after entry. In some instances the first half year's rent is made payable at Candlemas; and of late some proprietors have attempted to make it payable at Martinmas, 12 months after entry. Besides the sum stipulated under the denomination of rent, the tenant is taken bound to pay all public burdens that are payable by the proprietor himself in grain or meal; on which account he either pays less rent, or is allowed a deduction according to the value of the victual.

The covenants in old leases are generally simple, securing the farm-stead and fences to be left in complete repair, or otherwise, according to the state they were in at the tenant's entry,—obliging him to labour and manure the land according to the rules of good husbandry,—to leave a certain proportion in grass the last three years,—to grind his victual at a certain mill, &c.

New leases are, in this respect, much more complex, exhibiting a variety of new covenants, new rotations, and restrictions, which are not always properly adapted to the soil, or climate, or the state of the farm: often embarrassing, and sometimes impracticable, and which therefore not unfrequently terminate in litigation, and the ruin both of farm and farmer.

The following are the clauses most commonly inserted:

1st, The lands are let to the tenant and his heirs only, secluding assignees and subtenants, voluntary or legal.

2*d*, Coal, marle, mines, and minerals, are all generally reserved, with power to the proprietor to work and carry away the same, and the payment of surface-damages to be settled by arbitration.

3*d*, The houses and fences are put in repair, and the tenant is bound to keep and leave them in that state.

4*th*, The tenant is obliged to grind at the the proprietor's mill, or at such mill as the proprietor himself is restricted to by thirlage.

5*th*, Tenants are frequently tied down to a certain rotation of crops, and a particular plan of management, to which they are bound, under severe penalties, to adhere, especially in the last years of the lease, with the express view of preventing them from doing injustice to the land, and injuring the succeeding tenants.

6*th*, Tenants are commonly bound to reside, and to keep a sufficient stock upon their farms, in order to secure the landlord's hypothec.

7*th*, The proprietor reserves liberty to straight marches and roads, and to give and take ground for that purpose; and in case any neighbouring proprietor shall require a mutual fence to be made upon the march, the tenant is to pay 5 l. per cent. for the money laid out by his master upon such fence, and to bear the half of the expence of keeping it in repair, during the currency of his lease.

8*th*, The proprietor reserves power to plant a certain number of acres, but for which the tenant is to have a deduction out of his rent, for the ground so applied: the proprietor is bound sufficiently to fence the plantation.

9th, The tenant is sometimes taken bound to deliver a certain number of fowls, such as hens, chickens; &c. and to perform certain personal services, such as leading coals, &c. if required.

10th, The tenant is obliged to leave the dung upon his farm at his removal.

11th, All disputes between the master and tenant are to be settled by arbitration.

But though these may be the most common, they are not the only clauses introduced. Leases are found to vary and differ from one another without end, in respect both of the nature and of the number of conditions, according to the state and circumstances of farms, and to the different humours of the landlords, as well as the different purposes they may have in view.

As leases are contracts which continue in force for a considerable length of time, and involve the most important consequences, both to the parties themselves, and to the general improvement of the country, too much pains and consideration, in devising and framing them, cannot be employed. Impressed with this idea, I shall venture to suggest a few general hints on such points as I consider most deserving of attention in letting farms.

1st, As the tenant is the person whom the proprietor employs as the actual cultivator of his lands, and on whose industry and honesty he depends for the improvement of his estate, and the regular payment of his rents, he cannot be too careful in making a choice. A man of known profligacy, or even of a suspicious

character, ought never to be encouraged, be his offers what they will. Such a person will be a perpetual thorn in the side of his master, a disgrace to the tenantry, and a constant nuisance to the whole neighbourhood.

Attention ought also to be paid to the circumstances of the incoming tenant. Without a capital, in some degree, adequate to the size and situation of the farm he proposes to take, he cannot be expected to prosper and do well. If he attempts to do justice to his farm, by labour and manure, the expences necessarily incurred by this may disable him for a regular payment of rent. Or, if he endeavours to keep even with his master, the improvement of his farm must stand still; and sequestration and bankruptcy, in a few years, will be the probable consequence. The proprietor, if he has been indulgent, becomes a loser, and the land is, perhaps, in a worse condition than at the commencement of the lease.

In the choice of a tenant, too, the landlord should be satisfied as to his industry and professional abilities. Without these qualifications, his capital, however sufficient, may be soon squandered away, by negligence or misapplication, and the proprietor reduced to the necessity of removing him; a circumstance neither pleasing nor creditable, and of letting his farm again, in a reduced state, perhaps, and consequently in circumstances more unfavourable than before.

2d, The mode of letting farms is also a matter of no small importance, and merits consideration. Sometimes land is let by public roup:

and there are cases where it cannot be regularly let otherwise; when lands, for instance, are under the management of guardians, or a judicial factor, &c. But, in general, though this may be esteemed a fair method, it certainly is not the best plan for either of the parties. Some, from ignorance, or from necessity, or from resentment, may be led to offer more than the land is worth: and let the offerer be what he will, if he can only find means to fulfil the conditions of the roup, he cannot be rejected. The landlord can have no power of selection; and the offer of a few pounds more rent may bring a very bad tenant upon his estate.

The practice most commonly followed, at present, is to roup the farms behind the curtain, by advertising for concealed proposals. Though this plan may put it in the landlord's power to please himself in regard to the tenant's character and circumstances, yet it seems liable to many objections, and has been loudly complained of. The man of character, of substance, and ability, offers such a rent as, in his judgment, will enable him to pay his master regularly, and, at the same time, secure to himself a reasonable return for the stock of money, industry, and skill, which he is able to employ. But he is opposed in the dark by a person of directly opposite character and circumstances, a desperate bankrupt, perhaps, or a speculative adventurer, whose name is intentionally concealed, whilst his offer is not infrequently employed as a handle to draw a higher offer from the other. Thus does the proprietor leave the valuation of his lands to be determined by a competition not of the fairest

kind, whilst he too often follows the judgment of the least competent, because more consonant to his own inclinations. But, in the issue, he often finds sufficient reason to repent of the measure. Besides, giving in written proposals seems to be a tedious and inconvenient plan, especially in the way the matter is usually conducted. Many months generally intervene between the first proposal and the landlord's final answer, which is often withheld till within a very short period before the term of entry. This produces much trouble and disagreeable suspense; and the unsuccessful candidate is often, on this account, subjected to the hardship of losing the opportunity of an advantageous settlement elsewhere.

It would surely be a much more eligible plan, were proprietors to consult their factors, or others, on whose judgment they can safely depend, respecting the state of the farm in point of improvement; the consequent length of lease proper to be given; and the fair value of the lands under good management: and, having done this, to advertise themselves ready to treat with substantial farmers, giving in a system of cropping and management, to which, with the concurrence of the proprietor, they are willing, as far as circumstances will permit, to adhere, mentioning, at the same time, the size and quality of the farm, the time of entry, and such other particulars as it may be judged necessary to communicate. This public notice will procure to the landlord an immediate interview with such as mean to be candidates for the farm. Any explanations, or further information that

may be necessary for the satisfaction of either party, can be more readily obtained by a personal conversation than by the tedious process of a distant correspondence; and, should any difficulties or objections occur on the one side or on the other, they can be instantly stated and soon discussed, and a final agreement, or a final parting, effected without delay.

3d, Another point in leases, which deserves consideration, is the stipulated rent and the terms of payment. An inclination in proprietors to draw the highest possible rent from their estates, though natural, may, nevertheless, be carried to an extreme. To accept indiscriminately of the highest offer, or to screw up even a substantial and industrious farmer to a rent above the real value of the land, must be an imprudent measure, and ultimately hurtful to themselves. Besides discouraging the efforts of industry, by removing the most powerful stimulus to exertion, and checking and retarding the improvement of their lands, they subject themselves to the risk of serious losses from the failure of tenants, or at least to the uneasiness and inconvenience of delay, uncertainty, and irregularity, in the payment of their rents. The claims of justice can never extend beyond the real value of the ground. And a liberal and generous heart will never grudge to sacrifice a few pounds of his rental for the satisfaction of beholding his tenants easy, contented and happy.

If the scheme of fixing the rent in kind, and making it payable in money according to the rate of fiars, proposed under the article respecting rent, shall not meet with general approba-

bation, I am humbly of opinion that rent should be paid in money, and not in kind. And, as every thing in a contract of this nature should be avoided, that may embarrass the operations of the farmer, or lay a foundation for grudging or dissatisfaction, a certain sum of money should be stipulated in full of all demands, with the exception of such victual as the proprietor himself is bound to pay. Carriages, personal services, the payment of schoolmaster's salary, and other public burdens, besides the risk and loss of time they often occasion, are usually considered by tenants as burdens imposed upon them additional to the rent which they ought to pay, and this notion, however unfounded, is often productive of murmur and complaint.

With respect to the terms of payment, though, in general, Whitsunday and Lammas, the one 18 and the other 21 months after the term of entry, are made the terms of payment, there are some instances of leases, in which Martinmas and Whitsunday, the first 12, and the last 18 months, after the entry are made the terms of payment. This plan appears to be rather hard and unreasonable; nor do I see upon what ground it can be insisted upon with propriety. It will be admitted that the rent ought and must be paid by the produce of the land. If the master chuses to have his rent in money rather than in kind, he must allow the tenant a reasonable time to convert the produce into cash. This cannot be accomplished between the conclusion of harvest and the Martinmass immediately following. The necessary work upon the farm during that period, will put it out of his power

to thrash more of his victual than may be barely necessary for the sustenance of his family and servants. If then the rent is to be paid at Martinmas, he must either borrow money for that purpose, which no prudent farmer would wish to do, or he must pay his rent with the money which he meant to expend in furnishing the necessary means of improvement.

Even the payment of the first half year's rent at Candlemass, though not so great a hardship, may, in many cases, be injurious to the tenant, as it may oblige him to dispose of his grain or live-stock at a disadvantage. Supposing this to be the universal condition of leases, all tenants, except such as may be in affluent circumstances, would be obliged to dispose of a large proportion of their grain in the winter months, by which means the markets would be glutted, and the prices brought under their natural level. This inconvenience farmers could avoid, if they had it in their power to delay the sale, or to give a longer day to their merchants. On this account Whitsunday seems to be the properest term for the first payment; and as the farmer must have a considerable portion of his grain to thresh after seed time, he can dispose of this with advantage through the summer months, the price of which, and of the cattle he may have fed through winter, will enable him to complete the payment of the year's rent at Lammas. In short, it seems unreasonable to require a tenant to pay a money-rent earlier than the proprietor himself could have raised it from the produce, had the farm been in his own possession.

4th, The endurance of leases is another point of important consideration. This must be regulated by circumstances, according to which it may be longer or shorter, without injury to the occupant, or to the improvement of the soil. Grass grounds, which are meant by the proprietor to be broken up, with the sole view of destroying the fog, and renewing the pasture grasses, may be let for such a number of years only as shall be sufficient for that purpose, and the tenant bound to a certain rotation of crops, and to lay it down again in grass. But when the farm is meant to be under the plough, and constantly in the hands of the farmer, the duration of the lease ought to be longer. No farm, whatever be its state of cultivation, ought to be let for a shorter period than 19 years. The operations of husbandry are slow: many years may elapse before the farmer can bring his plans to bear, even when no extraordinary improvements are necessary: the period of reimbursement is distant, and his returns, depending on numberless accidents, precarious. Add to these considerations, the damage attending frequent removals, change of situation, and new plans of management which his new farm may require. When these circumstances are attended to, it will appear that 19 years possession is sufficiently short to give him a fair chance of securing the interest of his capital, and the reward of his toils.

But if the farm be in a state of nature, or otherwise in such a condition as to require a tedious and expensive course of improvement, such as draining, levelling, inclosing, cleaning of stones, liming, &c., the endurance of the lease

ought not to be less than 38 years. This subject, however, will fall to be considered, more properly, in a subsequent department of this Report.

5thly, In all leases, a variety of particular restricting and obligatory clauses are to be found, which, though of a subordinate nature, and less essential than the articles above mentioned, do nevertheless involve important consequences to both proprietor and tenant. In framing these clauses, their effects, I suspect, have not, in every case, been sufficiently attended to. Some of them are certainly exceptionable, and ought either to be excluded, or so modified and corrected, as to render them, if not beneficial, at least harmless. Of these I shall beg leave to mention the following.

By a special clause tenants are generally prohibited from assigning or subsetting their farms. This restriction, in a general point of view, may be exceedingly proper. Taking farms, merely with a view to make profit, by subsetting them at an advanced rent, is highly improper, and ought, by all means, to be prevented. Middle-men coming, in this way, between the proprietor and the actual cultivator of the ground, is a curse to any country, being a fruitful source of oppression, and a certain bar to improvement. But though this general point be admitted, I apprehend, to make the rule universal, would, in many particular instances, lead to consequences equally oppressive and unjust. Suppose a man has been in possession of a farm for a number of years, and has expended a great

deal of money in the improvement of it; but, before the expiration of his lease, and before he has been able to indemnify himself, he falls into distress, and becomes unable to manage his own affairs; has no child or heir capable of supplying his place, and no person to take charge of his business, on whose fidelity and ability he can depend. If, in this case, he shall subset his farm to a man of character, against whom the landlord can have no reasonable objection, would it not be hard, not to say cruel, to prevent him? Surely neither the proprietor, nor the interest of the farm, would be injured by such a substitution.

Again, suppose a farmer's oldest son, his heir at law, disliking the employment of his father, engages in another line of business, or, turning out a spendthrift, will engage in no business at all; would it not be cruel to prevent the father from assigning his tack to a second or third son, who is sober and industrious, and has, perhaps, been his father's chief assistant in the management of his farm?

Or, supposing the farmer to leave a widow with an infant family, who must be unfit themselves to manage the farm after his death, and cannot depend on the knowledge, the industry, or fidelity of servants; would it not be cruel in the extreme, to prohibit from subsetting? On the contrary, humanity requires that the ruin of the young family be prevented; and justice says, that they should not be deprived of the fruits of a father's industry, and of the money he has expended on the farm. These clauses, in tacks respecting the seclusion of assignees and

subtenants, ought certainly to be so modified as to obviate such hardships, and, in a consistency with the landlord's rights, and the general interest of agriculture, to secure completely the fruits of the parent's stock and industry to his surviving family.

In some leases, a certain rotation of crops, and a particular plan of management, is laid down, to which the tenant is bound, under a specified penalty, to adhere. The propriety of such a clause must depend on circumstances; and it is believed that there are few cases in which it is not liable to objections. Systems of management, devised by mere theorists, unacquainted with practical husbandry, or at least strangers to the nature of the ground for which they are designed, may be found by the farmer to be very erroneous and defective in practice. In leases of farms, which are yet in a state of nature, or which, as yet, have received little improvement, such a clause is wholly inadmissible, as the proper rotation cannot be rightly ascertained till trial and experience shall point it out. The seasons, too, and other accidents, may, in many instances, oblige the farmer to deviate occasionally from the prescribed plan; and yet he cannot yield to this necessity, without risking the penalty fixed in his lease. Land may bear a particular course of cropping for a while, and yet tire of it at last, in which case a change may be necessary for the benefit of the land as well as of the tenant. In short, this plan seems to me to lay a dangerous embargo upon improvement. Suppose all the land in the kingdom to be just now let for a period of 19 years,

and the clause in question introduced into every lease, then, during all that time, there could be no room for experiment or discovery, for the practical application of improved skill, or the introduction of more perfect systems of husbandry. The hands of the farmer are tied up, and he must move on in his present shackles to the end of his lease. Wise proprietors will, therefore, be cautious how they introduce conditions of this kind. Restrictions respecting cropping and management ought to be general, and rather of a negative kind, restraining the tenant from what is palpably wrong; but at the same time, leaving a clear opening for the exertions of genius, of enterprize, and of progressive knowledge. To take measures for preventing the deterioration of the ground towards the end of the lease, to which tenants may be tempted by a principle, the force of which every man more or less feels, is certainly proper and necessary. But it is surely best to refer the management to their own judgment during the preceding period. In this age of growing industry and knowledge, tenants, in general, are sufficiently attentive to their own interest, and sufficiently intelligent not greatly to mistake the means of securing it; and therefore there is little danger of gross mismanagement, for it is impossible for the occupant to injure his farm without hurting himself.

It may be proper to observe, likewise, that every prestation agreed to by the proprietor at the original bargain, ought to be distinctly mentioned in the lease, unless it be fulfilled before the lease be extended, and nothing left to verbal

promises on either side. The neglect of this has often occasioned misunderstandings and disagreeable litigations. An example of this I have in my eye. A tenant subscribed a tack, in which the houses and fences were declared to be in a state of sufficient repair, though in fact they were not; the tenant, trusting to the proprietor's promise, or that of his factor, that they should be put into that condition in due time. But, upon the tenant's applying for the fulfilment of this promise, the words of the lease were appealed to, and the promise forgotten. A lawsuit was the consequence; and the proprietor was justly decerned in the repairs; but the tenant was exposed to all the inconvenience of delay, and brought to considerable trouble and expence.

In leases no clauses ought to be introduced which may eventually subject the tenant to damages, the extent of which cannot be calculated when the bargain is made, without stipulating a compensation adequate to the injury that may be done. Examples of this are not wanting, and have given rise to much altercation and dispute between the parties. In some tacks, where the proprietor reserves the liberty of searching for minerals, whilst surface-damages are allowed, the payment of these damages is made to cease, when the workings are given up. In which case it may happen that such trials shall, in the course of two or three years, damage several acres of the best land, perhaps, in the farm, and render them totally unproductive during the residue of the lease; and consequently the tenant be obliged to pay rent, during many years, for land of which he gets no use. It is surely

equitable, that the allowance should be commensurate with the duration, as well as the extent, of the damages done.

In some instances, proprietors have proposed a clause to this effect, that in case the tenant shall, at any time, be one term's payment in arrear, when the next term's rent falls due, the lease shall, in that event, be at an end, and the tenant shall have no power to purge the irritancy, but be obliged to remove without any process whatever. This is a very dangerous clause, especially when combined with an early payment of rent, and, in many instances, may prove ruinous to an honest industrious farmer; as sickness, the loss of cattle, or a bad crop, may occasionally prevent a punctual fulfilment of the obligation. In such circumstances, it may be said, he has it in his power to prevent the mischief, by borrowing from some of his more wealthy neighbours. But to whom can he so naturally look for indulgence and relief, in times of distress, as to the master for whom he labours, and who shares the profits of his industry.

In some late leases, tenants are prohibited from sowing above 10 pecks of lintseed in any one year, from an apprehension that the culture of flax is injurious to the land. How far this apprehension is well founded, will be considered afterwards; in the mean time, it appears extraordinary that the Board of Trustees for the encouragement of Manufacturers, &c. should have so long held out premiums for the culture of a plant, which is found to be so injurious to the soil. These gentlemen, many of whom are not behind the advisers of this restriction, either in the

knowledge of agriculture, or in zeal for its interests, are certainly not of this opinion, otherwise they would not continue to encourage the practice.

As it is believed there is both lime-stone and marle in many farms, which have not as yet been discovered; and as these are such valuable articles of manure, it might be proper to insert a clause in leases, encouraging tenants to make diligent search for them, by allowing them, if successful, the privilege of a certain quantity for their own farms. When this encouragement is withheld, especially when applied for by the tenants, they will be at no pains to make discoveries, or, if they should make accidental discoveries, piqued at the refusal, they will be apt to keep them concealed from the proprietor.

When an unimproved farm is let, it often happens that the houses, though in good repair, and sufficient for every present purpose, shall, in a few years, from the increase of the farmer's stock of cattle and grain, in consequence of his improvements, become wholly inadequate. Provision should, therefore, be made in the lease for this change of circumstances. As houses may be considered as a permanent improvement, proprietors should bind themselves to build what may be really necessary, and tenants to pay the interest of the money thus expended at the rate of 5l. per cent. This would be no disadvantage to the landlord, whilst the tenant would be prevented from diverting his capital from its proper use, the improvement of his farm. Or, if this shall not be thought pro-

per, let the farm-steads be valued at the commencement and termination of the lease, and the difference of value, at the tenant's removal, be paid, if they are worth less, by the tenant to his master, but if worth more, by the master to his tenant.

In some leases clauses have been inserted, which are not only absurd, but truly prejudicial to both landlord and tenant. A striking instance of this can be given. Through and along the farm to which I allude, a considerable water flows, which is capable of being applied, within the bounds of the farm, to many useful purposes, both in husbandry and manufactures. But the proprietor has reserved no power in the tack, to apply this water to any other purpose than working coal: and the tenant is strictly prohibited from making any alteration whatever upon the present course of the water, or any part or portion thereof, for any cause or occasion whatever. And therefore, should the landlord find it for his interest to use the water for a bleachfield, or for spinning machinery, he cannot accomplish this, without express liberty from the tenant. And, on the other hand, should the tenant incline to erect a threshing machine, or to apply the water for any other useful purpose upon his farm, he cannot, without liberty from the landlord. So that, without a new bargain, this water cannot be used, during a long lease, for any other purpose than turning coal-engines. When the tack was framed, the slightest consideration, one would think, might have discovered the impropriety of such restrictions; and a very

small portion of judgment might have so adjusted the matter, as to have enabled both proprietor and tenant to enjoy the benefit of the water for any of the above-mentioned purposes, without any material interference.

The farm just now alluded to has a northern exposure, and is destitute of shelter. On this account it might have been expected, that all proper encouragement would have been given for planting. But this is far from being the case. The tenant, indeed, is allowed to plant wood for the use of the farm, but not to sell, nor to cut for any other purpose; neither is he allowed the value at the end of his lease. The consequence is, that none is planted, and probably none will be planted, during the present lease. So that this large farm of near 400 acres, must be deprived of an improvement, equally beneficial and ornamental, for 25 years to come.

In a county so naked and destitute of planting as Fife, this species of improvement should, by all means, be encouraged. And, therefore, on all grounds where it is needed, the tenant should have liberty to plant to a certain extent, and upon a fixed plan, and be paid for the trees at the end of the lease, according to their value, to be estimated by neutral men, mutually chosen.

I shall conclude my observations on the subject of leases, with offering my opinion respecting the state in which the outgoing tenant should be obliged to leave his farm. It has been already observed, that, though he may safely be allowed to follow his own judgment, during

the whole period of his lease, till within a few years of its conclusion, to prevent injury to the farm and succeeding tenant, he should then be restricted to a certain mode of management. In doing this, I apprehend, particular attention should be paid to the operations of the last year. Accordingly, it is submitted, whether it might not be proper to introduce a clause to this effect, That the tenant shall lay down a field, properly prepared and manured, with clover and rye-grass,—that he shall reserve another field for summer-fallow; and, if he has been in use to sow turnip, that he shall reserve a field also for this purpose; all which fields shall be of a size corresponding to the extent of the farm. That he shall carry on the operation of fallowing, through summer, in a proper manner, and that he shall prepare and manure the field for turnip, sow them, dress them, and take due care of them. That when he leaves the farm, he shall deliver his whole crop of grain, hay, turnip, potatoes, together with the whole dung collected during summer and harvest, to the proprietor, for all which, and for the expence of fallowing, and the value of the grass-seeds, he shall be paid a fair price, according to a valuation put upon them by neutral men, mutually chosen.

From such a plan the greatest benefit would result, both to the outgoing and incoming tenant, as well as to the farm itself. The present tenant would be under no temptation to slacken his industry. His horses and servants can be fully employed, and to the best advantage. Nay, he has the strongest possible inducement

to persevere in his activity and attention to the business of the farm to the very last, because he knows that he must be completely reimbursed at the end. Besides, by disposing of his crop in this manner, he is neither subjected to the inconvenience of conveying it to his new possession, which may be at a considerable distance, nor obliged to sell it by public roup, and thereby expose himself to the risk of bad payment, or a distant day. The incoming tenant is no less benefited by this scheme. He is not under the necessity of bringing from a distance fodder for his cattle, and provisions for his family. He is not subjected to the hardship of having no grass for cutting, or for hay, during a year and a half to come; and no turnip for his cattle, for a year. Receiving his new farm in the same state, and upon the same terms, as his master was obliged to receive it from his predecessor, he sits down upon it with every possible advantage, having every thing necessary, and in the same forward state, as if he had been for several years in possession. The improvement of the land, at the same time, suffers no interruption or suspense, but goes on in the same way as if no succession of tenants had taken place. In short, this plan will be equally advantageous to the landlord, as it will not fail to bring him a good tenant, and the highest possible rent for his ground.

CHAPTER VI.

Implements of Husbandry.

FORMERLY the implements of husbandry were few, simple, and rudely constructed. But of late, from the progress of agricultural science, the superior and more diffusive knowledge of mechanical arts, and a growing taste for neatness and elegance, their number has greatly increased, and they have received much improvement in the mode of construction and excellence of workmanship. As it was the principal design, so it has been the happy effect, of these additions and improvements, to facilitate, expedite, and render more perfect, the various necessary operations of husbandry. In mentioning these implements, we need not take up time with a very particular and minute description of them, as they are, in general, the same here as in the neighbouring counties, and have been distinctly described in other agricultural surveys.

The old Scots plough is now almost entirely gone into disuse, and its place supplied by a small light plough, usually with an iron head and a cast mettle mould-broad, constructed on

such principles as to require less power to draw it, and to perform the work with greater exactness and perfection. Few ploughs, constructed entirely according to the form of Mr Small's, are used in this counry. They are thought not to answer well, and therefore not in general estimation. This, however, may be owing, not to any defect in the form of the plough, when properly made, but to the want of skill in our mechanics, who may not be able to execute the work with sufficient exactness.

The plough most commonly in use has no chain; the sheath is of wood, and without curvature; and the mould-board, instead of being hollow, is round. The beam, though sufficiently low behind, is formed with such a curvature as to bring the bridle down to the proper line of draught, and is frequently strengthened with a plate of iron planted on each side, and extending the whole length; or, in place of these, with a plate of iron on the lower side. The part where the coulter passes through it, is fortified with a piece of iron above and below. But a great part of this iron work is unnecessary, as the beam seldom gives way, except at the coulter or sheath; and therefore, if properly secured at these points, there will be little danger of failure.

The hollow mould-board is certainly best for opening up stiff ground, and for ploughing ley, strong clay, or such land as admits of a clean furrow. But when the mould is loose, wet, and apt to fasten to the plough, the round mould-board seems to be preferable, as it clears

itself more easily of the earth, and makes the furrow neater.

The harrow is another implement indispensibly necessary in husbandry. It is commonly four feet square, and consists of four bulls, with four slots passing through them at right angles; and both the bulls and slots at equal distances from one another. Each harrow has 20 iron teeth, or tynes, as they are usually termed, five in each bull; the whole weighing about 72 English pounds.

I do not know that any remarkable improvement has been made upon this instrument in this county, though it certainly is very capable of it, particularly in the arrangement of the tynes, with a view to produce as many separate ruts at once as possible.

Each harrow is drawn by one horse; and generally two, sometimes three horses are yoked a-breast. The power is applied to one of the corners of the harrow, to give a greater breadth to the stroke, and to increase the number of ruts.

There is a heavy harrow, called a break, which is used for breaking stiff land, and loosening and tearing up grass roots and quick weeds. The construction of this is much the same with that of the common harrow, only much larger and heavier, and furnished with a greater number of teeth. Sometimes it consists of two parts, which move on iron joints: constructed in this manner, the whole harrow will be able to touch the ground, and no part of it pass without doing execution. In some cases, however, I should think the other kind preferable. In land

that is uneven, and starts up into hard, lumpy, and tough points or eminences, the jointed harrow can bear upon these with only half its weight at a time; but when the other is drawn right across them, they have to sustain the weight of the whole harrow, and consequently will more readily give way. To answer every purpose for which the break-harrow is necessary, and at the same time, to save the expence of having more than one; the jointed kind may be made to act occasionally as if it were all one piece, by the application of one or two strong cross bars, so fitted as to be conveniently put on and removed, as circumstances may require.

There is also a small light harrow used by many of the farmers for covering grass seeds. This is very proper, especially when the grasses are sown among young springing grain of any kind, as there is no danger of its tearing up the young plants, which the larger harrow often does.

Rollers are much used, and now considered as necessary implements in husbandry. They are either of stone, or cast iron, or wood, from five feet to five feet and a half long, and of different diameters and weight, according to the materials of which they are formed, and the purposes they are meant to serve. They are sometimes made to consist of two pieces; and, if made of wood, the pieces bound, each at both ends, with hoops of iron, and moveable independently of one another.

As different kinds of ground, and the different purposes of rolling, may require rollers of different weight, it might be proper to make the

roller light, but with a box on the frame or carriage, into which stones or any other heavy substance may be put occasionally. In this way the weight could be increased or diminished at pleasure, and the same roller be made to answer in all cases.

The usual purposes to which the roller is applied, are smoothing grass lands, or giving them more solidity when loose and open, and breaking the clods of rough land under tillage. It is likewise applied to land newly sown with flax or grass seeds, or turnip ; and when young wheat is harrowed in the spring, a practice which is sometimes followed, this operation is usually succeeded by rolling. There are some kinds of land that have a natural tendency to heave and swell, soon after the grain is sown, by which the tender plants are in danger of being torn up by the roots and destroyed. Frequent ploughing may reduce and consolidate this kind of soil, but where this remedy has not been used, nothing except the application of a heavy roller can save the crop.

Instruments for drilling and hoeing are numerous, and of various construction. The drill barrow, for sowing turnips and other small seeds, is simple and of easy management. One kind requires only one man, and another two, to manage it. Some years ago a kind of drill machine for turnip was in use, which was drawn by a horse, run upon two wheels which turned the seed box, had a share for making the rut or furrow, and dragged a small harrow behind for covering the seed. But this is now less common.

ly used, and has given way to others more simple, and equally answerable.

Besides the hand-hoe, there are two kinds for horse-hoeing; one for the purpose of laying away the earth from potatoes, turnip, or drilled beans, which is made quite close on the left side, to prevent the earth from falling upon, and covering up the young plants; but is otherwise mounted like a common plough, only of a smaller size. The other, designed to lay back the earth to the plants, is usually furnished with a mould-board on each side, moveable on joints at the sheath, which consequently can be more or less spread out, and fixed at any width, which the distance of the drill rows may require. It has sometimes two socks or shares, one like that of the common plough, and another broad, obtuse pointed, and of a sharp edge, designed to cut the weeds, clean the bottom of the furrow, and to raise up more earth to be laid to the rows.

The *Reaping Hook* needs scarcely to be taken notice of. This instrument continues much the same that it has been for time immemorial, and probably is incapable of any material improvement. In some places, and on particular occasions, when reapers have been scarce, cutting grain with the scythe has been practised. But as a sufficient supply of hands can generally be procured in this populous county, this mode of reaping has not become an object of consideration, nor is it constantly followed by any one.

Wheel-Carriages have undergone the same improvements, and are brought to the same perfection, in this, as in other counties. These used in husbandry are chiefly of two kinds, the close

cart, and the corn cart. The former is of greater or less dimensions and strength, according as it is to be drawn by one or two horses. Axles of iron are much used, both from a principle of economy, and from their contributing to the easiness of the draught. The bodies are made to turn over, when unloading, independent of the shafts, to which they are connected by an iron rod a little before the axle. Their sides are strengthened and supported by iron stays both on the fore and hinder part, and, when resting on the shafts, they are secured by iron locks before. Of late they are made broader in the bottom, projecting some inches over the naves, by which means their capacity is enlarged, and the side standards, being more perpendicular, are less apt to be strained by the weight of the load. Sometimes a frame is made to fix occasionally on the close bodied cart for the purpose of carrying hay or corn in the straw. Farmers, however, have generally carts constructed solely for this purpose. These are open bodied, much longer, and with a wide projection above, so as to admit a load of hay to the extent of a ton weight. Sometimes they are so constructed, that the body can be removed from the shafts, and, by fixing bars on the sides and ends with iron bolts, they can be easily fitted for the purpose of carrying wood; and were they made close in the bottom, they would be equally convenient for the carriage of stones.

Single Horse Carts are coming much into use, upon this just principle, that two single horse carts will carry more than one double cart, with less strain to the carts, less damage to the roads,

and greater ease to the horses, which, in a double cart, without great attention in the driver, can scarcely ever be made to draw equally : and one man can easily manage two carts of this kind. It is to be observed, however, that if single horse carts are employed in carrying hay or corn in the straw, each cart should have a driver, especially where the roads are not very good, as such high and bulky carriages are more easily overturned.

Fanners, for cleaning grain, have been used in this county for many years. This is surely a great acquisition to husbandry. Formerly the farmer was subjected to all the inconvenience of delay in calm weather ; and when there was a sufficiency of wind, he was obliged either to carry his corn to the fields, or wait till it should blow directly into his barn-door ; which often occasioned much loss of time, much extraordinary labour, and much waste of grain. And the same or greater inconveniences were felt at the mills. But now, by the use of fanners, all these hardships are removed. This machine is of various construction, and of various powers. Some are made only to separate the chaff and light grain, and others perform the business of riddling and sifting also. They cost from 2l. to 3l. or 4l., according to the workmanship and complication of the machinery ; and, if properly taken care of, will last many years.

Thrashing Mills, a late, but most important invention, are now very common in Fife, and their number is encreasing every year. In almost every parish they have been erected, and in several single parishes not less than 7 or 8.

are to be seen. In the whole county, the number may probably be nearly 300. They are of different constructions, and various powers : and since they were first introduced, have received very considerable and material improvements. Some are moved by water, when a convenient stream can be had ; but the greatest number are wrought by horses. I know of none that do not require at least two horses. Some require four, and some six. They thrash from two to twelve bolls in the hour ; and many of them, by connecting fanners and other pieces of machinery with the principal movement, are made not only to thrash, but also to clean, to riddle, and to sift at the same time.

Of the many excellent and effective machines of this kind to be found in the county, the one erected, some years ago, at Kilry, in the parish of Kinghorn, was reckoned, at the time of its erection, one of the most complete. It is moved by water, and is said to thrash and clean 12 bolls in the hour. Many people in the neighbourhood carry their grain to be thrashed there, which they get done for sixpence per boll. Combined with this, there is a corn mill, a barley mill, and a hoisting tackle, all moved by the same water wheel.

Since that period, a great many other thrashing mills of equal, and some of superior powers, have been erected in this county. There is a very powerful one at Pusk in the parish of Leuchars, which was erected by Mr Buchan the late tenant. And Mr Cheap of Rossie has erected one lately, which, in respect of the excellence of materials and workmanship, the convenience

of the several arrangements connected with it, the extent of its powers, and completeness of execution, is equal, perhaps superior, to any in Fife.

The advantages of this invention to husbandry are great. It separates the grain from the straw more completely than flails can do. It performs the work in a shorter time; and requires fewer hands upon the whole. By thrashing wet grain quickly and completely, it saves it from being lost in wet harvests, when the crop cannot be got easily and properly dried. In short, the same hands, that would otherwise be necessary on the farm, will be able, with this instrument, to accomplish the business of thrashing without much perceptible loss of time, as they can always in an hour in the morning, before they go out to the plough, or other work without doors, thrash as much as will serve the bestial for one or perhaps two days.

In a few instances, indeed, I have heard complaints that this machine, though erected at great expence, and judged to be sufficiently executed, did not thrash clean. But this must be owing, not to any defect in the principle, but to some inaccuracy in the construction and adjustment of the machinery: a circumstance not to be wondered at, in a work so new and so complicated. It may be expected, however, that, by a course of trials, every defect will be discovered and corrected, and by the improved skill and dexterity which the mechanic will derive from practice, the machine will be brought to such perfection as to remove every complaint.

CHAPTER VI.

Inclosing,—Fences,—Gates.

INCLOSING land is allowed to be an improvement in agriculture of great importance and utility. Few counties need this improvement more than Fife, and there are few, perhaps, where it is so far behind. At first view, one would imagine that a very considerable portion is inclosed: but when more closely examined, many of the fences are found to be so imperfectly executed, or so totally neglected, as not to deserve the name. In some cases the fences consist of ditches without thorns; and in others, of thorns unprotected either by stone dikes, or by palings of wood, so that cattle can walk out and in at pleasure. The hedges are often choaked with grass, stunted, and full of gaps; and the ditches grown up with weeds and rushes; so that they are equally unfit for confining cattle, or for draining the ground.

So far as can be judged, one third part of the county may be considered as completely and substantially inclosed: the rest continues partly open, and partly fenced in the slovenly and incomplete manner just now described. It is matter of satisfaction, however, that though we may be considered as far behind many others in this useful and necessary piece of improvement,

the advantages are now seen and acknowledged; and the spirit of inclosing, hitherto so feeble, and so limited, is now beginning to operate with rapidity and effect.

Wherever inclosing has taken place, the beneficial consequences have been evidently great. The soil has been warmed and meliorated by the shelter which the fences afford, and by the aid, which the ditches give, in draining off the superfluous moisture. If under the plough, the crops are more luxuriant, and the quality of the grain superior. If in pasture, the cattle, feeding at ease and under shelter, thrive much better, than when exposed to the storm in the open fields, or hunted and driven about by the dog of a capricious keeper. The value of land being thus enhanced, a corresponding rise of rent has been the consequence.

It must be confessed, indeed, that the extraordinary increase of rent which land has brought for some years past, must, in part, be attributed to the general prosperity of the country, in respect to trade and manufactures, as well as to the improved state of agriculture. For it will be found, that good openfield land, or land imperfectly inclosed, and treated or laboured as openfield, has advanced nearly in the same proportion. But though this be true, it cannot be denied, that the effect of inclosing, in promoting this rise of rent, has been considerable; especially where the land is naturally cold and wet, and consequently incapable of much improvement whilst in an open, unsheltered state.

The size and form of inclosures cannot be subjected to any general rule. These must

vary according to the size of farms, and to the nature and situation of the ground. In general, inclosures contain from ten to twenty-five or thirty acres. The fences, too, are of various kinds, of which the following are the most usual and common.

1st, *Strong high walls*, built with stone and lime. These are chiefly used in fencing parks and inclosures around the seats of the nobility and gentry; and many of them are very old, and still very sufficient. Several fences of the same kind, though not of equal height and thickness, have been built of late in such places as are in the immediate neighbourhood of lime, and have easy access to stones.

2dly, *Dry stone-dikes*, of four feet and a half high, sometimes covered with turf, and sometimes with large stones, projecting a few inches on either side. The expence of building the rood of 24 yards in length, is about 20 s., inclusive of quarrying, carriage, and building. This, however, must admit of variety, according to the distance of the quarry and the difficulty of working it. The duration of this kind of fence depends upon due attention being paid to the founding as well as the building. The dike should be founded so far below the surface, as to be beyond the reach of the frost; the stones must be skilfully laid; and thorough-bands, or large long stones passing quite through the dike, ought to be placed at proper heights and distances, to keep the whole fast together. If these circumstances are sufficiently attended to, walls of this kind form very strong and permanent fences.

3d, *Galloway-dikes* are used in several parts of this county, especially where the ground is high and cold, the soil not proper for rearing thorn-hedges, or where sheep are kept, and consequently thorns cannot thrive. This fence consists of a double dike two feet thick, and twenty, or twenty-four inches high, over which is laid a single course of large flat stones, projecting five or six inches on either side, upon which a single dike of big round stones is reared, gradually diminishing in size, and terminating in a narrow top, about five feet from the ground. This is esteemed an excellent kind of fence, as it requires fewer stones; is built at less expence; stands well, as no creature almost will attempt it; and if any part of it should give way, it is easily repaired.

4th, *Ditch and hedge* is perhaps the most common mode of fencing in this county; and, as it unites draining, shelter, beauty, cheapness, and the most complete security, seems to approach nearest to perfection. The ditch is made five feet wide at the top, three feet deep, and one, or one and a half foot wide at the bottom. The turf, taken from the place intended for the ditch, is laid along with the green side down, at the distance of eight or ten inches from the edge of the ditch. Upon these the young thorns are laid at the distance of five or six inches from one another pointing towards the ditch, and some of the finest of the mould laid next them, upon which the rest of the earth taken from the ditch is thrown. And, in order to protect the thorns, and to form a complete fence at once, sometimes a paling of wood, and sometimes a coping of

stones, is placed close behind the new planted hedge. The last is by far the preferable method. This stone-coping is usually about two and a half, or three feet high, covered and secured at the top with a course of pretty large stones set edge ways, and projecting a little. This dike is built close behind the hedge, upon the earth thrown from the ditch; and, in order to prevent it from swaying or falling down, the earth ought to be levelled and made equally solid and firm.

In raising thorn hedges, the quickness of their growth, and the future perfection of the fence, depend very much upon adapting the mode of planting them to the nature of the soil. Where the ground is wet, and a ditch necessary, not only to form a part of the fence, but also to assist as a drain to carry off superfluous water, laying the thorns some inches above the surface of the ground, in the manner just now mentioned, seems to be proper and necessary; because, if planted in or below the surface, the too great quantity of moisture would check their growth, and perhaps destroy them altogether. But if the ground be very dry, and the soil light and gravelly, planting them below the surface seems equally necessary to secure them a sufficiency of moisture for promoting their growth.

In this case, let a ditch be made and coping built, as above described, only the coping next the ditch. Along the inner side of the dike, let the ground be dressed with a spade, and level with the surface, to the breadth of two feet from the coping; and if a little dung can be spared to it, so much the better. Then let the

thorns be planted ten or twelve inches from the wall, and at the distance of five or six inches from each other, sloping along the line of the hedge, and forming an angle of 45° with the surface of the ground. This mode of planting is performed with great expedition. One man opens the ground with a spade edge-wise along the line, and another lays the sets in the opening, at the proper distance, and in the proper position. Sloping the plants in this manner is very material, as it contributes much to the thickness of the hedge at the bottom. In the part of the plant which stands above ground, there are usually several eyes, from which the young shoots spring. These shoots will rise perpendicular, by which means the whole space will be filled with a great number of stems parallel to one another and at proper distances, which will push out lateral branches, and, consequently, if thriving and properly taken care of, will form a close strong hedge in a very few years. This method I myself have seen practised repeatedly, and with complete success, with this only difference, that the earth thrown from the ditch was faced and covered at the top with the green turf, to supply the place of a stone-coping.

Besides the different kinds of fences just now mentioned, there are some others, though less in use, to be found in the county. The *double ditch and hedge*, with a row of trees planted in the middle, has been tried, but does not seem to meet with general approbation. I should imagine, however, that a very strong and durable fence might be constructed in this manner; and

might be very proper on the sides of roads, especially where the adjacent fields may require open drains to carry off the water.

There are some instances of the double ditch and hedge, but at a greater distance from each other, with belts of planting between. In cases of this kind, we sometimes find the Galloway-dikes, or the double stone-dike formerly mentioned, used, instead of the ditch and hedge. This mode of enclosing is surely extremely proper, where the land is high, cold, and exposed; and it is to be regretted that it has been so seldom practised in a county that needs this kind of shelter so much as Fife.

Beech-hedges have been greatly and justly recommended; and we meet with some excellent fences of this kind, about gentlemen's seats; but they are no where used for enclosing common fields.

In training thorn-hedges, the usual practice is, to keep them as clean about the roots as possible for the first three or four years, or longer, if their growth shall be slow. Once a-year, at least, all the weeds and grass roots are pulled, and the earth stirred and dressed. Perhaps this operation should be performed twice a-year, about the beginning or middle of June, and again in the month of October. After two or three years growth, if the thorns shall appear thin at bottom, and disposed to run up into bare stems with few lateral branches, they are usually cut over six or eight inches from the ground. This produces a great number of new strong shoots close to the bottom, and the loss of time is more

than compensated by the consequent thickness and strength of the fence.

The hedges, inclosing gentlemen's pleasure-grounds, and other fields in their own possession, are regularly dressed and kept in good order. But this attention is not general. In many instances it is the practice, with a view to save expences, to allow the thorns to run up unpruned for many years; and then, to save the hedge from ruin, to cut it over a little above the ground; and the tops are employed to form a temporary fence somewhere else, or placed as a dead hedge behind new planted thorns, to save the expence of a stone-coping. And this plan, when executed regularly and judiciously, does not seem liable to much objection, especially in cases where pasture forms a part of the farmer's course. When the matter is so regulated that the hedge shall be in its unpruned state, when the land is in grass, and cut, when the land is in tillage, this double advantage is gained: the cattle, when feeding, are completely sheltered; and the growing corns not liable to be injured by vermin, or by the want of air.

GATES.

THE gates, in general, which are to be found on the farms in this county, possess few qualities that can recommend them to notice. Most of them are formed of indifferent materials, and coarsely put together. Some of them consist of a frame, made with the bars either horizontal or upright, hanging between two upright posts,

turning on the one, and closing upon the other, and furnished with different contrivances to fasten or lock them. Sometimes they consist of four or five bars, which are made to slide backward and forward, through openings in the upright posts, or which are hung and fastened to the posts with iron chains. The gates, however, about the mansion-houses of the principal proprietors, are generally of the best materials, and of superior workmanship. To describe the various kinds would be tedious, as well as unnecessary, as they are to be found in all the variety of structure and elegance, which fancy or mechanical ingenuity has been able to devise.

CHAPTER VII.

Arable Lands.

SECTION I.

TILLAGE.

WHETHER there is more land in this county actually under the plough at present, than there was 60 or 80 years ago, may admit of some doubt. But that the importance of tillage, and its proper application to the various purposes of husbandry, are now more generally and more perfectly understood, and the practical part performed with greater skill and dexterity, will not bear a dispute. Many of our ploughmen execute, in a very complete and masterly manner, forming and keeping the ridges perfectly straight, and of equal breadth from end to end; and adapting with judgment, the breadth, depth, and inclination of the furrow, to the purposes both of neatness and of utility. To this improvement, the frequent ploughing-matches that have been encouraged in different parts of the county, and the premiums distributed upon these occasions, have not a little contributed.

It must be owned, however, that a great many instances occur, where tilling is still performed in a very slovenly and injudicious manner; no regard being paid to the size, straight-

ness, direction, or equality of breadth, in the ridges, and the ground often scratched, rather than ploughed. The great object of husbandry is to encrease the quantity, and to improve the quality, of the produce of the soil; and the chief art of husbandry is to reach that object, with the least expence, in the shortest time, and with the greatest possible effect. Nothing, I apprehend, will contribute more effectually to this, than a proper disposition of the ground, and a judicious use of the plough. Without these, even manure, however good in quality, or however liberally bestowed, will not avail. When land is designed for cropping, or to be laid down for pasture, the ridges ought to be straighted, reduced to an equal breadth from end to end, and, as far as soil and situation will allow, to be completely levelled. When ridges are crooked, the water cannot easily run off. Inequality of breadth will occasion many unnecessary turnings of the plough, and consequently much loss of time. And when the middle of the ridge is much elevated, the sides may be too much bared of soil, and thereby rendered less productive. If the field lies on a gentle declivity, the direction of the ridges ought to be right up and down. But if the declivity be very steep, the direction should be neither right across, nor directly up and down, but slanting or oblique. This method will render the ploughing more easy and expeditious, and, at the same time, prevent the soil from being carried too rapidly downwards, either by the plough or by water. It has been recommended by some, to lay the ridges in a direction from east to west, because

when lying north and south, the side of the ridge towards the east is always less productive. But this must be regulated by circumstances. To give the ridge such a direction as will most easily and most readily carry off the redundant moisture, must be a first object; and therefore, if the direction recommended can be effected consistently with this, it may be followed: but if it cannot, then it must give way to the other, which is of greater importance. Even on land that is tolerably dry, I should suppose a direction east and west to be necessary, only when the ridges have a considerable rise in the middle: for if the ground be level, or nearly so, the easterly winds will bear equally upon every part of the ridge, whatever its direction may be.

The proper breadth of ridges must depend upon circumstances. If the ground be quite dry, they may be of almost any breadth, without affecting the crop. In this case, liberty is given to attend at once to neatness and economy. I should think seven yards the most convenient breadth with a view to both these objects. Ridges of this size can be sown with two casts, covered by three harrows at twice, and are most convenient for four reapers in harvest.

But if the soil be heavy and wettish, and with such a declination as to permit the water easily to pass off, I should be of opinion that $3\frac{1}{2}$ yards would be the most proper breadth. In this way the soil can be kept nearly at an uniform thickness, and thereby all unevenness in the strength of the crop prevented. The increased number of furrows, acting like so many distinct open

drains, will contribute greatly to dry the ground. These ridges, as well as those on the dry ground before mentioned, ought to be cloven every time they are tilled. And, in this last case, particular care should be taken to prevent any hollow along the middle of the ridge. For this purpose, let the two furrows that are to form the crown of the ridge be first tilled; and, in tilling the second of these, let the right hand horse go in the first made furrow: this will bring them close together, and raise them to a proper height. But if it shall happen that this heavy damp land has little declivity for carrying off the surface-water, it may be necessary, in order to make and keep it dry, to give the ridges a greater breadth, that thereby an opportunity may be afforded for deepening the interjacent furrows, and raising the ridges by an accumulation of soil. In this case seven yards may be a competent breadth: and in ploughing such ridges, they ought to be cloven the first year, gathered the second, and cast the next two years in succession. The reason for casting them two years in succession is, that by the operation of casting, two ridges are always brought nearer, and two more widely separated alternately over the field. By casting again, the succeeding year, the soil is brought back to its proper place. When ridges are gathered or cast the second time, the land is in the most convenient state to be sown out for hay or pasture.

SECT. II.—FALLOWING.

DURING the existence of the old system of husbandry, which seems to have been much the same all over Scotland, the practice of fallowing was unknown. That part of the farm which lay at the greatest distance from the farm-stead, and, therefore, called the *out-field*, was usually thrown into a certain number of divisions, called *breaks*, and tathed in succession by the cattle folded upon them. From each of these breaks, four, and sometimes five crops of indifferent oats were taken, and then the land laid out for pasture, without sown grass, and in very bad condition. In this state it remained, till its turn for tathing again came round.

In-field, or croft-land, was usually divided into four parts, and kept constantly in crop, by the stable and byre dung. The course generally followed was ; 1st, bear with dung, and then three crops of oats ; or, if pease were sown, 1st, pease with dung ; 2d, bear ; 3d and 4th, oats : Or, 1st, bear with dung ; 2d, oats ; 3d, pease or beans ; 4th, oats. By such a course, it is obvious that the land must have been much injured, and scanty crops produced. All kinds of weeds being allowed to grow and shed their seeds, without any method being taken to destroy them, the ground, of necessity, became foul. The weeds, drawing to themselves the strength of the manure, became more abundant and luxuriant, whilst the grain, starved by the want of its proper nourishment, and unable to

cope with its more powerful enemies, often pinned away and perished.

To cure this evil as speedily and as effectually as possible, recourse was had to summer-fallowing, and the remedy, wherever it has been judiciously applied, has been attended with complete success. By frequent ploughing and harrowing, all the seeds of the weeds are brought alternately to the surface, where they are allowed to spring, and then turned down and destroyed. All the roots, too, of perennial weeds are torn up and separated from the soil, and are either gathered together and burnt, or carried off the ground.

But cleaning land, though a principal, is not the only advantage obtained by fallowing. It is useful, also, to enrich the soil, to break and reduce it, when too hard and stiff, and to keep it longer from tiring of any particular rotation of crops. By frequent ploughing and harrowing, a considerable quantity of vegetable substance is not only produced, but immediately reduced to a state of putrefaction, and thus converted into manure. The land is also broken and pulverized, and consequently fitted to receive and retain, more readily, the fertilizing dews and showers of rain. And the ground being opened, becomes more penetrable by the air, which, as it circulates through innumerable pores, deposits in the soil the putrid effluvia which it collects and carries along with it, as it passes over the surface of the earth. Hence we find, that if land under a course of fallowing be opened up, even in the driest weather, it will appear black and moist. But if ground, that

has not been stirred by the plough, shall be turned up, it will be found hard, and totally destitute of moisture. In short, the amelioration of land by fallowing is so great, that in many instances, especially when most abounding with vegetating substances, it has been found to require either no additional manure at all, or not the half of what would have otherwise been necessary.

The general utility of fallowing, and its absolute necessity in many cases, being ascertained by trial and experience, the practice is now become common in this county; and, indeed, is in no case neglected, where good husbandry prevails. But though the propriety of fallowing for cleaning foul land has been acknowledged by every intelligent improver, the propriety of repeating it has been disputed. Nay, it has been the object of the unqualified reprobation of some whose agricultural abilities cannot be questioned. I am apt to suspect, however, that the ridicule and abuse, with which such persons have treated this practice, have originated in a too limited investigation of the subject. The theories, founded on facts and experiments within the bounds of a single county or district, must, in general, be fallacious, and cannot, with safety, be universally adopted. What is good husbandry in one part of the kingdom, may be very bad in another. Thus, for example, shallow ploughing is certainly very proper in the case of sandy porous soils; but would be very improper, where the soil is a thin clay lying upon a closs tilly bottom. It may be granted, however, that if the ground has been once complete-

ly cleaned, a proper system of cropping adopted and followed, and a sufficient quantity of manure always at command, the frequent repetition of fallowing will, in general, be unnecessary. But I should doubt whether ground can be ever so completely cleaned, as to supersede the necessity of fallowing for ever after. Some lands are so disposed to run into weeds, that even drilled crops, the best plan next to fallowing, will not avail to keep it always clean. In short, as the repetition and frequency of fallowing, must depend much on the nature of the soil, the command of manure, and the system of cropping adopted, no rule, perhaps, can be laid down capable of universal application. And therefore the matter should be left to the judgment of the farmer. No intelligent husbandman will be disposed to sacrifice a valuable crop, in order to secure an ideal advantage.

In managing this branch of husbandry, it would be extremely proper, if other operations which may claim a preference will permit, to give the land, designed for fallow, the first furrow, before the winter frost sets in, especially if the ground be stiff and heavy, as the action of the frost upon such soil would do more to reduce and pulverize it, than several ploughings. For the moisture, contained in it, increasing in bulk by congelation, will forcibly produce a separation of its parts; and consequently, when thaw and dry weather come, the cohesion being previously destroyed, the earth will fall down into a crumbly or powdery state. With this view the ground should be tilled across, and formed into narrow ridges of two furrows plough-

ed deep, and laid up against each other. This would expose the greatest possible surface to the air, and bring almost the whole soil under the influence of the frost. The second furrow should be given as soon after the end of April as possible. The ground, after this second ploughing, will readily be very rough and uneven, and of course a great number of weeds will have the opportunity of vegetating. In a fortnight or three weeks after, let the break-harrow be applied. This will not only bruise the clods, and destroy the weeds newly sprung, but will tear up and separate from the soil all the roots of perennial weeds, which may be collected and burnt the first dry day. The subsequent ploughings and harrowings, in respect both of time and number, must be regulated by the weather and the state of the land. If designed for wheat, the last ploughing should take place about the middle of August, or the beginning of September, when the ground, if the season has been favourable, will be ready to receive the dung and seed furrow, as soon as the farmer finds it convenient to sow.

SECT. III.—ROTATION OF CROPS.

NOTHING, I am persuaded, contributes more to the amelioration and permanent fertility of the soil, than a judicious rotation of crops. When this is neglected, the effect of every other species of improvement will be lost or greatly diminished. This circumstance hath not escaped the notice of the Fife farmers. For a considerable

number of years back, the introduction of proper systems of cropping has been a serious object of their attention. Accordingly, in many places, where the land is rich, improvements most advanced, and the occupants intelligent and enterprising, judicious rotations have been established and followed with success. In a large proportion of the county, however, improvements may be considered as but just beginning, and therefore the land merely in a state of preparation and trial. Wherever this is the case, neither rotations of the best kind, nor indeed regular rotations of any kind, can as yet be expected. In the high, cold, and poor lands, no rotation is observed, at least none that deserves the name.

From the different rotations to be met with in this county, the following are selected, as being practised by the best farmers and most generally approved of.

1. On strong moist and productive soils.

- | | |
|--|-----------------------------|
| 1. Fallow with dung, or lime
and dung | or 1. Fallow duned, &c. |
| 2. Wheat | 2. Wheat |
| 3. Beans drilled or broad-cast | 3. Pulse or clover (rows |
| 4. Barley with grass-seeds | 4. Barley with 2 or 3 fur- |
| 5. Hay | 5. Oats, then fallow again. |
| 6. Oats, then fallow again | |

2. On rich dry bottomed loams.

- | | |
|---|--|
| 1. Potatoes or drilled beans
with dung | Or, if the farm has access to
plenty of town dung |
| 2. Barley with grass-seeds | 1. Fallow with dung |
| 3. Hay | 2. Wheat |
| 4. Wheat | 3. Barley |
| 5. Pulse | 4. Clover |
| 6. Oats. | 5. Wheat with a slight dunging |
| | 6. Oats |

3. *On light or gravelly soils.*

1. Turnip dunged	Or 1. Turnip with dung	Or 1. Turnip
2. Barley	2. Barley	2. Barley
3. Hay	3. Clover	3. & 4. Hay
4. Wheat	4. Wheat or oats	5. & 6. Pasture
5. Pulse or oats		7. Oats

Or 1. Oats from old ley broken up	Or 1. Potatoes with dung
2. Flax	2. Flax
3. Barley with dung	3. Clover and rye-grass
4. Hay	4. Hay
5. Pasture	5. Oats.

N. B.—A light soil, unless very tenacious of moisture, is improper for flax.

On a dry light loam, mixed with gravel, and of a good depth, the following rotation has been tried and found to answer :

1. Potatoes. 2. Wheat. 3. Hay. 4. Oats.
5. Drilled beans, or pease and beans mixed.
6. Barley. Or, 1. Turnip well dunged. 2.
Barley. 3. Hay. 4. Oats. 5. Drilled beans,
slightly dunged. 6. Wheat.

In the first of these courses the best method seems to be, to give half of the dung to the wheat, and the other half to the beans or barley, and none to the potatoes.

The following rotation has been adopted by Mr Cheap of Rossie, upon a farm which he has lately improved, and keeps in his own hand. 1. Potatoes and turnip, and partly pulse. 2. Barley. 3. Hay. 4. Pasture. And, 5. Oats. The farm consists of 150 acres, inclosed and subdivided into parks of 30 acres each, corre-

sponding to the above course. The land, in its original state, consisted of a poor, thin, deafish soil, without any good property to recommend it, except its being dry, and not worth 5 s. per acre. By judicious management, and a plentiful supply of manure, particularly of marle, the quality and appearance of the soil is entirely changed, and the land brought to such a state of improvement, as to bear abundant crops of any kind of grain. Upon ground in such good condition, many farmers would have introduced wheat into the rotation. But Mr Cheap has, with great propriety, rejected it, as being rather too severe a crop for so light a soil. The exclusion of the wheat will enable the land to produce the other crops in greater abundance and perfection, and to retain its fertility more permanently and with less expence.

The leading feature in all rotations is, to introduce green and cleaning crops, as much as may be, between the white crops.

Upon the high and extensive district, mentioned pages 24th and 25th of this survey, where the soil is a cold wet clay, generally upon a close tilly bottom, with large baulks between the old ridges, and these baulks full of stones; the practice of the most spirited farmers is, first, to clean the land of stones, and to enclose with the largest; then thoroughly to drain it, applying the smaller stones to this purpose; and, while these operations are going forward, to give it a complete summer-fallow. These preparatory steps being taken, the following course is observed:

1. Wheat, and perhaps part oats, well limed and dunged.
2. Pease or beans, or a mixture of both.
3. Barley, with grass-seeds.
4. and 5. generally hay.
6. 7. 8. and, sometimes, 9. pasture.
10. Oats, and then return to summer-fallow.

But experienced farmers, finding that land of this kind, and under this management, does not require fallowing so soon again, substitute flax in place of the fallow at the beginning of the next course. This is generally a rich and profitable crop, attended with this peculiar advantage, that, being separated from the ground early in the month of August, sufficient time is allowed for giving the land a complete dressing for the ensuing crop of wheat. The wheat is succeeded by pulse, and the rotation goes on as before. On many farms in the county, consisting of this kind of soil, the course just now mentioned has been followed without the smallest perceptible inferiority in the after crops, from the effects either of the wheat or of the flax: a proof that the culture of flax is not so ruinous to land as it has been sometimes represented.

As Fife is a grazing as well as a corn county, and as the black cattle bred in it are in high estimation, both for the dairy and for the shambles, the course last mentioned, or something similar, that shall combine both tillage and pasture, would be highly eligible. It will be said, perhaps, that no rotation of this kind can be devised that will be universally applicable; because there are some kinds of soil that will not

suit all the different crops necessary to be introduced. But, though this may be true, I apprehend a rotation of this kind may be pointed out, that will apply to any farm which is proper for the cultivation of wheat, provided it be dry, or capable of being laid dry. Perhaps a strong stiff clay must be excepted; and yet, even though a small portion of the farm should consist of this kind of soil, the inconvenience arising from thence, as well as from any smaller variations, may be remedied by occasional deviations from the established course.

In order at once to explain my meaning, and to shew the practicability of the scheme, let us fix upon a farm of any given size, all arable, and, though consisting of different soils, all good, and capable of bearing wheat; let the farm be completely inclosed and subdivided into eleven fields, as nearly of equal size as circumstances will admit. Let it be drained and cleared of stones, and otherwise properly prepared. On such a farm, the course, laid down in the following scheme, might, I apprehend, be advantageously adopted, with a view to the above-mentioned objects.

Years in the Course.

No. OF FIELDS OR ENCLOSURES.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1.	Fallow.	Wheat.	Beans.	Oats.	Turnip and Potatoes.	Barley.	Hay.	Pasture.	Pasture.	Pasture.	Oats.
2.	Wheat.	Beans.	Oats.	Turnip and Potatoes.	Barley.	Hay.	Pasture.	Pasture.	Pasture.	Oats.	Fallow.
3.	Beans.	Oats.	Turnip and Potatoes.	Barley.	Hay.	Pasture.	Pasture.	Pasture.	Oats.	Fallow.	Wheat.
4.	Oats.	Turnip and Potatoes.	Barley.	Hay.	Pasture.	Pasture.	Pasture.	Oats.	Fallow.	Wheat.	Beans.
5.	Turnip and Potatoes.	Barley.	Hay.	Pasture.	Pasture.	Pasture.	Oats.	Fallow.	Wheat.	Beans.	Oats.
6.	Barley.	Hay.	Pasture.	Pasture.	Pasture.	Oats.	Fallow.	Wheat.	Beans.	Oats.	Turnip and Potatoes.
7.	Hay.	Pasture.	Pasture.	Pasture.	Oats.	Fallow.	Wheat.	Beans.	Oats.	Turnip and Potatoes.	Barley.
8.	Pasture.	Pasture.	Pasture.	Oats.	Fallow.	Wheat.	Beans.	Oats.	Turnip and Potatoes.	Barley.	Hay.
9.	Pasture.	Pasture.	Oats.	Fallow.	Wheat.	Beans.	Oats.	Turnip and Potatoes.	Barley.	Hay.	Pasture.
10.	Pasture.	Oats.	Fallow.	Wheat.	Beans.	Oats.	Turnip and Potatoes.	Barley.	Hay.	Pasture.	Pasture.
11.	Oats.	Fallow.	Wheat.	Beans.	Oats.	Turnip and Potatoes.	Barley.	Hay.	Pasture.	Pasture.	Pasture.

The 12th year the same rotation commences, and goes on as before; or, should the ground appear to be sufficiently clean, pulse, potatoes, or some other crop proper for wheat in succession, may be substituted in place of the fallow.

The above plan is suggested as an example, not as the most perfect of its kind. More competent judges may be able to devise a course of the same duration, and calculated to answer the same purpose, more complete, both in point of arrangement, and in respect of the particular kinds of crops proper to be taken.

This rotation recommends itself by several obvious and important advantages. *1st*, It is evidently calculated to keep the land in good order, such a large proportion of it being applied to green crops and pasture.

2d, It is calculated to give as much permanency as possible to the fertility of the soil under the same course. It is well known that a constant succession of the same crop, or of different crops of a scourging quality, will very soon weaken and impoverish the soil. And it is probable that the same rotation, if a short one, constantly recurring, will have the same effect, though not so immediately. Let the course be ever so good, the ground will tire of it at last. To prevent this as far as possible, the best method seems to be, to put it under a course which will not bring the same kind of crop upon the same spot for a considerable number of years; and the longer the intervening period shall be, the longer will the land submit to the rotation. This, however, may be carried too far. There is certainly a point, beyond which the prolon-

gation of the course cannot be extended, without injury to the tenant. The above plan is judged to be in neither extreme. Whilst it seems best for preserving and continuing the fertility of the land, it is so devised as to afford abundant produce for securing the interest of the tenant.

3dly, Another obvious advantage is, that a farm under this course will always be able to produce for itself a sufficient supply of dung. This is surely of the greatest consequence, especially when the farm is so situated as to be unable to procure the necessary article in sufficient quantity from the neighbourhood. Lime or marle will not make up for the want of dung; and, therefore, if the farm cannot supply itself, less must be kept in tillage, or, by a scanty supply of dung, the crops will fail, and the interest of the farmer be injured.

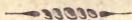
4thly, Another advantage resulting from this scheme is, that the farmer will have three stocks to depend upon for the payment of his rent, and the subsistence of his family, his grain, his cattle, and his dairy. Any one of these may occasionally fail; but it will seldom, perhaps never, happen, that they shall all fail together.

To this plan it has been objected, that the period of the rotation is so long, that the tenant cannot go twice over it during the ordinary currency of leases. But this objection, if it has any weight, operates, not against the plan, but against the short endurance of the lease. If the scheme be good, and conducive to the general improvement of the soil, the short period of leases can be no sufficient reason for rejecting it. The ce-

lerity and perfection of agricultural improvement is the first and principal object. The endurance of leases is but a secondary consideration, and therefore ought to be modelled in a subserviency to the other.

It must be acknowledged, however, that on very rich and high rented lands, this course may not be the most eligible. When the fair rent rises to 40s., 50s., or 60s. and upwards per acre, the farmer must raise a greater number of the more valuable crops, during the currency of his lease, to pay the rent, and indemnify himself. But on all farms in the situation above described, the fair rent of which does not exceed 30s. per acre, the plan recommended bids fair to succeed.

SECT. IV.—CROPS COMMONLY CULTIVATED.



I. OATS.

IN this county, the cultivation of oats is more universal and extensive than that of any other kind of grain. The reasons are obvious. Oats are more generally adapted to the soil and climate. Oat-meal still continues to be a principal article of food among the lower classes of the people; and the consumption by horses has been on the increase for some years past. The progress of luxury has increased the number of carriage and saddle horses, as well of those employed upon the road, as of those in the hands of private gentlemen. Besides, horses are more generally used for the purposes of husbandry

than formerly; they are commonly of a better kind, and more constantly employed, and therefore require a more plentiful and constant supply of oats. The quantity of land annually sown with this kind of grain cannot be computed at less than 30,000 acres, and it generally turns out to be a very profitable crop.

1st, Preparation.—Oats are sown upon ley land broken up after hay or pasture. Frequently they succeed barley, if the barley has not been sown down with grass-seeds, or if the grass has failed. They sometimes follow pease, sometimes turnip, and sometimes wheat.

2d, Sort.—1. *Blainslie*, so called from the name of the place where they are originally cultivated. This species possesses several properties, which recommend it to attention. It will grow and yield a good crop on land that would produce a very inferior crop of any other kind. It is early, and not easily shaken. It meals well, and produces plenty of excellent straw. On strong land, however, and in moist weather, it is apt to lodge. 2. *Bothrie Oats*.—This kind produces an abundant crop, and plenty of meal; but the straw is rather hard and coarse. It requires land in good order, and is not so early as the former. 3. *Red Oats*.—The cultivation of this kind is becoming very common. It is well adapted to cold soils, and ripens some weeks earlier than common oats. The straw is neither abundant, nor of a good quality. But it stands well, is not easily shaken, and gives plenty of meal. From an acre of this kind of oats, sown on ordinary lands, I have known 9 bolls of meal produced. 4. A species called *Early Brown*, or

English Brown.—This is an early and hardy kind, and on that account is sown chiefly on the high and cold districts of the county. Of late *Church's Oats* have been introduced, and produce very luxuriant crops on rich land. But the cultivation of this kind is not yet very extensive. No *Grey Oats*, and few of the black kind are cultivated.

3d, Seed.—The necessary quantity of seed varies according to the condition of the ground and the quality and richness of the soil. If the land be in good order, or if the soil be warm and dry, less seed will be necessary than when the land is poor and nearly exhausted, or than when it is cold and wet. In the former case, a boll or five firlots will be sufficient; but in the latter case, six firlots, and sometimes more, will be necessary. There have been instances of old rich pasture ground, when broken up, sown with eight or nine pecks and producing upwards of 30 seeds. The practice of changing the seed every three or four years is very common, and certainly very proper. But to make this practice answer the purpose completely, proper attention should be paid to the kinds, and to the soils from whence they are taken, that they may be adapted, with advantage, to the land where they are intended to be sown. Even upon the same farm, if it contains a variety of soils, seed may be changed with advantage. It is to be observed, however, that the change ought always to be from the colder and poorer land to that of a warmer and richer quality.

4th, Time of Sowing.—From the beginning of March to the middle of April: And some-

times early oats are sown as late as the beginning of May on warm dry ground.

5th, *Culture while Growing*.—No culture given, except taking out thistles and other large weeds, during the summer months, with the hand, or with the weed hook.

6th, *Harvest*.—The time of cutting oats varies according to the difference of seasons, and of climate. They begin, in general, to be cut about the beginning of September, and are finished in four, five, or six weeks, according to circumstances. In early seasons, oats are ripe in some places a fortnight sooner, and on the high cold grounds, and in late seasons, they are not ready before the beginning or middle of October, and sometimes later.

Oats are universally cut with the sickle, and put up in shocks (provincially *stooks*) of 12 sheaves, two of which are used for the covering. This mode of drying, or *winning* oats, as well as wheat and barley, is perhaps the best that can be devised, when executed with skill and care. The great object is to put up the stook in such a manner as completely to turn off the rain, and to stand fast in blowing weather. For this purpose the sheaves ought to be made as equal in size, and as square at the bottom as possible. In setting them up, the bandster ought to give them a firm seat on the ground, with the bottom neither too close, nor too much separated, gently and equally inclining to each other, and meeting close at the top. The covering sheaves ought to be well opened at the root knot, and properly spread down on each side, to grasp the upright sheaves as close as possible, and with a proper inclina-

tion or slope to carry off the rain. The root-ends of the covering sheaves, meeting at the top and middle of the stook, ought also to be opened and spread a little with the hand, and then pushed close together; by which means, being entangled with one another, they will more effectually shut out the rain, and acquire a greater firmness for resisting the blast. The corn knots are, in this county, generally turned to the outside of the stook. - But this is a bad practice, because, in wet weather, they are apt to spring, and the corn, in consequence, must be lost. That the stooks may be in the least possible danger of being overturned by the winds, they ought to be built in the direction of north-east and south-west, because the strongest winds usually blow from the south-west.

Some practise the method of *butting*, that is, setting up the corn in single sheaves, with the band fixed near the top, and the root end opened and spread out in a circular form. When oats are grassy, or full of weeds, this must be a good plan. Should the weather be fair, with a brisk wind, it will dry more, this way, in two days, than, when stoked, in six. Or, should it happen to get rain, whilst in this position, a day's drought will dry it again. When half dried, it can be put up in hand ricks consisting of from 6 to 10 stooks each, in such a manner as to complete the winning, to secure it from any material damage from the weather, and to put it in the farmer's power to wait the opportunity of bringing it to the barn-yard, without danger, and in good condition. In bad weather, and when the grain is at a great distance

from the barn-yard, it might be adviseable to rick oats and other kinds of corn in the field. By this method the farmer could watch the opportunity of a favourable day, and put them speedily out of danger, which he could not so easily accomplish, if he should carry them in the first instance to the barn yard. After it is thus secured, he can cart it home when he finds it convenient.

7th, Thrashing.—Oats and every other kind of grain are thrashed, partly by the flail, and partly by the lately invented thrashing mills.

8th, Produce.—On rich land in high order, the produce will be twelve bolls per acre and upwards. It is often ten, and from that down to four bolls, according to the quality and condition of the land. The medium cannot be estimated above six bolls per acre, which will bring the whole quantity raised in the county to 180,000 bolls. The oats will weigh from 12 to 14 stone Dutch weight per boll. Sometimes they will exceed that; but I suspect they oftener fall below it, especially on the high cold grounds. A boll of good dry oats will yield a boll of meal, and pay the multures, which generally amount to a thirteenth part of the whole. But in most cases the proportion of meal to oats is 13 or $13\frac{1}{2}$ pecks of the former to 16 pecks of the latter, besides paying the multures.

9th, Consumption.—Of the above estimated produce, 36,000 bolls may be allowed for seed; 40,000 bolls for feeding horses and other animals; and the remaining 104,000 bolls is manufactured into meal, producing about 90,000 bolls. Oat-meal still constitutes a principle ar-

ticle of food among the lower classes of the people. It is partly made into pottage and eaten with milk or small beer for breakfast, and often for supper; and partly into cakes, which, notwithstanding the increasing consumption of wheaten bread, are yet to be met with in almost every house, and very much used. By a certain process, which it is unnecessary to describe, oat-meal is frequently made into a dish, called, in this country, *sowens*, which resembles, in consistence, a flour pudding, is gently acid, and forms a very wholesome and palatable meal. The meal, which remains among the husks, after sifting at the mill, is commonly applied to this purpose.

BARLEY

BARLEY is cultivated in Fife to a very considerable extent, and is considered as a crop of great importance to the farmer. Not less than 20,000 acres are annually applied to the raising of this kind of grain.

1st, Preparation.—Barley is frequently sown after turnip or potatoes. But some chuse to sow oats rather than barley after a turnip crop; apprehending that the barley, in this way, does not succeed so well. This, however, I should suspect is owing to mismanagement, rather than to any defect in a turnip crop as a preparation. If the turnips are sown on dry land and properly dressed; if they are removed from the ground before they shoot and flower; and if two or three furrows are given to the land before sow-

ing the barley, I am persuaded there would be no risk of any deficiency in the crop. 2. It is frequently sown after beans or pease. In this case the barley crop is found to be more or less abundant, in proportion as the beans and pease have been more or less luxuriant and clean. 3. Barley is sometimes sown after oats, with two or three ploughings, and with or without dung, according to the condition of the land. And, 4. It is sometimes sown after wheat.— This method, however, I should think not judicious. Wheat and barley are, perhaps, too similar in quality to succeed one another immediately in the rotation: And accordingly, I have heard farmers complain that their barley crop was seldom good, when sown after wheat.

2d, Sort.—1. *Common Barley*, usually called *Bear*, with six rows of grain on the ear. This kind was once very generally cultivated; but, as improvements in agriculture advance, is now falling into disrepute. It still continues to be sown in the higher and colder parts of the county, to which it is much better adapted than any other kind, as it ripens early, and will yield a tolerable crop on ground, where any other kind would fail. 2. The *long-eared barley*, with two rows of grain. This sort is now universally cultivated on all lands that ly low, and are warm, and are under an improved system of husbandry. It produces larger grain, and of a better quality, than the common bear, is stronger and harder in the straw, and not so apt to lodge, and therefore more proper, when grass seeds are sown along with it. It has been alledged by some, that when barley and com-

mon bear have been sown on ground equally rich and well prepared, the common bear produced the bulkiest crop, both of straw and grain. But, be this as it will, as the long-eared barley is unquestionably the superior, and consequently the most marketable grain, it ought to be preferred, wherever the soil and climate are sufficiently favourable.

3. *Rammel*, or *blended Bear*.—This is the long-eared barley and common bear in a mixed state. The cultivation of this mixture seems to have been the first step of improvement upon the old plan, in respect of the quality of the grain: and this practice still continues in many places. It deserves to be remarked that the long-eared barley and common bear, if mixed together, after growing on separate fields, will not spring equally, either when sown or made into malt; but that, after they have been cultivated for some time in a mixed state, there will, in these respects, be no perceptible difference. The quality of this mixture seems to hold a middle place between the barley and common bear, being superior to the latter, but not so good as the former. This may be owing, perhaps, to the approximation of their different qualities, occasioned by the mutual influence which the plants may have upon one another from their contiguity, whilst growing and coming to maturity.

4. *Siberian Barley*.—The ear of this kind is formed like the long-eared barley, but the grain has a husk like wheat or rye. It is said to malt well, and to be particularly proper for pot-barley. This kind, is not cultivated in Fife to any extent. 5. *French Barley* is likewise to

be seen in some parts of the county. It has two rows of grain, is short in the ear, and spreads the awns in the form of a fan. When it meets with good soil and good husbandry, it produces abundantly. But it is not much cultivated.

3d, Steeping.—Steeping barley, though seldom or never practised in this county, may, nevertheless, in certain circumstances, be extremely proper. When sown on light land, and in very dry weather, it will ly long in the ground, and at last spring very unequally. This inconvenience may be prevented by steeping the seed for 36 hours immediately before it be sown. And to answer the purpose more completely, it ought to be sown under fur. In this way, the seed being lodged in the moistest part of the soil, and beyond the reach of the scorching heat, the vegetation of every grain will be secured, whilst its being previously steeped, will make it appear above ground as soon as if it had been lodged nearer the surface.

4th, Seed.—The quantity of seed allowed to an acre, is from 10 to 16 pecks, varying according to the dryness and richness of the soil, and as it is more or less early sown.

5th, Time of Sowing.—From the middle of April to the end of May.

6th, Culture while growing.—The same as of oats.

7th, Harvest.—Barley is, for the most part, earlier than oats, and is reaped in general between the middle of August and the middle of September. Common bear, sown about the middle of May, will be as soon ripe as barley sown in the end of April. It is almost always

cut with the sickle, bound in sheaves, and stooked in the same manner as oats. It is more difficult to dry, and more easily spoiled in the stack than oats, and therefore requires to stand longer in the field.

In rainy harvests, the farmer is sometimes under the necessity of bringing his corns to the barn-yard, before they be completely dry. In this situation they run a great risk of being damaged in the stack; to prevent which, several expedients have been devised. Some times a sack stuffed with straw, or a sheaf of thatch of about 15 inches diameter, is drawn up the middle, from the bottom to the top, gradually, as the stack is a-building. Some, again, fasten together three pieces of wood of the thickness of rafters, and sufficiently long, in a triangular form, with lath. This they place in the middle, and build the stack around it. In both these methods, if the stack be set on the ground, a communication is kept open at the bottom for the admission of the external air; and thus the heat and moisture are carried off, and the grain prevented from suffering material damage.

8th, Produce.—This must vary in barley as well as every other kind of grain, according to climate, and to the quality and preparation of the ground. In some instances, 12 bolls and upwards will be produced from an acre; and in others not above four bolls. The average may be $6\frac{1}{2}$ bolls per acre; consequently the whole barley produced in the county may amount to 130,000 bolls. The best barley weighs from 17 to 19 or 20 stone Dutch weight per boll.

Consumption.—Though wheaten bread is daily becoming more common, barley meal is still very much used, and is made into bread either by itself, or, which is more frequent, mixed with pease meal, and sometimes with oat meal. A much greater proportion of the barley, however, is consumed by the breweries and distilleries in the county. A considerable quantity is made into pot-barley; and what remains is exported.

WHEAT.

THAT wheat was cultivated in this county, to a considerable extent, some centuries ago, cannot be doubted, when we find that it constituted a principal part of the revenues belonging to the several religious houses in Fife, before the æra of the Reformation. At that period, the wheat payable to the Abbey of Dunfermline amounted to 455 bolls. Upwards of twice that quantity was drawn by the Archbishop and prior of St Andrew's. And we may reasonably suppose, that the abbeyes and priories, and other religious houses of inferior name, in the county, would have their due proportion. But to what extent the culture of this grain was carried at that time, and what the method of management; whether it continued to be equally an object of attention after the Reformation, or whether it suffered any periodical declines and revivals, and what were the causes, we have not sufficient information rightly to ascertain. This, however, we know, that, during the last twenty or thirty years, the cultivation

of wheat has been gradually extending, and has invariably kept pace with the progressive improvement of the soil. Many parts of the county are extremely fit for the production of this valuable grain. It is probable, however, that many have been tempted by its value to push the wheat husbandry further than is proper, sowing it on land, either not adapted to that kind of grain, or before it has been brought to a right state of preparation. By which means they have reaped a very bad crop of wheat, where an abundant crop of oats or barley might have been raised, at less expence, and with less injury to the ground.

1st, Preparation.—Wheat is most commonly sown here after a summer fallow, with dung, or with dung and lime, spread upon it before it receives the seed furrow. If the land be light, it is sometimes ploughed in with a thin furrow. This practice seems very proper, as it lodges the seed beyond the reach of crows and pigeons, at the same time that it serves to give the plants a firmer hold of the ground. 2. After clover, sometimes with one furrow, and sometimes with three. Manure, in this case, is applied or not, according to the state of the ground. 3. After potatoes. If the potatoes are got off the ground in due time, and the seed inserted while the land is dry, a very good crop is generally the consequence. When wheat is sown after potatoes, it might be proper to give the potatoes one half of the dung, and to reserve the other half to be laid on immediately after they are taken up; then the wheat sown and ploughed down with a thin furrow. 4. After

beans or pease. In this case the dung is sometimes given to the wheat, and sometimes to the beans. If the beans have been drilled, and the ground made clean, the wheat crop following seldom fails to be good.

2d, *Sort.*—On land that is cold and moist, and not very strong, the red wheat is preferred; it being thought capable of standing the winter better, and producing a larger crop upon this kind of land than any other. But, from the defect of colour in the flour, it is not in such high estimation with the bakers, and therefore usually brings a lower price at market. White wheat is most generally cultivated. Of this there are different kinds. Velvet wheat is coming much into use, and thrives well. The brown or yellow is likewise sown.

3d, *Steeping*, or rather *Pickling*, is very generally practised. This is done in different ways, either with a pickle of water and sea salt, made so strong as to carry an egg, or with stale urine. When this last is used, sometimes no more is applied than what is just necessary completely to moisten the seed. The grain is allowed to continue no longer in the pickle than is necessary to separate the weak grain, which swims on the top, and is carefully scummed off. Then it is mixed with as much powdered lime as will dry it to a degree fit for sowing, which is always done immediately. Indeed, when it is pickled with stale urine, it must be sown instantly. Should it stand but for a few hours, its vegetative powers will be endangered. In both cases the powdered lime ought never to be applied, new slacked, and very hot, as, in this

state, it has been found to injure the seed, and sometimes to ruin the crop altogether.

Pickling wheat is beneficial in several respects. By separating the weak from the sound grain, it gives the best chance for a healthy and vigorous crop. Soaked with salt water or urine, and crusted around with lime, the seed is less apt to be devoured by fowls. And it is found, by experience, to prevent smut, a disease peculiarly hurtful to wheat, as it not only diminishes the quantity, but renders the sound grain less valuable, as it must be washed and dried before it can be made into flour, an operation which requires considerable trouble and expence. It must be confessed, that smut has appeared where the seed has been pickled, but not so frequently as where it has not.

Various and ingenious have been the opinions formed respecting the nature and cause of this disease. Some have imputed it to vermin among the seed, some to wet and variable weather, and some to poverty of soil. But, whether it be owing to any, or to all of these causes, the business of the farmer is to adopt such methods, as by trial and experience have been found most effectual to prevent it. Pickling, especially with stale urine, seems best adapted to kill vermin. If the cause be poverty of soil, this may be remedied, by manure and proper cultivation; and if these two preventatives be constantly observed, it is probable that the danger arising from the weather will not be great.

4th, Seed.—The quantity of seed depends upon the mode of culture, the state of the ground, and the time of sowing. When sown broad-

cast, seldom less than a boll, and seldom more than 18 pecks, are allowed to the acre. When drilled, which is sometimes practised, 5 or 6 pecks will be sufficient. When the land is rich, dry, and in high order, and the sowing early, 14 pecks will serve an acre as completely as 18 pecks when the ground is cold, wettish, and of inferior quality, or when the time of sowing is late.

5th, Time of Sowing.—Wheat is sown from the beginning of September to Christmas. This point is generally regulated by the season, and by the mode of preparation. Sometimes it is sown as late as the month of February with success. Late sowing, in otherwise favourable circumstances, will produce as bulky a crop, but early sowing generally produces the heaviest grain.

6th, Culture while Growing.—If drilled it is managed like other drilled crops, by horse or hand-hoeing, and harrowing the intervals. If sown broad-cast, nothing more is done, than in barley or oats, except that, in some cases, it is harrowed and rolled in the spring. The propriety of this has been doubted. Circumstances, however, I should apprehend, must determine the matter. If the ground be naturally loose and open, and, at the same time, clean, harrowing would be of little service, perhaps rather injurious, but rolling may be proper and necessary. Whereas, if the land be rather hard, and crusted on the surface, harrowing will be of advantage, as it will have the effect of a hoeing, opening the ground, and allowing the air and moisture to penetrate the soil, and to circulate

more easily about the roots of the grain. This operation, however, ought to be performed when the weather is dry, and neither harrow nor roller ought to be heavy.

7th, Harvest.—Wheat harvest begins from the middle to the end of August, and ends about the beginning of October. It is cut with the sickle, bound in sheaves, and put up in stooks like oats, with this difference, that the stook consists of 14 sheaves instead of 12. From the length of the straw, two sheaves will cover 12 of wheat, as completely as two will cover 10 of oats or barley. As wheat is generally free of grass or weeds, and strong in the straw, it dries sooner than other grain. If the weather be dry, with a good breeze of wind, it will be ready for stacking in eight or ten days: And, unless wetted with rain, need never stand in the stook above a fortnight. It is put up in the barn-yard in round ricks like oats or barley, either raised on stone pillars of about 18 inches high, overlaid with planks of wood, or set on the ground with straw or brush wood under it, to keep it from suffering by damp.

8th, Produce.—The produce of wheat, like that of every other kind of grain, varies, according to the difference of soil, season, improvement, &c. Instances there are of 15 or 16 bolls from an acre: but these are rare: sometimes 12; often 10; and still more frequently eight and under. Eight bolls may be considered as the average produce per acre. The quality of the wheat, in many parts of Fife, is scarcely inferior to any in Scotland, the boll often weighing from 16 to 17 stone Averdupoise weight. The me-

dium, however, cannot be calculated above 15, perhaps not above $14\frac{1}{2}$ stones per boll.

9th; *Manufacture of Bread.*—In nothing almost does the progress of luxury in this county appear more remarkably, than in the increased consumption of wheaten bread. Formerly it was rarely to be seen, except at the tables of the gentry, and of the more wealthy classes of the people; and even by such it was but partially used. Oaten cakes, and bread made of a mixture of barley and pease-meal, were very commonly used by the higher, and wholly by the lower classes. But now there is not a family, however poor, that does not use wheaten bread more or less.

There are 14 flour mills in this county, which manufacture into flour not less than 40,000 bolls of wheat annually, most of which is consumed in the county, besides a considerable quantity brought from Edinburgh and other places.

In manufacturing wheat into flour, the following is the quantity and proportion of the different kinds, according to the method usually followed here. Six bolls, which is the ordinary grist produce

	B.	F.	P.	Stones.
Fine flour	6	2	0	= 52
Second	2	0	0	16
Third	0	2	0	4
Bran	1	3	0	14
Lost in grinding	0	0	2	1
	<hr/>			<hr/>
	10	3	2	87

The quantity of land annually applied in Fife to the purpose of raising wheat, may a-

mount to 9000, or from that to 10,000 acres; and, therefore, according to the calculation before made, the whole produce will be from 72,000 to 80,000 bolls.

BEANS AND PEASE.

Beans and pease are cultivated sometimes separately, and sometimes in a mixed state. Beans are either drilled or sown broad-cast. They thrive best, and consequently prevail most, in the northern and southern districts. In the middle and upland part of the county, they produce, in general, but a scanty and precarious crop. Between six and seven thousand acres may be annually applied to the raising of this kind of grain.

1st, Preparation.—Pease and beans, being a green crop, and of an ameliorating quality, are generally introduced after white crops, particularly wheat or oats, according to the scheme of rotation followed by the farmer. When beans are sown as a preparation for wheat, they commonly get the dung: but when they follow wheat which has been sown on a summer-fallow, and to be succeeded by barley or oats, they are allowed none. It deserves to be remarked, that in the culture of pease and beans, lime is a manure of peculiar efficacy, insomuch that on many different kinds of ground, be it never so well dunged, if it has not been previously limed, they never thrive nor produce a tolerable crop.

When beans are sown in drills, the rows are generally from two to two and a half feet distant from one another. Pease do not answer to be drilled, when sown by themselves, as they will fall over into the intervals, and be in danger of rotting, through the want of air, and too much moisture in the hollow.

2d, Sort.—The small horse-bean, the grey-pea, and the hasting, are the kinds most commonly cultivated.

3d, Seed.—An acre will require from a boll to five firlots of pease, when sown unmixed; and of clean beans, from seven to eight firlots. When sown together, more or less is allowed between these extremes, according as the beans or pease predominate in the mixture.

4th, Time of Sowing.—From the 1st of February to the 20th of March.

5th, Culture while Growing.—Drilled beans are horse and hand-hoed, as often as circumstances may require. But when sown broadcast, or mixed with pease, or when pease are sown by themselves, seldom is any culture given them while growing.

6th, Harvest.—Beans and pease are cut with the sickle, and laid down on straw-bands, if clean beans; but if clean pease, or pease and beans mixed, they are laid upon bands made of the pease; and allowed to remain in that state for some time. They are then bound and set up in stooks, the part of the sheaf that lay undermost, being always put to the outside of the stook, and the stooks sometimes covered, and sometimes not. In this situation they are allowed to remain till they be fit for the barn-

yard. When pease have few or no beans mixed with them, they are sometimes laid down on the fields in handfuls, and turned over, more or less frequently, as the weather and other circumstances may require. In this loose and open state they are suffered to remain, till they be completely dried, and then put up in stacks like hay.

Beans are sometimes allowed to stand uncut, till they are almost quite dried; the pods grown black, and the foliage withered; in which case, they are usually fit to be put together in a few days after they are cut down.

7th, Produce.—Sometimes the produce will be 14, 15, or 16 bolls from an acre, the boll the same as of wheat. But such a large encrease is rare; the average produce cannot be estimated above 6 or 7 bolls. The straw, when properly dried, is excellent food for horses, and may be worth from 50 s. to 4 l. per acre.

Consumption.—So late as 12 or 14 years ago, beans and pease were manufactured into meal in considerable quantities, and this again, either by itself or mixed with barley meal, was made into bread, and very generally used in farmers' families, as well as by trades people and labourers. But though the practice still continues, much less is now consumed this way than formerly. Besides what is made into meal, a considerable quantity is consumed by horses, hogs, &c. and a still larger proportion, perhaps, exported,

POTATOES.

THE *Potatoe* is generally supposed to be an American root, and said to have been brought into Ireland about 230 years ago. From thence it found its way into Britain. But its importance, as an article of food, not being known or attended to, it was at first regarded as a matter of curiosity, and cultivated to a very limited extent. In this country, about 60 years ago, it was to be seen chiefly in gardens; few were planted in the fields. It is only within the last 20 or 30 years that its value has been understood, and the cultivation of it has become general. The culture of this root is now found to be a very useful and profitable improvement in husbandry. By growing under the surface, and thereby breaking and loosening the earth, by the manure and dressing necessary to render them sufficiently productive, and by the stirring which the land receives, when they are taken up, they contribute greatly to ameliorate the soil, and form an excellent preparation for other kinds of crops, such as wheat, barley, oats, and flax.

And as it is profitable as a cleansing and ameliorating crop, it is found to be a wholesome, nourishing, and palatable food for both man and beast. The abundance of the produce is likewise a powerful recommendation of this plant. An acre of land in potatoes will yield a much greater quantity of food for the human species, than when applied to the production of any other crop. In short, since this root came into such general repute, the nation has never been

exposed to such scarcity, as was experienced before that time, and which sometimes bordered upon famine. It may be said to constitute one-third of the food of the common people for eight months in the year. On every farm a considerable quantity is planted for the tenant and his cottagers. And on the lands in the immediate vicinity of the towns and villages, which are very numerous in Fife, a still greater quantity, in proportion, is raised. Such of the inhabitants as have no ground in their own possession, take pieces of land from the farmers in the neighbourhood, when it can be got, and, at a convenient distance, for planting potatoes, manuring it with ashes and street soil, or with dung, when it can be procured. This practice is not merely beneficial to the persons to whom the land is thus let, but very advantageous to the farmer himself. The land brings a good rent, is let only for one year, and, being well manured and cleaned, is properly prepared for a succeeding crop. The quantity of land, annually in potatoes, cannot be under 6000 acres.

1st, Preparation.—Potatoes being usually cultivated as a cleansing crop, they are introduced immediately after white crops, such as wheat or oats. This root seems to be fondest of an open loose soil, such as gravel, sand, or light dry loam. It may, however, be profitably cultivated on any kind of dry land, except a stiff clay. The ground designed for potatoes, is commonly ploughed about the beginning of winter, and as completely loosened and pulverised as possible, by repeated ploughings, before they are planted. The lazy-bed plan, which was formerly follow-

ed, is almost totally given up, and they are now planted everywhere in drills. Those who take land from the farmers for raising potatoes, anxious to have as large a crop as possible, seldom make the drills above 18 or 20 inches asunder, from an apprehension that wider drills will lessen the quantity of the produce. This, however, is found to be a mistaken notion; and therefore farmers and others, who do not labour under that prejudice, generally make the rows three feet, or at least $2\frac{1}{2}$ feet distant, and the plants from 8 to 10 inches asunder in the row. By this method, whilst an equally large crop is produced, an opportunity is afforded for repeated horse-hocings, which, in cleaning foul land, is certainly more effectual than all the dressing which can be given merely with the hand-hoe.

In some cases, after the land has been prepared by repeated ploughings, it is laid into ridges of 3 feet broad, and the dung spread along the furrows. The potatoe sets are then dropped on the dung at the proper distance. To lay the sets in the furrow before the dung is spread, is a good method, and sometimes practised. The seed being thus put in, it is covered either by ploughing the whole intermediate ridges at once, or by a single furrow from each side, leaving the rest untouched till about ten days or a fortnight after.

Sometimes, before planting, the ground is harrowed, and the dung spread over the whole surface as evenly as possible. On each side of the ridge, beginning at one side of the field, a furrow is opened, and the sets dropped along them: they are then covered with the plough;

and after the covering furrow, the plough goes twice or thrice round the ridge, before planting again, so as to bring the rows to their proper distance. And thus they proceed with every ridge in the field, till the whole operation be completed. But it may happen, that, if the hands employed in planting are too few, the plough must stand still for some time; or if they are sufficiently numerous to keep the plough constantly at work, then they must stand idle all the time the plough is employed in tilling the spaces between the rows. In order, therefore, to save time and labour, the planting should be carried on upon two ridges at the same time; so that when the planters are at work on the one ridge, the plough may be employed on the other. By this method, the farmer is not under the necessity of having more hands than can be kept constantly at work.

2d, Sort.—Seed has been sometimes produced from the apple, and much attention has been paid to bring them to perfection as soon as possible. This practice, it has been alleged, is necessary to prevent degeneracy and a diminution of the crop. Of this, however, I apprehend, there would be little danger, even from the continued use of cuttings for seed, provided due attention is paid to soil and culture. It is not easy to express intelligibly the different kinds by their names, as the same species is often called by different names in different parts of the country. The kinds most usually planted are, the large and small *kidney*; the round, and the oblong flat *white*, and the species usually called the *Tartar*. This last is much esteemed,

as it is equally prolific with any other kind, improves towards the end of the season, and continues longest sweet and good. While growing, the young tartars keep together in a cluster about the root of the stem, and ly near the surface; whereas the white kinds grow deeper, and spread wider in the ground. The tartars are of a pale red, streaked with white, especially at the top end. They are hollow eyed, and of a round form. There is likewise a kind to be met with, called *blacks* or *blackamores*, of a very dark purple, inclining to black. It is said to possess all the good properties of the tartar, with this exception, that it is not so prolific.

Potatoes are seldom planted whole; but are cut into pieces, care being taken to have an *eye* in each set. The quantity of seed necessary depends partly on the attention paid to the operation of cutting the sets, and partly on the greater or less width of the drills. Three bolls will, in general, be sufficient for a Scots acre.

3d, Time of Planting.—Potatoes are planted here from the middle of April to the middle of May, and sometimes as late as the beginning of June.

4th, Culture while Growing.—Whichsoever of the methods of planting before mentioned, is adopted, the ground is harrowed at or a little before the time when the potatoes begin to appear. This destroys all the seed weeds that have sprung since the time of planting. As soon after as the rows can be distinctly observed, the earth is tilled away from the potatoes; the plough, in this operation, being brought as near

the plants as possible, consistently with their safety. This contributes not only to destroy weeds, but to loosen the ground about the plants, a circumstance peculiarly advantageous in the culture of this plant. The hand-hoe is employed to stir the ground, and destroy the weeds between the plants in the row. And if the land be stiff, and bound together with root weeds, such as couch-grass, &c., these are torn up with the three-pronged hoe. In about ten days after, and when the weather is dry, the earth is laid back to the plants with the double mould board drill plough. The subsequent ploughings, as to their frequency, and the season of giving them, depend upon the state of the land and the weather. But the last ploughing is generally executed with the broad sharp share before described, and pretty deep; after which it would be proper to draw up the mould close to the stems of the plants, with light broad toothed iron rakes, 18 inches long in the head, and with handles of convenient length. Instruments of this kind will perform the work more expeditiously, and perhaps more completely, than hand-hoes.

The *Curl*, a disease formerly unknown, is now become very common, and very hurtful to this plant. There has been much speculation, and many conjectures formed respecting the cause of this evil, and many methods proposed for prevention and remedy. It is, however, doubtful, whether the real cause has as yet been discovered; and, consequently, whether any of the remedies proposed will prove universally successful. Of the various means of prevention that have been suggested, change of seed, especially

from later and colder soils, where the potatoe has not attained its full maturity, seems to be most generally approved of. And yet, if I may be allowed to judge from my own experience, I apprehend, that change of seed is not always necessary, either for preventing or curing this disease, or for preserving the quality and quantity of the crop. About 14 years ago, when I came to reside in this county, I purchased my seed potatoes from a cold backward farm. The second year after they came into my possession, the curl appeared, and a great number of the plants were affected. Ignorant of the cause or cure of the disorder, and under no apprehensions about the consequences, I continued to plant the same potatoes, and have never to this day changed the seed. The curl has never appeared among them since. The crops continue equally abundant as at the first, and the quality, if there be any difference, is rather improved. I have sometimes 70 bolls from the acre, and never under 50, except in a very cold and wet season. The kind is the Tartar, and the soil a mixture of gravel and light loam, dry and tolerably deep. And they are planted on the same ground only once in six years.

5th, Harvest.—Potatoes are generally taken up in the month of October. Forks, provincially called *gropes* or *grapes*, with three strong broad prongs bent forwards a little towards the points, and with shafts like the spade, are commonly used for this purpose. With this instrument one person turns out the potatoes and searches the ground, another gathers. Sometimes, when the crop is very abundant, one rais-

er will keep two gatherers fully employed. The plough is seldom used, except for turning away a furrow from each side of the row, with a view to render the operation easier and more expeditious. After the potatoes are taken up, they are sometimes put into pits in the field for preservation. The pits are made 4 feet wide, from 4 to 5 feet deep, and of any length, as circumstances may require. When this method is followed, the potatoes are raised a little above the level of the ground, and drawn together at the top, in the form of the roof of a house; then covered with a thick coat of straw, or pob from the lint-mills; after which they are secured with a covering of earth closely packed, and made pretty sharp at the top, with a little ditch around to carry off the water. The pits ought to be made in ground having a declivity, and of a sandy or gravelly nature, to prevent the collection or retention of water about the potatoes.

Sometimes a place is fitted up for them in the barn-yard under ground, and the hay-stack built over them. The door or entrance is either at the end or side, according as the declivity of the ground answers.

But potatoes are most commonly preserved through winter in the house. And as they are peculiarly liable to be injured by heating or by frost, proper precautions should be taken to guard against these dangers. They should be put together in as dry a condition as possible; and the whole wall of the potatoe-house, exposed to the open air, ought to be carefully lined with straw, pob, or withered ferns, to prevent the

access of frost, which, if severe, will penetrate almost any wall.

But, as it will sometimes happen, from wet or frosty weather at the time of raising, that they cannot be housed in the most proper state for keeping, and will therefore be in danger of being damaged, in spite of every precaution, especially if they are put together in large quantities, it may, in that case, be necessary to turn them over during winter, with a view to separate such as are spoiled from the sound. This operation is very troublesome and inconvenient, unless the house be much larger than would otherwise be necessary. In order, therefore, to obviate these inconveniences, and to give the potatoes the greatest possible chance of keeping well, I would beg leave to suggest the following method of arranging and fitting up the potatoe-house.

Suppose, for example, the house to be 15 feet wide within the walls, eight feet high in the side walls; and of any length, corresponding to the quantity to be put up. From the door, which ought to be in the middle, to the back wall, let a space five feet broad be kept open. Then let the two ends of the house be thrown into three divisions each, the divisions four feet wide, extending from the open space in the middle to the gabels, separated from one another by an opening of one foot wide. These divisions or apartments, designed for holding the potatoes, may be constructed with upright bars fixed in the ground and properly secured at the top, and thinly warped with hazle or willow, or any kind of slender and pliant branches. The

spaces of one foot wide between may be either left open, or loosely filled with coarse straw or furze, or any thing else that will admit a ready circulation of air. Though the side walls are supposed to be only eight feet high, yet by beam-filling, the apartments may be raised to the height of 10 feet, if necessary.

The advantages of this plan are obvious. The apartments being no more than four feet wide, the body of potatoes is not very thick. The heat and moisture have an opportunity of escaping easily, and passing off through the open spaces between. And should it happen that the potatoes, through the badness of the weather, have not been got up perfectly dry, the risk, arising from this circumstance, will be less, as they will be more accessible to the air, which may be admitted by keeping the door open in dry windy weather, for some time after they are put up. It is unnecessary to observe, that, during frosty weather, they should be completely secured at all points against its entrance. If it shall be found proper to turn over the potatoes in the winter or spring, with a view to clear them of earth, and to pick out the frosted and unsound, the method of putting them up in separate divisions will also facilitate this operation. Before it becomes necessary, it is probable that one of the apartments at least may be emptied for the use of the family. The next may then be overhauled, and as the potatoes are picked and cleaned, they can be thrown into the empty one; and so on with all the rest, proceeding more expeditiously or more leisurely, as time

and hands can be spared, without the least inconvenience.

6th, Produce.—This varies, like crops of every other kind, according to soil, culture, and season. Sometimes the produce is not above 20 or 24 bolls, and sometimes 60 or 70 bolls from the Scots acre. The average may be 40 bolls per acre. The barley firloft is used for measuring potatoes, but is usually half heaped, or as many allowed as can be laid on with a shovel. When they are sold by weight, 24 Dutch stone is allowed for a boll. According to this supposition, the quantity annually produced in the county may amount to 240,000 bolls, which, in point of solid nourishment, may be equivalent to 80,000 bolls of oat-meal.

7th, Consumption.—A very considerable proportion of the potatoe crop is consumed by horses, cows, hogs, and poultry. For horses, they are esteemed a most excellent feed, are usually given raw, after being washed, to the extent of a peck to each per day. They keep the skin soft, and the belly open. They are exceedingly proper also for milk-cows, and by some are reckoned preferable to turnip; as they produce an equal quantity of milk, and give no bad taste to either milk or butter. But as cows are in danger of being worried or suffocated with potatoes, and as some accidents of this kind have happened, it would be adviseable to cut or mash them before they are given. In feeding hogs, nothing is preferable to the potatoe, either for rearing or fattening. I have seen some fed to a large size, and of excellent quality, who got nothing but potatoes raw or boiled, except a

little pease or oat-meal mixed with them, for a few days before killing. It has been already observed, that potatoes constitute a large proportion, and a very wholesome part, of the food of all ranks, but especially of the lower classes of the people. They are used in various different ways.—Sometimes boiled and eaten simply with salt, often with milk, sometimes with butter, and sometimes with both.—Frequently with butcher-meat,—in pudding and in soup. Potatoes are also manufactured sometimes into starch by private families for their own use.

As potatoes are usually planted in drills, it might be an improvement to mix them with beans. When this practice is observed, the proper method is to drop the beans regularly between the potatoe sets, as they are laid in the furrow. From ground usually so well prepared and manured, a tolerable crop of beans may in this manner be produced, without injury to the potatoes. I myself have repeatedly tried this plan on a small scale, and found it to answer. There was no perceptible difference in the quantity or quality of the potatoes, and no inferiority in the following crop. The last trial was made in 1798. The potatoes were planted in drills four feet distant, and both potatoes and beans laid under the dung. The produce was 90 bolls of potatoes from the acre. Not half the beans came up; whether this was owing to the seed, or to their being planted under the dung, I cannot say. But, notwithstanding this, the produce was from three to four bolls. Such as did spring were extremely prolific. I sometimes counted upwards of 30 pods upon one stalk.

The kind planted was the small horse-bean. It is to be noticed, that when beans are in this manner planted with potatoes, the earliest kind should be chosen for seed, as the potatoe seed-time is usually three weeks later than that of beans.

TURNIP.

Twenty years ago, very few turnips were cultivated in this county. Since that time they have been gradually coming into repute, and the culture of them, of course, more extended, and better understood. Still, however, the turnip-husbandry is not nearly so extensive as its usefulness seems to require, and the nature of our soil will admit. North of the Eden, and west from Burntisland, few turnips, comparatively speaking, are raised. The reason assigned by the farmers is, that wheat being a principal object, they find that they cannot spare manure from this crop in such quantity as to raise turnips to any considerable extent. Accordingly, on many large farms, we often find not above three or four acres of turnip, which are chiefly designed and used for feeding their milch cows in winter. In order to make up for the deficiency of manure occasioned by the want of turnip, the farmers often feed their cattle and horses in the house, during the summer months, with cut clover. On many farms, however, in the middle divisions, and on the east coast, they are cultivated in considerable quantities, and form a part of the usual rotation of crops. From the best informa-

tion I have been able to procure, there may be about 5000 acres annually in turnip.

1st, Preparation.—Turnip generally succeeds a white crop, and when the land is not extremely stiff or foul, is a very good substitute for fallow. The soils most proper for turnip, and on which they are usually sown, are gravel, sand, light loam, and even a clay or heavy loam, if tolerably friable. But on whatever sort they are planted, it is indispensibly necessary that it be dry. This root never thrives on wet land. And besides the scantiness, or total failure of the crop, the ground cannot be properly dressed and cleaned, so that it is often left in a worse condition, in that respect, than before.

The land generally is, and indeed ought always to be, ploughed, before, or during the course of winter; and in the months of May and June, the operation of ploughing is repeated more or less frequently, according to the state of the ground, that it may be as well broken, pulverised, and cleaned as possible, before sowing. They are almost universally sown in drills. The distance between the rows is various; generally from two to three feet. This circumstance, however, ought always to be regulated by the state of the ground. If clean, they may be closer; but if foul, they ought to be wider, that as much room and time as possible may be allowed for horse-hoeing the intermediate spaces. Sometimes the land is thrown into narrow ridges, corresponding to the intended width of the rows; then the dung is laid into the furrows, and the ridges again split with the plough; so that the dung now lies in the

middle of the new formed ridges, right over which the seed is sown with a drill-barrow, and followed by a light roller. Sometimes the dung is spread over the whole surface of the field; then the ridges are formed by throwing two furrows together, and nearly meeting; in the opening between which the turnips are sown, and then the ground rolled. The first method seems to me to be the best; as the dung placed so far below the surface, is not in danger, as in the other way, of being withered by the drought, and is in the properest situation for meeting, and supplying with nourishment, the strong root which the turnip pushes downward in quest of food. Some intelligent farmers spread the dung upon the land, plough it down, and mix it with the soil before the drills are made; and this method is found to answer very well. Planting them in drills is preferable to broadcast, as they are more easily dressed, and the land more completely cleaned, without any diminution of quantity. Besides dung, the turnip often gets lime, especially if the land has not been limed before. In this case the lime is spread over the field, immediately before the drills are made.

2d, Sort and Quantity of Seed—The red, white, and green-topped, are the kinds most commonly sown, sometimes mixed and sometimes separately. The quantity, from two to three pounds per acre. Much less seed might suffice. I have known an acre sown broadcast with a single pound, and the crop sufficiently thick and regular. But less seed is necessary in drills than in broadcast. Judicious farmers,

however, generally sow thick, from an opinion that this practice gives the best chance for a full crop; whilst the expence of the seed is so trifling, as to render the saving of it no object, and the superfluous plants can be removed with very little additional trouble.

3d, Culture while growing.—As soon as the plants are so far advanced as to render the rows easily distinguishable, the earth is laid away with a light plough, which is close on the left side, as far forward as the coulter, to prevent the earth from being thrown upon, and burying the young plants. They are then handhoed, and thinned to the distance of 10 or 12 inches; regularity of distance being, at the same time, occasionally sacrificed to the preservation of a healthy vigorous plant. This operation should never be too long delayed, otherwise the young plants, crowded together, instead of spreading their foliage, and acquiring strength, and rapidity of growth, will push up into long, spindly, tender stems; and care should be taken not to suffer them to remain in clusters. When two, or three, or four plants stand close together, the growth of the whole will be much cramped and retarded. Some time after, perhaps a fortnight, when they have acquired a tolerable size, the earth is laid back with the double mould-board plough. In doing this, the ploughman should cautiously avoid throwing any of the earth upon the plants; or should this at any time accidentally happen, the plant ought to be immediately relieved. If earth is allowed to lodge in the heart of the plant, it will infallibly destroy it. Even breaking the tender blade, and mak-

ing it bleed, greatly hurts the growth. Care should likewise be taken not to raise the earth too high, or to bring it so close as to squeeze the spreading leaves together. This method answers well for potatoes, but is injurious to turnip. After laying back the earth, it should be stirred and trimmed; and where by accident it is raised too high, should be levelled with the hand-hoe. Turnips do not thrive when covered up with mould. They swell best, and acquire a larger size, when two-thirds, perhaps three-fourths, of the body of the turnip stands above the surface of the ground. How often, or how long the operations of ploughing and hoeing turnips should be performed, must depend upon the state of the land, and the forwardness of the crop. It may be laid down, however, as a general rule, that they ought to be repeated as often as weeds appear, and continued as long as they are practicable, without endangering the plants.

The principal danger to which this plant is exposed, is from the slug and the fly. In a fortnight after the young turnips begin to appear, it often happens, especially in dry weather, that either the whole is totally consumed, or so many destroyed as to leave a very scanty and irregular crop. Various methods have been devised to prevent this calamity. Some roll the turnip in the night-time, when the slugs, concealed in the ground through the day, are supposed to come out and feed upon the young plants, by which means they are crushed and destroyed. To save the crop from the ravages of the fly, it has been recommended to sow a

mixture of seed of three different and successive years growth. As the latest growth will always spring first, the different proportions of the mixture will rise at different times. The fly will naturally fasten on that which first appears; but so soon as a second growth comes up, it will quit the first, and attack this; and the same preference will be given to the third when it appears, the youngest being always the sweetest and most palatable. But before this last is finished, what remained of the two former growths will be so far advanced, and have acquired such a harsh and bitter taste, that the fly will not return to them again; and thus a sufficient quantity of plants will escape, and remain for the crop. As this is a very easy method, it is surely worth while to make the trial.

4th, Produce.—Of turnip, in drills from $2\frac{1}{2}$ to 3 feet wide, when the soil is good, the season favourable, and the management proper, an acre will yield from 50 to 60 tons. But as turnips are not infrequently raised on land rather cold and wettish; and as the mode of culture is not yet, perhaps, universally well understood, the average produce cannot be calculated above 35 ton per Scots acre.

7th, Consumption.—The turnips are generally carted from the field to the house or cattle sheds, and used for fattening cattle, or for feeding milk cows, and young stock. Fed off this way, they produce a great quantity of manure. Seldom are sheep fed here with turnip, at least to any considerable extent. The chief inconvenience attending this crop, is the labour of carting them from the field, and in wet weather or moist land, the poaching and spoiling the ground. To prevent

this, it has been recommended to pull all the turnip before the month of December, and, after cutting off the leaves, to pile them up in convenient heaps, covering them with straw. This is, no doubt, a laborious business; but the plan is surely very proper, as, at the same time that the turnips suffer nothing in their quality for feeding, the land is saved from being cut and injured by the carts in wet weather. It should be observed, however, that as the leaves are excellent food, and therefore ought not to be lost; and as they will soon become unfit for use after they are cut, the turnip ought to be drawn and piled up, no faster than the leaves can be consumed in a fresh state. At all rates, turnip should never be allowed to remain on the ground after the beginning, or at farthest, after the middle of March. After that time they begin to flower, grow hard and sticky, and make bad food, and at the same time greatly impoverish the ground. Whatever quantity remains unconsumed at that time, ought to be pulled and piled up, as before directed. In this way the turnip will be preserved in good condition for feeding, the ground will not be injured, and time will be allowed for giving it the necessary number of furrows before putting in the succeeding crop.

FLAX.

THE liberal encouragement, given by the BOARD of TRUSTEES for introducing and extending the culture of *Flax* in Scotland, has been very successful in Fife; there being few counties,

where a greater quantity is raised in proportion to its size, and where the management is, in general, now better understood. From the best information that can be got, it is probable, that about 1500 acres of flax may be annually raised in this county.

1st, Soil and Preparation.—In the cultivation of flax particular attention is necessarily paid to the quality of the soil. A light, thin, gravelly, or sandy soil, if naturally dry, is unsuitable. Neither will a hard stiff clay, or land that is very spongy and wet, answer. Light loam, friable clay, and in general, any open soil of a tolerable depth, and sufficiently retentive of moisture, is proper. The richest crops are usually produced on haugh land, or ground lying on the banks of rivers, which have been deepened and enriched by the fine mould, carried down from the neighbouring hills, by the rain, or with the sediment occasionally deposited by the overflow of water in the time of a flood.

Pasture-ground, that has been laid down clean and in good order, after carrying one crop of oats, will seldom fail to yield a good crop of flax. Potatoes, likewise, is an excellent preparation; and grass seeds sown along with the flax will thrive as well, perhaps better, than after most other crops. The potatoe ground is either not ploughed at all, or ploughed immediately after the potatoes are taken up. Clay land, when designed for flax, is ploughed before winter, to expose it to the action of the frost, and thereby to pulverise it more completely. Indeed any kind of land, that is intended for this plant, ought to be tilled, two or three months before

sowing; as early ploughing has the effect, both of lessening the quantity of weeds, and of rendering the ground fitter to resist the drought, in case a course of dry weather should succeed the sowing. Land that is full of weeds, or that is reduced and impoverished by cropping, whatever be its natural quality, is never chosen for this crop by the judicious farmer; as, in the former case, the expence of weeding will greatly diminish the profit, and in both cases, the crop will be so deficient, both in quantity and quality, as not to balance the expence of management.

When the flax is sown, the ground is completely harrowed, all large lumps of earth are broken with a clod mallet, and stones, quick roots, and every thing that may obstruct the growth of the plant, removed.

2d Sort.—Seed from Holland, Riga, and Philadelphia, are the kinds mostly sown. The first is generally preferred, as being best adapted to this climate, and as producing the largest crop, and finest flax. Philadelphia seed is thought to thrive better than Dutch seed on cold wet soils, and the flax is tolerably fine. Riga seed yields an abundant crop; but the flax is of a very coarse quality. Seed produced at home is, sometimes, used; but does not yield so large a crop as foreign seed. Though this may be true in general, I am apt to think that the difference, when remarkably great, may be owing, in some measure, to the want of skill and attention in drying and keeping the seed, and to our not giving it a fair trial by a change of soil. Besides, it must be allowed that flax requires a more fre-

quent change of seed than almost any other plant. Flax seed propagated at home, in continuation will soon degenerate, and a failure of crop, in respect both of quantity and quality, must be the consequence. To prevent this, and at the same time to save the expence of seed, as far as it can be done with safety, the best method, perhaps, would be to sow foreign seed and its produce alternately; or, if home seed should be sown for a number of years in succession, let it always be the produce of foreign seed.

3d, Time of Sowing and Quantity of Seed.—The time of sowing is from the beginning to the end of April: but by far the greatest quantity is sown about the middle, and from that to the end of the month. Ten pecks Linlithgow measure is the usual quantity allowed to an acre; though, if the land be of inferior quality, or not in the best order, 11, or 12 pecks are sown. A calm day, when the ground is dry, is chosen for sowing: after which it gets a double stroke of a light harrow. If, in the harrowing, any large stones, or quick weeds, are turned up, they are immediately gathered and carried off: and then the ground is smoothed with a roller.

4th, Culture while Growing.—If the flax stands in need of weeding, this is usually performed when it is about four inches long. If done sooner, sufficient time is not allowed for the springing of the weeds, and their coming to a proper length for pulling, and consequently many will escape, and the crop will be foul. If delayed longer, the stalks will be in danger of being broken, or bended so as not to recover their straightness again. This operation is usually perform-

ed by women, who range themselves in close array across the field, and in a lying posture, and, with great dexterity and expedition, pick out every weed that is to be seen or can be laid hold of. Sometimes, however, much damage is done by careless or inexperienced hands, bruising the stalks with their shoes and elbows, and tearing up plants with the weeds. Grass is not considered as a weed necessary or proper to be pulled. It does little harm to the flax, though permitted to remain, but, if pulled, as it has a deep and wide-spread root, it seldom fails to bring a considerable number of the plants along with it.

5th, Harvest.—Flax is pulled from the beginning to the end of August. When the seed is intended to be saved, either for sowing or for bruising, it is allowed to stand till the stalk becomes yellow, the leaves mostly fallen off or withered, and the bolls hard. But if the fineness of the flax is the great object, it is pulled about a fortnight or three weeks earlier.

When pulled, it is laid in handfuls across each other, and suffered to remain in this situation for some time, perhaps for two or three days, and rippled. Care is taken to sort the flax, so as not to mix long and short in the same sheaf. The sheaves are bound with stalks of itself, and made of a size that a man can grasp them with both his hands. The bolls are either dried in the sun, if the weather permit, or dried slowly on a kiln, then threshed, and the seed cleaned, and either put up for sowing, or sold to the oil-mills for bruising. In some cases, where the preservation of the seed for sowing is a principal ob-

ject, the flax is dried in stooks, like oats or barley, with the bolls upon it, stacked up through winter, threshed in the spring, and watered as soon thereafter as the season shall prove favourable.

Flax is frequently watered, without being rippled. But this is surely an improper practice. The bolls, which are an excellent food for cows or horses, being put into the water, are rendered unfit for this purpose, and, at the sametime, are apt to breed vermin in the water, and thereby endanger the flax. In the operation of watering, care is taken to have soft water, if possible. Sometimes it is put into moss holes, and sometimes into canals or ponds, into which soft water can be introduced. If the canal be long, and its situation render a constant supply of water necessary, the flax, where the fresh water enters, is always sooner watered, than that which lies at the other end. This circumstance should be attended to. Flax ought never, if it can possibly be avoided, be put into water, that has been used for the same purpose immediately before. If the season be warm, the water soft, and collected for some time, it will require from eight to ten days. But in this county, flax is seldom allowed to continue in the water till it be completely ready. Allowance is made for its lying a week, perhaps two or three weeks, on the grass.

In putting the flax into the canal, attention is not always paid to the proper method of placing the sheaves. They are frequently thrown in without order, and laid in a horizontal position: whereas they ought to be disposed in rows across

the canal, beginning at the lower end, and placing them in a sloping posture, with the crop or top end up. The reason of which is, that the crop end is most difficult to water, and therefore ought to lye where the water is warmest. The whole is usually covered with sods, having the green sides turned down, to keep the flax clean.

In order to prevent its getting either too much or too little of the water, some stalks are drawn from the middle of a sheaf, and dried for trial. This is done for two or three days successively, immediately before the time it may be supposed to be ready. When, at last, it is found to be sufficiently watered, the covering is carefully removed, and the flax taken out, sheaf by sheaf, and laid in a heap on the edge of the canal, where it remains till the water be tolerably well drained off. Any sheaves, that may be dirtied by the mud on the sides or bottom of the canal, are carefully washed in the water. It is next carted to a grass field, as smooth and clean and well aired as possible; and spread by women in straight and regular rows, the top end of the latter always covering the root of the former row, to prevent its being lifted and disordered by the wind. This operation they perform with great dexterity and expedition. In this state it remains, till it be judged sufficiently watered. In taking it up, they use the point of a reaping hook to raise it from the ground, and collect it into sheaves, which are now made of a larger size than formerly. It is then either stacked at home, or carried directly from the field to the mill, where it is put up, and carefully secured from the weather, till it be dressed, which is ordinari-

ly done in the course of the ensuing winter or spring.

6th, Produce.—This depends much on the soil and preparation of the ground. Sometimes, on rich land, and under good management, from 30 to 36 stones have been raised from the acre, each stone 22 lbs. Averdupoize. The average, however, is far below this, not perhaps above 22 stone per acre. Dressing at the mill is now 2 s. per stone; and heckling, including both lint and braids, is 1 s. the stone. Suppose, then, 1500 acres of flax, and each acre to produce 22 stones, the whole produce will amount to 33,000 stones. All this flax is spun in the county by women and girls, who have generally two-handed wheels, and are so alert at the business, that they can in ordinary spin from ten to twelve *heer* per day. Some have occasionally spun 18, 20, and even 24 *heer* per day. But this requires early rising and late sitting, and is so hard work, that it cannot be done constantly. When manufactured into yarn, it will yield, at an average, $8\frac{1}{2}$ spindles per stone, including tow and braids, and consequently the produce in yarn will amount to 280,500 spindles. This again, manufactured into cloth of various descriptions, will produce, at the rate of $3\frac{1}{2}$ yards from the spindle, 981,750 yards.

Before I leave this article, it may be proper to take notice of an attempt that has been made of late by some proprietors, to check the cultivation of flax, in this county, by introducing a clause into the new leases, prohibiting the tenant from sowing more than a certain specified quantity in the year, and that simply for the

use of his own family. The quantity allowed seldom exceeds ten pecks.

A restriction, so novel, and so contrary to the sentiments and practice that have hitherto prevailed, surely merits some consideration. If the reasons are substantial and conclusive, the prohibition should take place, not only in this county, but in every county in Scotland; for they are equally applicable to all. The Board of Trustees must have, hitherto, been in a great error, and ought instantly to desist from offering premiums, or giving any further encouragement to a practice now found to be so hurtful. But, on the contrary, if it shall appear that the resolution has been hastily and inconsiderately adopted, and is not supported by any solid reasons the scheme ought to be abandoned, and the culture of flax allowed to go on in its usual course.

The chief, and indeed the only reasons assigned for this prohibition, are these two: *1st*, That flax is a very exhausting crop; and, *2dly*, That it affords neither food for cattle, nor manure for the ground.

That flax is an exhausting crop is admitted; but so likewise are wheat, barley, and oats. Before the culture of this plant was rightly understood, it was sometimes sown on land that had carried several crops of oats in succession, immediately before; and then after the flax oats were sown again, the ground all this while receiving no manure. This being the method, it is no wonder that the land suffered. But the injury is not to be ascribed solely to the flax; the other scourging crops must bear an equal

share of the blame. The truth is, the mischief is not to be imputed to the kinds of crops taken, but to the injudicious system pursued. Rare instances of this, however, are now to be met with : and every intelligent farmer would spurn at such wretched management.

But supposing they were more common than they really are, this might be a reason, not for prohibiting the sowing of flax, but for restricting to a more rational mode of cropping. I am authorised to state, from the observations and experience of the most intelligent farmers in the practice of raising flax, that it is not a more exhausting crop than oats, and not so much so as wheat ; and that, when a judicious method of cropping is followed, it has been found, on repeated trials, to have no perceptibly bad effects, either on the other crops, or on the soil.

When flax is sown after potatoes, and followed by clover and rye-grass ; or when it succeeds oats taken from old pasture-ground, broken up, and followed by wheat properly dunged, or by summer fallow, or by turnip and potatoes, according as the soil and state of the ground shall appear to be most answerable, a good crop may be expected, without injury to the land or to the succeeding crops. When sown with grass seeds after potatoes that have been properly dunged, and completely cleaned by horse and hand-hoeing, it requires no weeding ; the produce has been from 30 to 36 tron stones from the acre ; and the land, after yielding two good crops of grass annually, for two successive years, has been broken up for oats, and produced 10 bolls

per acre. The above statement is from actual experience, and may therefore be depended upon; and from hence it may be fairly concluded, that upon this plan no injury can be done to the landlord or his ground. Let us next see how the interest of the tenant is affected.

An acre of flax, managed according to this plan, produces, at an average, 32 stones, at 12 s. per stone	-	-	-	L. 19	4	0
If rippled, and the seed carefully managed, the produce will be at least two bolls, which, at 20 s., is	-	-	-	2	0	0
The boll chaff, a valuable feed for horses, will be worth	-	-	-	0	10	0
				<hr/>		
Gross value				L. 21	14	0

Suppose the rent, per acre	-	L. 1	10	0		
Seed 10 pecks, at 4s. 8d.	-	2	6	8		
No weeding necessary.						
Pulling, rippling, watering, &c.	-	2	10	0		
Dressing at the mill 32 stones, at 2s. per stone	-	-	-	3 4 0		
				<hr/>		
Expence	L. 9	10	8			
				<hr/>		
				9	10	8
				<hr/>		
Neat profit				L. 12	4	4
				<hr/>		

Suppose a wheat crop upon the same ground,

Produce 10 bolls, at 22 s. per boll	-	L. 11	0	0		
Straw, 8 thrave at 4s. 6d.	-	-	-	1 16 0		
				<hr/>		
Gross value				L. 12	16	0
Rent	-	L. 1	10	0		
Ploughing once	-	0	5	0		
Seed	-	1	2	0		
Cutting, leading, thrashing	-	1	0	0		
				<hr/>		
				3	17	0
				<hr/>		
Neat profit				L. 8	19	0
				<hr/>		

Neat profit from the flax crop	L. 12	4	4
Neat profit from the wheat	-	8	19 0
		<hr/>	
Balance in favour of the flax	L. 3	5	4

But if, instead of wheat, we should suppose barley or oats to be the crop, the difference of value in favours of the flax would be 2 l. or 3 l. more.

In short, it seems evident that flax may be raised with as little injury to the land as either wheat or oats, provided the following courses be observed.

- | | |
|---|-------------------------------|
| 1. Potatoes with dung, well Or, 1. Oats from old rich ley.
hoed and cleaned; | |
| 2. Flax with grass seeds. | 2. Flax. |
| 3. Hay. | 3. Turnip or potatoes dunged. |
| 4. Oats. | 4. Barley with grass seeds. |
| 5. Turnip. | 5. Hay. |
| 6. Barley with grass seeds. | 6. Pasture, &c. |
| 7. Pasture, &c. | |

Or,

1. Oats as above.
2. Flax.
3. Wheat with three furrows and dunged.
4. Pulse.
5. Barley with grass seeds.
6. Hay.
7. Pasture, &c.

N. B. If the ground be not very rich, summer fallow may succeed the flax, and wheat after the fallow.

In the middle district of Fife, where the ground is much elevated, and the soil cold and moist-bottomed, flax is found to thrive extremely well, and to be of a fine quality. Hence the culture of flax prevails more here than in any

other part of the county. Even on very poor, cold bottomed land, inclining to clay, and rented at or below 10 s. per acre, where the best management cannot produce a tolerable crop of any kind of grain, flax will yield a good crop. To the farmer possessing such land, the raising of flax must be a very material object; and the course found most advantageous is; *1st*, Oats from old pasture, the produce not exceeding three seeds. *2d*, Flax, the produce at an average 20 stons tron. *3d*, Oats with dung, the produce from four to five bolls per acre. *4th*, After oats, the ground fallowed, limed and dunged; for, *5th*, Barley or oats with grass seeds. *6th*, Pasture, to continue for six or seven years. If the quality of the soil will admit, wheat with dung is introduced after the flax, the produce seven or eight bolls. Whether this practice can be justified upon the principles of good husbandry, I pretend not to say. But it proves that the flax is no way injurious to the ground, because it appears that the crop of oats following the flax, even when no dung is given, is uniformly equal, and often superior, to the one preceding it; and wheat after flax seldom fails, if the land be otherwise answerable.

But supposing it proved that the culture of flax, when managed with judgment, does not injure the land, it is still insisted, that, as it produces neither food for cattle nor manure for the ground, it ought to be discouraged. Perhaps, however, this objection will be found to have no great weight, when the following observations are considered:

1st, When a farm is brought to a proper state of improvement, and under judicious management, the other crops will generally be so abundant, as to yield a sufficient quantity of fodder and manure, even though a part be applied to a crop which affords none.

2d, The farmer is usually allowed to sell hay from his farm, and it often happens that he depends upon this for a considerable proportion of his rent. Instead of selling hay, he can dispose of his flax, and reserve as much hay as will correspond to the quantity of fodder that would have grown on the land appropriated to the flax. In this way the farm sustains no loss by a deprivation of manure.

3dly, The whole flax raised at present in the county, is scarcely sufficient for home-consumption; and, therefore, it merits some consideration, whether it be wise or proper to restrain the inhabitants of any country, or district of a country, from supplying themselves with the necessaries of life from their own territory, when this can be accomplished on easier terms than from a foreign market, and, at the same time, without any injury, either to the proprietor, or to the cultivator, or to the land.

4th, In a county like Fife, where the linen manufactures are carried on with so much spirit, and to so great an extent, can it be good policy to restrain within such narrow bounds the production of the raw material from which the goods are manufactured? Suppose the culture were much more extensive than it is, as it would be no injury to agricultural improvement, so it would have the effect of lessening the im-

portation of foreign flax; and thus keep the money circulating at home, that would otherwise be sent to a foreign market.

5th, Supposing no restrictions of this kind to take place, there can be no danger that the culture of this plant will ever be carried to an extreme. At present, there is not above the $\frac{1}{40}$ th part of the arable land in the county applied to the raising of flax. But though the $\frac{1}{10}$ th part should be occupied this way, and beyond that there is no probability it can ever go, this would never give any serious cause of alarm. The land is not generally proper for flax: And wise farmers will always avoid raising the least profitable crops. Water is not to be got every where at a convenient nearness; and it is a crop which requires a great deal of attention, labour, and expence; and consequently must occasion considerable loss in case of failure. These circumstances will, of themselves, be sufficient restraints, without any formal or express prohibitions. Accordingly we find, that, in many parts of the county, particularly on the north side, these considerations have had their effect, and little flax is produced.

In short, it is highly probable, that, as the science of agriculture in general, and the culture of flax in particular, come to be better and more universally understood, flax will in no case be raised on land where grain crops can be cultivated with superior, or even with equal advantage, but will be entirely confined to such farms, or to such parts of farms, as are peculiarly adapted to this kind of crop, and consequently can be more profitably applied to this, than to

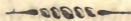
any other purpose. Such restrictions, therefore, are equally unnecessary and improper.

6th, The liberty of raising flax to any extent the farmer himself shall judge proper, must, in many cases, be highly beneficial, as it furnishes him with the most effectual mean of securing a sufficient supply of hands, at all times, and upon reasonable terms, for carrying on the business of the farm. During the summer and harvest months, when his potatoes and turnips are to be dressed, his hay to be win, and his corns to be cut down, he has occasion for a number of extra hands to assist. These he often finds it difficult to procure. Most of the young men are either engaged by the year, or confined to some stated employment; his chief dependence, therefore, is on the females. In order to secure them, he has it in his power to oblige them, by sowing for each a few lippies of lint-seed, for which they pay, in labour, at the rate of 2 s. or 2 s. 6 d. the lippie, according to the quality of the ground. And as they consider sowing lint for them as a favour, they not only work for their lint ground, but are ready to work to him for wages at any time when their assistance may be necessary. In this way he can always secure a certain number of hands, when their services are wanted, while, at the same time, he furnishes them with the means of being usefully employed at home, when he has not occasion for their labour.

7th, Though flax, it must be owned, does not produce fodder and manure equal to other crops, yet even in this respect it is not totally deficient. The chaff and weak seed of an acre

is reckoned worth 10 s.; and the oil-cake of 2 bolls of seed, the produce of an acre, is 22 stone, equal to double its weight of hay for feeding. And the dung of cattle, while feeding on the oil-cake and boll-chaff, is much richer than farm-yard dung, two cart-loads of the former being reckoned equal to three of the latter.

SECT. V.—CROPS NOT COMMONLY CULTIVATED.



I. SWEDISH TURNIP, OR ROOTA BAGA.

THE cultivation of this root has been attempted; but it has neither been general, nor to any considerable extent by any individual. At the same time, if it possess the properties ascribed to it by those who seem to be acquainted with it, it surely deserves attention. Though of a smaller size, and less luxuriant foliage, it is more solid, and heavier in proportion to its bulk, than the common turnip, stands the frost much better, and when in flower in the spring, continues soft and juicy; and the cattle are exceedingly fond of it. And, therefore, though the farmer should not entirely substitute this root in place of the common turnip, it might be cultivated, with advantage, for a supply of green food between the turnip and the young grass, especially as it keeps well, when pulled and piled up in heaps. The principal objections to it are, that it requires more labour, as it must be raised on a seed-bed and transplanted, and

that it does not produce such a quantity of food as the common turnip. But the objection arising from the additional trouble, if the plant be valuable, is of little consequence. It requires no more time and expence in raising and planting, than cabbage or coleworts. As to quantity, I am of opinion, that, if proper attention be paid, a crop, not remarkably inferior, may be raised. As it does not grow to a very large size, and as the foliage is not so very luxuriant, the drills may be brought nearer, and the plants closer in the row. Suppose, then, the drills at 20 inches distance, and the plants 8 inches from one another in the row, and suppose the average-weight of each plant to be 2 lib., which is a moderate calculation, as we are told by a gentleman well acquainted with the subject, that the weight runs from 4 to 10 pounds each, we shall in this way have about 16 pounds in the square yard, which will amount fully to 40 tons in the Scots acre. This, I presume, will be found equal to an acre of ordinary turnip. At any rate, the culture of it seems to be of importance, at least to fill up blanks in turnip-fields, or for putting in, when the turnip shall be destroyed by the fly, and the season too late for sowing again with any prospect of a tolerable crop.

2. CABBAGE & COLEWORTS, OR OPEN KAIL,

ARE cultivated, but not commonly. Cabbage requiring a stronger soil, more manure and more room, and being more susceptible of injury from rainy and frosty weather, is not so

much in use as the coleworts. On farms, where these vegetables are cultivated to any considerable extent, they form a part of the rotation ; and are introduced along with the turnip or potatoes, planted in drills of the same width, the cabbage plants at the distance of two feet, and the open kail a few inches nearer, in the row. They are horse and hand-hoed, and cleaned in the same manner as potatoes. They answer better for feeding milk-cows than for fattening cattle ; and have the advantage of being easily taken up in the time of frost, when the turnip cannot be got. The number of plants allowed to an acre is from 8,000 to 10,000, according to the width of the drills.

3. TARES,

ARE sometimes sown as a green food for horses, and come in between the first and second cutting of the clover. Winter tares have likewise been sown, in some instances, for a supply of green food, in the beginning of summer, before the clover is ready for cutting. But the culture of neither has ever been carried to any great extent.

4. CARROT.

THIS root, though a most wholesome and nourishing food, whether for horses or hogs, is seldom to be met with here in the open fields. Carrots require a deep, rich, open soil. In frosty weather, they are still more difficult to be taken up than turnip. They often suffer from ver-

min, when they continue long in the ground ; and perhaps they cannot be kept in a body so conveniently and so safely, if they are taken up before winter. The best way of preserving them is to mix them with dry sand.

5. RYE.

THIS kind of grain, though once common in Fife, is now cultivated but by a few, and on a very limited scale. It will thrive on land too weak and poor for wheat, and will stand where, from the richness of the soil, wheat would fall and be lost. But as it is a very exhausting crop, the value of the grain small, and the bread made of it disliked by most people, especially since wheaten bread came to be so much used, few farmers think it worth their while to cultivate it.

There may be some crops of other kinds tried, such as hemp, buck-wheat, mustard, rape, &c. but all on so small a scale, that it is unnecessary particularly to mention them.

CHAPTER VIII.

Grasses.



SECTION I.

PASTURE AND MEADOWS.

IT has been already stated, that about *one-fifth* of the county may be considered as inaccessible to the plough. A considerable portion of this, however, yields, though not an abundant, a nourishing and wholesome pasture for sheep and young cattle. Of that part which is considered as arable, a large proportion has never, at least within memory, been touched by the plough. The difficulty and expence of draining, and clearing it of stones, which in many places are to be found very large, and in great quantities, and also the short duration of leases, have discouraged farmers from the cultivation of it, and induced them to apply their labour to such parts of their farms as yielded the fairest prospect of success and indemnification.

Of the land capable of tillage, without the difficult and expensive preparations just now mentioned, there is a large portion which, from soil, climate, and other circumstances, is judged to be more properly adapted to pasture; and

therefore, after having born two or three grain-crops, is laid down in grass, and allowed to ly in that condition for seven or eight, or, perhaps, a greater number of years.

Of the land of a superior quality, and in a higher state of cultivation, there is also a part annually in pasture. This consists partly of parks laid down in grass by proprietors, and occasionally broken up for grain; and partly of land under a regular course of cropping, but reverting more quickly to tillage.

Of meadow-ground there are also several considerable tracks, besides many detached spots of smaller extent, scattered over the county. The quality of the meadow-grass is various. Some of it is exceedingly good; but the largest proportion is coarse; very fit, however, for the winter-food of young cattle; and, when well got up, good food for any cattle, while feeding on turnip. The quantity of each of the different kinds of pasture and meadow-ground, just now mentioned, cannot be easily ascertained. But the whole cannot be reckoned less than 140,000 acres.

SECT. II.—ARTIFICIAL GRASSES.

RYE-GRASS, and red and white CLOVERS, are the artificial grasses most commonly sown. Some years ago the cultivation of these was very limited. But now they are to be seen on almost every farm; and many farmers raise them in such abundance, that they can not only supply themselves plentifully, but dispose of a con-

siderable quantity to others. When hay is the object, rye-grass and red clover are sown in a mixed state, in the proportion of two Winchester bushels, or which is nearly the same, two wheat firlots of rye-grass, and 16 pounds of red clover to the acre. The seeds are sown, sometimes separately, and sometimes mixed. The first is judged the preferable method. When rye-grass is intended for seed, it is sown by itself, or with a very small proportion of clover. If the crop is intended for green food, it consists either altogether of clover, or, which is the better method, with a small proportion of rye-grass. When the land is to be laid down for pasture, a less quantity of red clover is allowed, and the deficiency supplied with white clover and rib-grass.

There are two kinds of rye-grass, the one perennial, and the other annual. When the land is intended to carry grass for one year only, the annual kind is perhaps preferable, as it produces rather a more luxuriant crop than the other, and leaves no quick roots to hurt the land. Rye-grass, especially if the seed be allowed to ripen, is a very exhausting crop. But clover has the contrary effect, partly from its being a broad leaved succulent plant, and therefore deriving much of its nourishment from the air, and partly from the largeness of its roots, which being reduced to a putrescent state by tillage, serve to fertilize the soil. Clover, when not sown too thick, produces a tall strong stem; the root of course will be proportionally large, and therefore must be more ameliorating. But when sown thick, and the stems consequently

small, or when cropt down by feeding, the roots will be proportionally weak, and therefore will be less serviceable to the ground.

These grasses are usually sown in April and May, along with barley, oats, or wheat. They ought never to be attempted on cold, wet, or stiff clay soils, till the ground be completely dried, warmed, and pulverized with tillage and manure. On all soils that are open and dry, and properly manured, they thrive well. Even on hard light land, when rightly prepared, luxuriant crops are produced in a dropping season. But in no case ought artificial grasses of any kind to be sown, unless the ground be previously well cleaned, either by a red fallow or a drill crop. In this county there may be from 10,000 to 12,000 acres annually under clover and rye-grass. The crop is generally good, and in some places uncommonly abundant. In the parish of Newburgh, upwards of 400 stones of hay have been taken from an acre, besides two weighty after-crops cut and fed off green. But the average produce will not much exceed 200 stones per acre.

SECT. II.—HAY-HARVEST.

HAY-HARVEST begins in July, sooner or later, according as the season is more or less favourable. In hay-making, two things are chiefly attended to ;—first, the time of cutting ; and, secondly, the manner of winning or drying the hay. When the rye-grass is sown with a view to save the seed, as soon as it is fully ripe, it is

cut and bound up in sheaves, dried in stooks, and put up in stacks like barley or oats. But if hay only be the object, it is cut down at least a fortnight before it be ripe, and while the seed is not yet in a state to be easily separated from the straw. Several advantages arise from this practice. The hay will be much superior in quality than when allowed to be fully ripe; will have a better flavour, and possess more of the natural juices. When completely ripened, before it be cut, the seed is apt to be mostly lost in the process of winning, stacking, cutting down again, and carrying to the rack or hay-loft. And this kind of grass, when fully ripe, and deprived of the seed, is little superior to oat-straw. Another advantage is, that, by cutting before it be ripe, the ground will be less exhausted. When plants of any kind are allowed to run to seed, the leaves fall or wither; and the stem grows dry and hard, and consequently incapable of deriving any further nourishment from the air. The soil, therefore, being now obliged to supply the whole food necessary for maturing and perfecting the plants, must be greatly scourged and exhausted. This injury to the ground will be prevented by removing the crop before it be fully ripe. Another advantage, derived from early cutting, is, that the succeeding crop of clover will be more forward and more luxuriant, and the rye-grass, springing again, will render it more weighty and abundant. And, which is of no small consequence, if the whole second crop shall not be necessary for green food, more time will be allowed for making it into hay. Perhaps the best

method of managing this, is, to make it rather more than half dry, and then mix it intimately with fresh old straw, and put it up into a stack. It will, in this state, make excellent winter food for cattle.

The mode of winning hay is not uniform ; but is generally regulated by the kind and nature of the grass, and the state of the weather. Sometimes hay from the seed, such as clover and rye-grass, is allowed to ly in the swathe for a few days after it is cut ; and then, if the weather has been, and still continues to be dry, it is put into large cocks or tramp ricks in the field. Others, after allowing it to remain in the swathe for a short time, either turn it over or spread it out on the morning of a dry day, and, on the afternoon, put it into large cocks ; after which, as soon as it is judged sufficiently dead, it is brought to the barn-yard and stacked. The former method requires less labour ; and, therefore, when circumstances will permit, ought to be preferred. But should it meet with much rain in the swathe, and should it, at the same time, contain a large proportion of clover, it will be necessary, at all events, to spread it out. In such circumstances, should it be allowed to continue long in the swathe, it would come so close together, that the air could not easily pēntrate it : It would become yellow, and lose its flavour before it could be dried. Repeated showers, or a long continuance of heavy rains, will do less harm to hay when spread, than when lying in the swathe, or in small cocks.

Natural grass, or meadow-hay, from its softness, and consequent closeness, when thrown off

the scythe, will not admit of the same method of winning as rye-grass. The practice, therefore, is, to spread it soon after it is cut, and to turn it repeatedly at proper intervals. As soon as it is tolerably dry, it is put into cocks of a moderate size, which, if the weather continue favourable, are not spread out again, but turned over and increased in size, by putting two into one; and then, when sufficiently dry, they are put together in tramp ricks, containing from 50 to 80 stones, neatly formed, and made fast with ropes, to secure them against the weather.

Heating in the stack, to a certain degree, is reckoned no disadvantage to hay, if this be occasioned by its own natural sap, but if by rain, the effect is otherwise.

SECT. IV.—FEEDING.

THE quantity of live-stock that can be fed upon any given quantity of pasture, must depend upon a variety of circumstances; such as the natural quality of the ground, and the improvement it has received; its being open or inclosed, and the particular method of management observed. Enclosures of a rich soil, and laid down in proper order, will not barely keep in good condition, but will fatten, in the proportion of an ox, or a cow of a large size, to the acre. Of some kinds of pasture, two acres, and of others much more, will be necessary for the same purpose. There are considerable tracts of land in the county which would be overlaid if two sheep were allotted to the acre. The various gradations in the quality of the pasture, and the ex-

tent of each kind, is beyond my power, and is, perhaps, of little consequence, precisely to ascertain. But as so large a proportion of the country is better adapted to grazing than to the culture of grain, it may be proper to suggest how this branch of husbandry may be managed with the greatest economy and advantage.

As much of the land, principally designed for pasture, as possible, should be enclosed. The same quantity under shelter will feed a greater number of cattle, and to better purpose, than when in an open and exposed state. The pasture ought never to be overstocked. When this is done, not only are the cattle starved, but the quantity of herbage diminished, and the soil impoverished. When the pasture ground is enclosed and subdivided, the cattle ought to be shifted from one enclosure to another, at proper intervals. This practice tends to increase the quantity of grass, and the ground being clean when the cattle return to it, they feed more greedily, and with greater relish. As the dung, dropped by the cattle while feeding, takes many spots of the ground, and raises a luxuriant crop of grass, which the cattle themselves wo'nt taste, horses should be brought in to eat it up. When the dairy is a principal object, and the quality of the milk and butter particularly regarded, sheep should not be allowed to feed along with the milk cows, as they will select and pick up by the roots the finest parts of the herbage.

The different purposes to which the pasture grounds are applied, will be mentioned under the article respecting live-stock.

CHAPTER IX.

Gardens and Orchards.

THERE is nothing in Fife that can be properly called an *Orchard*. The remains of one, indeed, are to be seen at the old abbey of Lindores; but its extent is so much contracted, the produce so diminished, and the quality of the fruit so much degenerated, that it scarcely deserves attention. The soil and climate must certainly have been found unfavourable to the production of apples and pears, in any degree of perfection, otherwise we might have expected that the cultivation of them would have been much more extensive, when we consider the taste and opulence of the ancient inhabitants; and, particularly, the number of abbeys and monasteries, and the many church dignitaries, who, in the times of popery, had their residence in this county, and who usually paid the greatest attention to these luxuries.

Gardens, however, are very numerous, and many of them extensive, and in a very elegant style. This is owing to the great number of opulent proprietors, who are resident, or have their family-seats in the county. In these gardens, strawberries, gooseberries, currants, plumbs and cherries, of every species, are produced in great profusion, and of excellent quality. Ap-

ples and pears, too, are to be seen on walls, and standards and espaliers, in considerable quantity, and tolerable perfection. Many of the Noblemen and Gentlemen have hot-walls, hot-houses, and green-houses, on which the pine-apple, the grape, peach, apricot, nectarine, and many exotic plants, are cultivated with success. In all these, as well as in other gardens of inferior style, every kind of kitchen vegetable is produced in great abundance.

There are few gardens in the county, and none of these of any considerable extent, rented by gardeners, for the purpose of disposing of their produce to the public. About twenty acres of ground are occupied this way in the vicinity of Kirkaldy; but not near so much, I believe, any where else. Most of the families, in the towns and villages, have little gardens, either rented, or their own property, from which they supply themselves with as much garden stuff as is necessary.

CHAPTER X.

Woods and Plantations.

THERE are some patches of natural wood in Fife ; but these are so few and so inconsiderable, that they deserve no particular notice.

The wood growing around the mansion-houses of proprietors, may be considered as plantations. These are numerous, and the wood mostly aged, and valuable, consisting of ash, elm, beech, fir of different kinds, limes, and some oak. Those belonging to the Earls of Crawford and Leven are the largest. Several plantations, less extensive, have been raised in different parts of the county, particularly on the north side by the proprietor of Rankeiler, and Mr Gourley of Craigothrie ; and on the south, on the estates of General Wemyss, Sir James Sinclair Erskine, and Mr Ferguson of Raith. These are now in an advanced state, and, whilst they greatly improve the appearance of the country, will amply repay the owners for their trouble and expence.

Several tracts of barren ground, and divided commons, have been lately planted. But as the trees are yet in an infant state, they make little appearance. These young plantations consist of various kinds, such as oak, Scots-fir, larix, beech, birch, ash, &c. the kind always bearing

the largest proportion, that is judged most congenial to the soil. The larix seems to be in highest repute, as it agrees with almost any soil; the wood is found to be very valuable, and its growth more rapid than that of any other kind.

As the want of shelter is one of the greatest disadvantages which this country labours under, more attention ought to be paid to planting than has hitherto been. Besides the profits ultimately arising from the wood, the adjacent grounds, whether in tillage or in pasture, being thus sheltered, would become more productive and more valuable.

CHAPTER XI.

Commons and Wastes.

THERE is now very little unappropriated land in Fife. The commons have, of late, been mostly divided, and applied either to cropping, or pasture, or planting, according to the quality of the ground, or to the taste and views of the several proprietors. In the management of these divided commonities, an error may be committed. The desire of immediate profit may blind the eyes of the proprietors, and induce them to appropriate a greater proportion of them to tillage and pasture, than is proper. This ought to be guarded against. Most of the grounds in question, it is apprehended, are incapable of being improved to advantage, except by planting; that is, they will in no other way yield an adequate return for the expences that must necessarily be incurred.

Of a different description, however, is the extensive commonity of the Lomond-hills. This commonity contains from 3000 to 3,500 acres, free from heath: the sward is verdant and kindly, chiefly composed of sheep's fescue, white-clover, and other good herbage, inferior to no ground in Scotland, of equal extent, for grazing either sheep or young cattle.

This extensive subject was formerly attached to the palace of Falkland; but has long since become, under charters from the Crown, the common property of the surrounding heritors.

It cannot be supposed, that at a period when the great benefit, resulting both to the individuals and to the public, from the division of commonities, is so clearly seen, and so generally embraced, this valuable tract of land should be suffered to remain in its present comparatively unproductive state, from any other cause, than the supposed difficulty of obtaining a division, under the authority of the act 1695; which act exempts from division commonities in property to the king or to royal burghs.

How far the above restrictive clause of the act is applicable to the Lomond-hills, I take not upon me to decide. But I hope I shall not be thought to step out of my way, if I venture to suggest to the heritors interested in bringing about a division, that if the act 1695 be found inadequate to that end, the object might easily be obtained by an application to Parliament: That such an application would meet with success, there is the best reason to expect, especially at this time, when both King and Parliament are patronising and supporting a Board of Agriculture, for the express purpose of extending and accelerating the improvement of the soil in every part of the kingdom.

The following information, afforded me by a neighbouring heritor, appears to place the matter in a new and important point of view, and shows how highly advantageous the divi-

sion of this commonty would be to all concerned.

This gentleman has lately enclosed about 170 acres of ground contiguous to, and of very much the same quality of soil, with the Lomond-hills. This ground, in its former open state, yielded a rent of little more than 15*d.* the acre. Last year he let it as a grass park for 50 guineas; and this year, although one of the most unfavourable seasons experienced for a long time past, it has maintained above 70 head of cattle.

From the above experiment, this gentleman makes the following calculation: The Lomond-hills are of a quality no way inferior to the park above mentioned, and about 20 times its extent. Therefore he reasonably concludes, that in a divided and enclosed state, they would maintain above 1400 head of cattle. If grazed with sheep, the profits would probably be still greater: A very different return, indeed, from that which the proprietors now draw from it, in its present neglected state. He concludes with observing, that the hill abounding with lime-stone and free-stone quarries, the expence of enclosing would not be heavy.

If by wastes, we are to understand ground capable of improvement, either as arable land, or for pasture, or for planting, but which is suffered to remain in a state of nature; there are large tracts of this kind, particularly in the upland parts of the county, both in the middle and on the north. Though the extent cannot be ascertained with any degree of exactness, I should suppose it cannot be less than 50 or 60 thousand acres.

CHAPTER XII.

Improvements.



SECTION I.

DRAINING.

ON all wet, spongy, or spouty ground, draining is a species of improvement indispensibly necessary. Without this, any other improvement will be of little avail, and the land must continue for ever unproductive, and comparatively useless. This has not escaped the attention of the gentlemen and farmers in Fife; and a good deal has been done this way, by which the value and appearance of the county have been much improved.

Drains from $2\frac{1}{2}$ to 4 feet deep, filled with small stones to within a foot or 18 inches of the surface, and covered with turf, the green side down, or with coarse straw, pob, or ferns, before they are filled up with the earth, are the most common, most approved, and most successful.

On wet bottomed, and fenny or mossy ground, requiring deep drains, they are sometimes filled with thorns, or other brush-wood, for want of

stones. This mode, being cheap, may be useful to a tenant who has only a short lease. But as it cannot be durable or permanent in its effects, it ought to be discouraged, except where stones cannot be got.

In some instances, when stones cannot be procured, the following method has been practised. A cut is made three feet wide, and from two and a half to three feet deep, as circumstances may require. Then along the bottom, and right in the middle of this, another cut is made, a foot or 15 inches deep, 15 inches wide at the top, and a foot wide at the bottom. The sods taken off the surface, if they can be got of a proper thickness, and if the sward be sufficiently tough, are laid at full length across the lower cut, with the green side down, so as to fill the whole width of the upper cut. After which the earth is thrown in and the drain filled up. If the sods, taken from the place where the drain is made, are not answerable, others, proper for the purpose, are taken where they can be most conveniently got. Those are best, which are rendered tough and adhesive by the roots of rushes, bent, or other strong coarse grasses.

Persons, who either have of their own, or can readily procure, the weedings of young plantations, such as are commonly used for pailings, have it in their power to make a very material improvement on this plan. Let the weedings, when from two and a half to three inches diameter, be laid along the middle of the lower cut, supported by pieces of wood of sufficient strength laid across at the distance of six feet from one another, and sunk so far into the

ground, as to form a level bed for the sods. Then let the sods be laid in the way before-mentioned, and the drain filled up. In this way the sods will be supported, and prevented from giving way by any pressure from above, and the drain will of course be rendered more durable and sufficient.

It must be confessed, however, that though draining has been much attended to, the extent to which it has been carried, bears but small proportion to the quantity of land in the county that needs this improvement. But as the necessity and importance of draining must be obvious, and as it has been particularly adverted to by the Board of Agriculture, it is to be hoped that it will be pushed more extensively, and conducted with such skill and spirit, as to render it at once effectual and permanent.

To this, Mr Elkington's principles and mode of draining, adapted to every possible case, exhibited in a late masterly publication by Mr Johnston, will, I have no doubt, greatly contribute, provided the execution be committed to skilful hands. However excellent and effective the plan may be, and however plain and intelligible the directions given; yet, if left entirely to the farmers, to be put in practice, its utility, I am afraid, will be very limited. Many of this class, I believe, have ability to comprehend, and spirit to carry it into effect. But by far the greater number are unequal to the task. There are many men, who are not destitute of parts, and yet, upon a survey of the ground to be drained, and with the plan and directions in their hands, could not exactly tell how to put it in

execution. Under the management of such persons, many mistakes will readily be committed, and much money misapplied. The expence and want of success will discourage them, and induce them to abandon the enterprize. Besides, in many cases, the circumstances of the occupant, or the shortness of his lease, may be such as to render it prudent not to hazard the attempt.

In order, then, to carry this so necessary piece of improvement most speedily and most effectually into execution, instead of putting the plan and directions into the hands of the farmers, and leaving it to them to judge whether or not, or in what manner, they shall execute it; I am humbly of opinion that the proprietors should take the business wholly upon themselves, and employ men of known skill and experience to perform the work; bearing the whole expence in the first instance, at the same time having recourse upon the tenant by a per-centage on the money so expended, more or less, in proportion to the remainder of his lease, and the advantage he may be supposed to reap during that period. In order to lessen the expence as much as possible, it might be proper, on all farms abounding with stones, to oblige the tenants, in the course of dressing and cleaning their fields, to lay down all the stones they collect, if not needed for inclosing, but, if needed for inclosing, all that are small and unfit for that purpose, at the place where the drains are to be made.

To this proposal surely neither party can reasonably object. The proprietors, having the chief interest, ought certainly to be at the ex-

pence, in the first place ; they have a sufficient compensation for their money, during the currency of the existing lease ; and as the improvement, if properly executed, is of a permanent nature, they may expect more than full indemnification by the consequent rise of rent. Neither can the tenant have any objection to pay a reasonable interest for the money, as his profits must be considerable, by the increased value of the ground. In fixing the per-centage, however, payable by the tenant, regard must be had to the quality of the ground, and the period, whether it shall be near or more remote, when the draining may yield him the expected advantages. In this way the improvement of the country is accelerated, and the land put into a state to be let at its full value at the expiration of the current lease.

SECT. II.—PARING AND BURNING.

THIS has been seldom practised. The few instances in which it has been tried, have been, generally, on fenny ground newly drained ; or on land having a mossy surface, where it has always answered expectation.

With respect to the propriety of this practice, different opinions have been held. By some it has been condemned as wasting and destroying the staple of the ground ; and, by others, recommended as an improvement of the first importance. Both opinions, I dare say, have been the result of experiments fairly made, and therefore may be right, so far as experience goes.

But neither the one nor the other can be the foundation of a general rule. All that can be inferred is, that paring and burning is, on some soils, a proper and advantageous improvement; but, on others, injurious and not to be followed. Farmers, therefore, instead of adopting either the one or the other opinion implicitly, should be induced, by this diversity of sentiment, to examine carefully the nature of the soil, and to follow the plan upon such ground only as has been found from experience, or appears to their best judgment, to be suitable.

When the land consists of a thin sward, lying upon a substratum of sand, or gravel, or poor till, I should imagine the practice would be improper. But if the subsoil be a rich clay, or should there be a thick surface of moss, bent, heath, or matted rushes, containing a large proportion of vegetable substance, the practice may be good. It is to be observed, however, that on land of this last description, the application of lime, where it can be had in sufficient quantity, and at a reasonable rate, will supersede the necessity of paring and burning. By subjecting it to a red fallow or to a drilled crop, according as the one or the other shall appear most suitable, all the quick vegetables in the soil will be killed, and a complete liming will hasten the process of their putrefaction. In this way the land will be enriched and prepared for a profitable rotation of crops afterwards, without risking the staple by a dissipation of its vegetable substances by burning. In short, I am humbly of opinion that paring and burning, even in cases where it may be practised with advantage, is on-

ly adviseable when manure is absolutely wanting, or when it can be had only in scanty proportion.

SECT. III — MANURING.

EVERY kind of substance, which, being mixed with the soil, has the effect of rendering it more productive, may be styled a manure. These substances are various, and produce the effect in different ways.

1. Farm-yard dung is the most universal, and, perhaps, the most efficacious and valuable kind of manure that is used. Putrid animal and vegetable substances seem to be the proper food of plants; and, in proportion as the soil contains a greater or a less quantity of these, it is, *cæteris paribus*, more or less fertile. Indeed it is probable that the chief use of artificial manures is to produce and encrease the quantity of this kind.

Wheat, barley, turnips, potatoes, and sometimes beans, are the crops to which the farm-yard dung is usually applied. The quantity allowed to an acre is from 20 to 40 tons, according as it can be spared, or as the state of the land may require.

But though dung be the best of all kinds of manure, and its necessity and utility in fertilizing the soil be generally understood and acknowledged, a due attention does not seem to be always paid to the increase and preservation of it, and, in the application, a want of judgment is frequently to be observed. In collecting and preparing this article, a proper situation

should be chosen for the dung-hill, the size bearing proportion to the farm and stock, rather hollow in the middle, of a close and solid bottom, and surrounded with a stone or turf-wall. In order to preserve the moisture, and encrease the quantity of manure, it would be a good plan to cover the bottom of the dung-pit with moss, earth, scourings of ditches, &c. to the depth of three feet, upon which let the dung be thrown ; and, in order to produce a proper degree of fermentation, and thereby to reduce the straw, and other vegetables mixed with it, to a putrescent state, care should be taken not to compress the dung too much. When fermentation takes place, a considerable quantity of moisture is separated, which will be absorbed and retained by the moss or earth put under, and will convert them into rich manure. A similar device might also be used to take up and retain the water which flows, in large quantities, from the byres, when the cattle are feeding on clover or turnip.

The dung, collected in the straw-yards where the cattle feed, ought to be removed to the dung-hill at certain periods, perhaps once in three weeks, with a view to fermentation, of which it must remain, in a great measure, incapable, whilst it continues to ly in a scattered state, and under the constant tread of the cattle, and, consequently, if carried to the land in this condition, its efficacy, as a manure, must be much less powerful. It is proper, likewise, to turn over the dunghill a few weeks before it be laid on the ground. And, when it is carried out, it ought to be instantly spread and ploughed in. When suffered to remain on the surface, for any length

of time, either in small heaps, or in a scattered state, its nutritive powers will be much diminished by the action of the air. Dung used by itself, as a top-dressing for grass lands, is an unnecessary waste of manure. Half the quantity requisite this way, if intimately mixed with good earth, will be equally effectual.

2d, Lime.—This county abounds with limestone of excellent quality. For a considerable number of years back, lime has been gradually coming into repute as a manure. It is applied, along with dung, to a summer fallow, for a wheat crop. It is used also for turnip, if the land has either never been limed, or limed at a remote period. Sometimes it is laid upon stubble land, if clean, and sometimes on ley ground, with a view to tillage, or on pasture in order to destroy fog, and to restore the grass to its former luxuriance. The quantity allowed to an acre varies according to the quality and condition of the land. A strong, heavy, stiff soil, will require from 50 or 60 to 80 bolls of shells, Linlithgow measure to the acre. On ordinary light land, 30 bolls is reckoned sufficient.

Lime seems to operate as a manure, by converting other substances into food for the plants, or by introducing to them food that is already prepared. Thus lime, by its sceptic quality, when it meets with any vegetable substances mixed with the soil, hastens the process of putrefaction, and reduces it to manure. It has also the effect of loosening and pulverizing the soil, by which means it renders it more easily penetrable by the fertilizing dews and showers of rain; and as the air can more readily enter

and pervade the mould in this state, the nutritive particles it carries along with it, are more readily conveyed to the roots of the plants, whilst they, for the same reason, can more easily spread themselves in every direction in quest of nourishment.

To make lime produce its effect most completely, much attention is necessary as to the mode of applying it. In all cases, it ought to be spread on the ground in as perfect a state of pulverization as possible. The more uniformly, and the more intimately it is mixed with the soil, the greater will its effect be. It frequently happens that the land is not ready to receive the lime, at the time when most convenient for the farmer to bring it home. In that case it is sometimes injudiciously left to be slackened by the air and the rain; in consequence of which it not infrequently happens, that when it comes to be carted to the field, it is found to be concreted into large lumps, or so drenched with water, that it can neither be equally spread, nor made to cover the extent of ground intended. To prevent this inconvenience, as well as loss, the lime-shells, as soon as laid down, ought to receive as much water as will slack them, and then be either covered with turf or straw, or mixed with a sufficient quantity of loose earth; by which means it will be kept in a powdery state, and prevented from running into mortar, or gathering into hard lumps.

When lime is applied to ley ground, designed for tillage, it ought not to be laid on immediately before ploughing, as in that case it will tumble into the bottom of the furrow, and be total-

ly lost. It ought to be spread, at least, a year before the land be broken up; and if it shall lie on the surface two years it will be so much the better, as it will have full time to sink into the sward, and mix with the soil, and, by increasing the quantity of herbage, it will produce a greater quantity of manure, when the land comes to be ploughed. In this way, too, the ground will lose its stiffness, and be more easily broken and pulverized for succeeding crops.

When a turnip crop is intended, the lime is spread upon the land immediately before the drills are formed for sowing. When applied to fallow, or to stubble ground, it is laid on after the seed furrow is given, and harrowed down with the seed. Lime has a tendency to sink, and if it get below the reach of the plough, it cannot be recovered, and the ground derives no further benefit from it. To prevent this, when lime is spread on the surface, it should be tilled in with a thin furrow; and the following year, or whenever the ground is opened again, the plough should go deeper, in order to throw up the lime, and keep it near the surface.

If lime, as a manure, act in the manner above supposed, then it follows that it can be of little or no service to land quite exhausted by over-cropping. Having no vegetable substance remaining in the soil to act upon, it can produce no food for the plants. Nothing but the application of dung will recover land in this state. But land, though naturally poor and unproductive, if it contains any considerable quantity of vegetable substance in or upon it, such as short heath, rushes, coarse bent grass, and the like,

and at the same time is dry, or can be dried, will derive great benefit from lime. When it is ploughed, and the tops and roots of these vegetables are blended and mixed with the soil, and no longer at liberty to vegetate, the lime will convert them into putrescent manure. On the same principle, lime, when applied to peat moss in sufficient quantity, provided the moss be relieved from superabundant moisture, will prove an excellent fertilizer, and in a few years will reduce it to good vegetable mould.

Lime has been justly considered as an alterative, *i. e.* as producing such a change in the soil as to qualify it for the production of vegetables, which it never carried before, and enabling it to send forth its own natural grasses with an improved quality, and in greater abundance. This observation is confirmed by fact and experience. When mossy or heathy ground has been limed, white clover, and other grasses of superior quality have appeared, which were never seen to grow upon it before. Land has been known to yield abundant crops of pease after liming, which before could never, with the best preparation, be made to carry a tolerable crop. Abundance of straw there might sometimes be, but little or no corn. This effect the lime produces, probably, by correcting or removing something in the soil, which prevented the seeds from vegetating, or by preparing and supplying the food peculiarly adapted to their nature, but which, before, they either had not at all, or had not in such plenty as to bring them to any degree of perfection.

This property of lime deserves the particular attention of those who have easy access to it, and at the same time have poor, cold, pasture-ground, carrying nothing but coarse grass, and that in scanty proportion. A good liming would greatly encrease the quantity, and improve the quality of the herbage of such lands, if tolerably dry, and make it support double the number of cattle, that, in its present state, are fed, or rather half starved upon it.

3d, Marle is also a manure used in this country. Its quality and effects are similar to those of lime; but a much larger quantity is necessary. Clay and shell marle are the kinds found here. Little stone marle is to be seen.

4th, Peat and Coal Ashes.—From the great number of towns and villages in Fife, as well as from its great population in general, it may be expected that a very considerable quantity of this kind of manure will be produced. But it is seldom used in an unmixed state. Those who have cows and horses, farmers as well as others, frequently throw their ashes on the dung-hill. Such as have no animal dung, generally mix their ashes with street-soil, scourings of yarn, and any other materials they can find, which they think can either encrease the quantity, or improve the quality of this kind of manure. It is sometimes used by the villagers and cottagers, upon ground which they take for raising potatoes; and it is sometimes purchased by the farmers in the neighbourhood, and used indiscriminately for wheat, barley, turnip, and potatoes.

5th, Sea-weed.—From the great extent of sea-coast which Fife enjoys, this kind of manure is obtained in considerable quantities. It is cast on shore by the waves, especially in the time of high tides, or in stormy weather. When carried to the land, it is usually spread immediately, as allowing it to ly in heaps for any length of time is supposed to lessen its efficacy. It is used for crops of all kinds, and forms a powerful manure; but is reckoned not so lasting in its effect as dung. It is found to be an excellent top-dressing for grass: and, indeed, in every case, it is judged best, to apply it to the surface, without ploughing it down. When spread and exposed to the air, it very soon dissolves and mixes with the soil.

6th, Compost Dung-hills are very common.—This is a good plan for furnishing a supply of manure, when a sufficiency of animal dung cannot be had. They consist of earth, scourings of ditches, road-soil, peat-moss, mossy earth, lime, and dung, and such other kinds of vegetable substances as can be easily got, and otherwise of little use, such as quick roots gathered from the land, ferns, leaves of trees, &c. These are all mixed and turned over repeatedly, and suffered to ly and rot for several months, perhaps a year, before the compost is laid upon the land.

In forming compost dung-hills, consideration should be had to the quality and state of the land for which they are intended. If it be a thin, light, gravelly, or sandy soil, the proportion of earth may be increased to any quantity that can be conveniently got, or carried to the

ground; and it may consist of clay, moss, and good earth of any kind that is not sandy or gravelly. In this case, though the dung-hill may not be rich in proportion to its size, yet, as it will contain the same quantity of lime and dung, and vegetable substances, convertible into dung, and to be spread no farther than if this extraordinary addition of earth had not been made, it will bring upon the ground a sufficient quantity of manure; and at the same time, by the great proportion of earth it contains, it will serve to deepen the soil, and render it more tenacious of moisture. When intended for thick land, and of a good quality, the compost dung-hill need not contain so large a proportion of earth, whilst the same quantity of the richer materials is allowed. When designed for a stiff clay, or mossy soil, instead of clay and moss, which are proper in the first mentioned case, sand and gravelly earth ought to be employed.

Farms, having easy access to lime and peat-moss, can always have plenty of manure. By compounding these in proper proportions, and adding a certain quantity of dung, excellent manure may be formed: the effect of the lime and the juice of the dung being to perfect the putrefaction of the vegetable substances of which the moss is composed.

It may not be improper here to mention the method of making up this compost, as recommended by gentlemen who have made the trial. The lime and moss ought to be in the proportion of one cart-load of the former to five of the latter, and the dung one fourth of the original

compound. When the moss and lime are mixed, the moss ought to be tolerably dry, and the lime new slacked and hot. This mixture, after it has lain three or four months, should be turned over; and in 5 or 6 months after, turned a second time. At this second turning, the dung ought to be added. After having received the dung, it should not lie above three weeks, before it be laid upon the land. In some cases, the natural qualities of the composition may require it to be thrice turned, and to lie twelve months before it be used. Thirty cubical yards of this compound, per acre, will be a sufficient dressing for turnip, and forty for wheat.

SECT. IV.—WEEDING.

WEEDS ought to be considered as robbers; that pilfer the food which is necessary for the support of the more valuable and useful vegetables, and therefore ought by all means to be destroyed. Or if their total extirpation cannot be accomplished, their propagation at least should be checked, and their numbers diminished as much as possible. The weeds most commonly to be met with in this county, and which, at the same time, prove most hurtful to the land, are the thistle, the dock-weed, the rag-weed, wild mustard, and wild raddish, provincially called skellocks, guild, or the wild chrysanthemum, spurry, couch-grass, knot-grass, crowfoot, and some others. To destroy these, and every other noxious weed, summer-fallowing, and horse and hand hoeing, with drilled crops, are

the most common and most effectual methods employed. The thistle, the dock, and other large weeds that appear among growing corns, are either pulled with the hand, or cut with the weed-hook.

It is to be observed, however, that through indolence, or hurry of other business, they are often allowed to escape; and the farmer seldom meddles with them, unless they are caught in the very act of doing mischief. You will see his servants, perhaps, employed in extirpating thistles from his young corns; whilst those that grow by the sides of roads and ditches, or in the neglected corners of the fields, are suffered to remain unmolested. And as the rag-weed most commonly infests the pasture-ground, it is equally disregarded. All kinds of weeds ought, if possible, to be destroyed before they run into seed, but more especially those that carry winged seeds. If these seeds shall be allowed to ripen, they will be scattered by the winds over the whole adjacent fields, and prove the source of more extended mischief.

SECT. V.—WATERING.

THIS method of improving land might, I doubt not, be easily and advantageously employed in many parts of the county; but has seldom, I believe, been practised.

CHAPTER XIII.

Live Stock.



SECTION I.

BLACK CATTLE.

THE county of Fife has been long distinguished by the excellence of its breed of black cattle. The following are considered as the chief characteristic marks. Though the true Fife breed may be found of any colour, the prevailing colour is black; nor are they less esteemed, though spotted or streaked with white, or of a grey colour. The horns are small, white, generally pretty erect, or at least turned up at the points, bending rather forward, and not wide spread like the Lancashire long-horned breed. The bone is small in proportion to the carcass; the limbs clean, but short; and the skin soft. They are wide between the extreme points of the hook bones; the ribs are narrow and wide set, and have a greater curvature than in other kinds, which gives the body a thick round form. They fatten quickly, and fill up well at all the choice points. They are hardy, fleet, and travel well: tame and docile, and excellent for work, whether in the plough or in the cart. When fat,

they bring a much higher price at Smithfield market, than almost any other kind, and are generally selected by the English butcher for the tables of the greatest connoisseurs, and most luxurious of his employers. I have heard an English dealer say, that a Fife bullock of 40 stone, suppose, will bring an equal, and often a higher price at the London market, than an English bullock 10 stone heavier, and equally fat.

The size is very various; and this variety is owing to the difference in the quality of the pasture, and the attention paid in breeding and rearing them. When fed for the butcher, bullocks weigh, in general, from 30 to 50 or 60 Dutch stones. Fed cows and heifers weigh less. A Fife bullock, slaughtered lately in this neighbourhood, weighed, the four quarters, 67 stone 14 lib.; the tongue and braids 1 stone 3 lib. and the hide and tallow 21 stone 3 lib. amounting, in whole, to 90 stone 4 lib. Dutch weight. And it is well known that many of them have been slaughtered, both at home and in the English market, of considerably greater weight. Indeed, by care in rearing and feeding, they may be raised to a size equal to almost any in the kingdom. It is allowed, however, that the small and middle sized cattle make the finest beef. When three years old they are fit to be fed with advantage for the butcher. At 6, and from that to 8 years old, they are judged to be in their greatest perfection, when the richness and delicacy of the meat, and not merely its fatness, is the object.

And as the Fife cattle are in high estimation for the shambles, so they are of equal repute for

the dairy. A good Fife cow will give from 10 to 14 Scots pints of milk per day, (2 Scots pints are nearly equal to an English gallon) from 7 to 9 lib. of butter, and from 10 to 12 libs. of cheese per week, tron-weight, for some months after calving. The quantity, indeed, gradually diminishes in harvest and winter, and especially as the next calving approaches. Yet, as they generally give milk for 10 or 11 months, the quantity just now stated may be considered as the average for 26, perhaps for 28 weeks in the year. It must be confessed, however, that a great many of our cows do not produce so much milk and butter; but this is not owing to any imperfection in respect of kind, but to the less quantity or inferior quality of their food, and in some instances, to misconduct, either in rearing the cows, or in managing the dairy.

The cows are, generally, milked thrice every day. This practice is certainly very proper, as it produces a greater quantity of milk, than when they are drawn only twice a day, and besides, prevents the cow from being fretted and uneasy by an over-distended udder. The milk, when taken from the cow, is usually poured through a wire or woollen search into flat wooden vessels, which are, by most people, thought preferable to earthen or metal ones. The milk is never allowed to be above four or five inches deep in the vessel, which makes it cool sooner, and throw up the cream more readily and more completely. The plunge and patent churns are both in use; the construction of which it is unnecessary to describe, as they are well known almost every where. The cream is churned, either every

day, or every other day, or once in three days, according to the extent of the dairy. It is seldom, however, churned on the day it is taken off the milk; it being understood, that by standing some time longer, the operation of churning is facilitated, and the quantity of butter increased.

On farms in the immediate vicinity of the towns and large villages, the dairy is a principal object; as all the milk and butter can be disposed of with little trouble, and to the best advantage. The milk, if newly drawn from the cow, is sold at 2 d. in summer, and at $2\frac{1}{2}$ d. or 3 d. per pint in winter, and the butter at 1 s. per tron lib at an average. In the more inland parts of the county, and at a distance from towns and villages, though the dairy cannot be supposed to turn to so good account; it may, nevertheless, under careful management, be a very profitable concern. A good Fife cow, fed, partly on rich pasture, and partly on green clover in the house, during summer, and on turnip and other green vegetables, such as potatoes, cabbage, or open kail, in winter, will yield 7 lib. of butter, and 12 lib. of cheese per week, for 26 weeks in the year, which, supposing the butter 1 s. at an average, and the cheese 4 d. per lib., and the value of the whey, either sold, or used for domestic purposes, at 1 s. per week, will amount to 12 s. per week: to this add 12 s. for the calf when new dropt, and the yearly produce of the cow will amount to 16 l. 4 s.

The following statement will shew the advantage that may be derived from a dairy, supposing the cows of the best kind, and the dairy under proper management:

	£.	s.	d.
Let the number of cows be 12, the annual produce, according to the above calculation will amount to	194	8	0
Value of the dung	15	0	0
	<hr/>		
	209	8	0

The expence of feeding, &c. will stand thus :

	£.	s.	d.
12 acres of good pasture, at 40s. per acre	24	0	0
4 acres clover, for summer food, at 6l. per acre	24	0	0
5 acres turnip, for winter, at 4l.	20	0	0
900 stones of hay, at 5d. per stone	18	15	0
900 stones of straw, at 3d. per stone	11	5	0
To a man and woman for taking care of cows and managing the dairy	28	0	0
Interest of money laid out in purchasing the cows, and for keeping up the the stock, and incidents	20	0	0
	<hr/>		
	146	0	0
	<hr/>		
	L.	63	8 0

By this calculation the neat profits of a dairy of 12 cows amounts to 63l. 8s., which is a trifle more than five guineas a-head. This, however, may be thought to be no very great sum from such a number of the best cows, so highly fed. But it must be considered that the profit above stated is not the only advantage arising from the dairy. Besides the benefit of having his grass and hay, &c. consumed upon his own farm, the farmer reaps the full value which these articles would bring at market, and to which he looks, in the first instance, for the payment of his rent, and defraying the expence of management. The dairy may, therefore, be regarded as a distinct concern, and the produce of it as additional

gain. In short, by converting his grass and hay into butter and cheese, he draws a much higher price for them, and reaps more clear profit than he could possibly do by disposing of them any other way.

Some intelligent farmers, to whom the above statement has been mentioned, are of opinion that I have rated the profits of a dairy too high. But, upon reconsidering the matter, I find no reason to depart from my opinion. The calculation proceeds upon the supposition, that the cows are of the very best kind; that they are highly fed, and, particularly, that they have plenty of green food, during the whole time they give milk; that the dairy is furnished with every necessary convenience, and managed with all possible economy and care.

It has also been suggested, that one woman is not sufficient for the management of so large a dairy, and, therefore, that I ought to have charged for two. I well know, that, for the sake of dispatch, and to have every thing done in proper time, the dairy maid will have occasion for frequent assistance, especially in milking the cows. But the time which she and the man will be able to spare from their proper business for other work through the year, will amply repay this occasional assistance.

It may be thought that the sum allowed for the interest of money laid out in purchasing the cows, keeping up the stock, &c. is too small. But to balance this, it is to be noticed, that nothing is charged for the old stock. The cows, after they are judged unfit to be kept any longer as milkers, will bring a good price from the gra-

sier, to be laid on grass, and fattened for the butcher.

But how profitable soever a good dairy may be, there are but few instances where it is considered as a leading object, or where the farmer counts much upon its produce. Upon extensive arable farms, of rich quality, and productive of abundant crops of grain, we often see not above 5 or 6 milk cows, the produce of which, after feeding their own calves, and perhaps a few more bought in, and supplying the family with butter and cheese, can spare but little for the market.

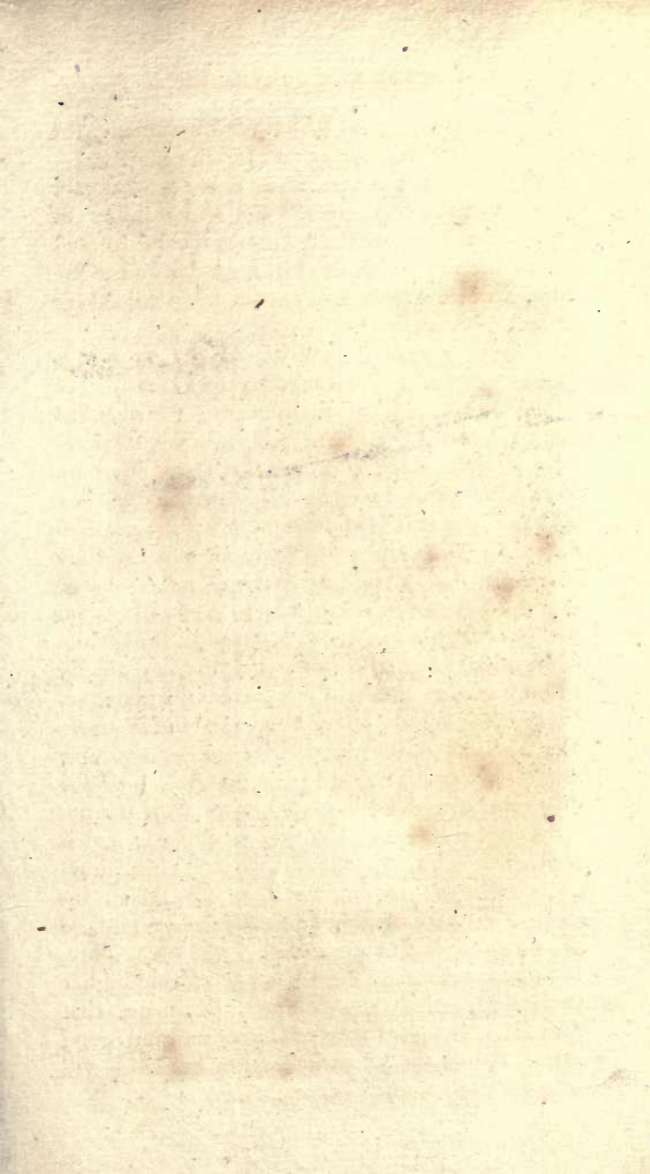
On farms principally adapted to breeding and rearing cattle, the dairy, though not altogether overlooked, is but a secondary object. Such a number of cows are usually kept, as may be necessary for feeding the quantity of young stock the farmer means to bring up. Additional to the produce of his own breeders, he frequently purchases calves from the cottagers, and from others, who do not incline, or who have not convenience, to rear them. The calves are generally fed from the bucket, and are allowed five or six Scots pints of milk every day. Sometimes, when there is a deficiency of milk, hay-tea, or water-gruel, mixed with a small proportion of milk, is given for their mid-day food. Calves are allowed milk, till they be 10 or 12 weeks old. And, as farmers seldom choose to rear late calves, they are at liberty to apply the whole milk, from the middle or end of July, to the purpose of making butter and cheese; and where there is any considerable number of

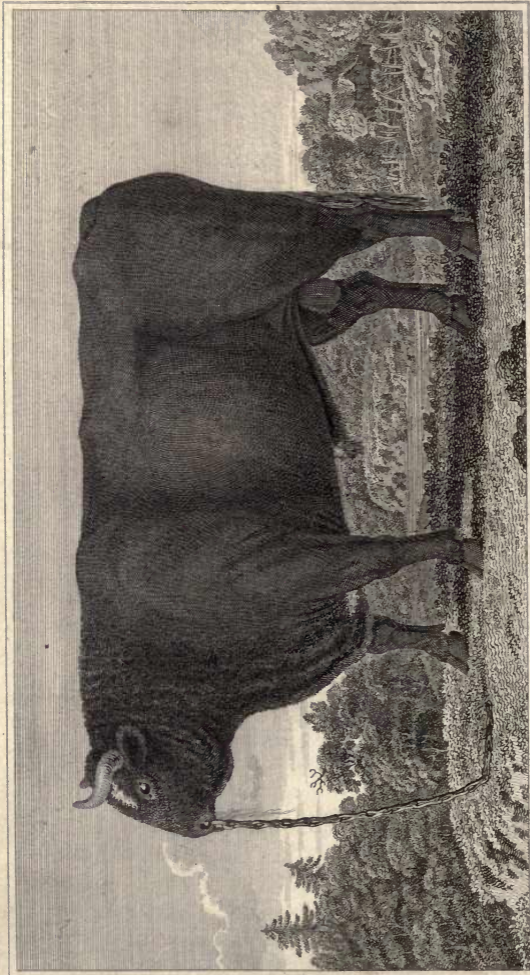
cows, a large quantity of both is often made, for the supply of the family and for the market.

There are, however, some farmers who pay attention to both objects. As the number of cows they keep are more than sufficient to feed the calves they wish to rear, regard is had to the dairy from the first, and considerable advantage is derived from it.

Though a great proportion of the county is chiefly adapted to the breeding and rearing of young stock, a great many cattle are also fed for the butcher. Those who follow this practice, do not depend upon the stock bred by themselves; but buy in such a quantity as they want, in the spring, fatten them on the grass in summer; and dispose of them as soon as they are fit for slaughter. After which a fresh cargo is purchased for winter, which they fatten on turnip with hay or straw, and sell in the spring.

Besides the true Fife breed, which are chiefly to be found in the hands of actual farmers, several other kinds have been introduced from England and other places. These last are most commonly to be found in the possession of the gentlemen, and by crossing them with the natives, a mixed breed has been produced, and is now very plenty in the county. This, however, with submission, has hurt the breed, instead of improving it. These foreign and mixed breeds can boast of no quality, which the pure, unmixed native stock does not possess in higher perfection, with this peculiar advantage, that they have always a ready sale, and bring good prices, when the purchasers from England will scarcely offer money for the other.





Engr'd by R. Brown.

Drawn by W. Dringler.

FIFE BULL.

There was lately in the possession of the Earl of Leven, a bull of the true Fife breed, which was bred by Mr Robert Russel, in Newton of Markinch, one of his Lordship's tenants, an engraving of which is prefixed. He was esteemed a very complete animal, possessing all the properties for which the Fife breed is so much admired by the English drovers. An exact measurement of him was taken, at the desire of the FIFE FARMING SOCIETY, by two of its members, and is as follows :

	<i>Fect.</i>	<i>Inches.</i>
Length of the head - - - - -	2	0
Ditto from the root of the horn to the rump -	8	4
Ditto from the root of the horn to the top of the shoulder - - - - -	2	6 $\frac{1}{2}$
Ditto of the horn - - - - -	1	0 $\frac{1}{2}$
Distance from point to point of ditto - - -	1	10
Girth of the body at the shoulder - - - - -	7	6 $\frac{1}{2}$
Ditto before the hough bones - - - - -	7	8 $\frac{1}{4}$
Ditto fore-leg smallest part, between the knee and hoof - - - - -	0	9 $\frac{3}{4}$
Ditto hinder-leg at ditto - - - - -	0	9 $\frac{1}{2}$
Ditto fore-leg at fore spald - - - - -	2	0
Height at the shoulder - - - - -	4	11
Ditto at the hough bone - - - - -	4	11
Ditto from the shoulder to the breast bone -	3	6
Ditto of the knee joint fore-leg - - - - -	1	0 $\frac{1}{2}$
Breadth of the hough boues - - - - -	2	2
Ditto of the are-bones - - - - -	1	4 $\frac{1}{2}$

In short, if what has been said, respecting the Fife breed of black cattle, be just, it follows, that all foreign and mixed kinds should be extirpated as fast as possible, and that our farmers ought to confine themselves entirely to the native stock. And I have no scruple to say, that if our own breed were kept pure and unmixed ;

if, in rearing, proper care were taken to select the handsomest both of males and females for breeders; and were the same attention paid to feeding and management, that there is in the breeding counties in England, excellent as our breed is at present it would soon be carried to a much higher degree of perfection; the folly of introducing foreign and different kinds, and of spoiling our own by crossing, would become more apparent; and the practice, at last, be entirely abandoned.

The number of milk cows in Fife may amount to 10,000; and the whole stock of black cattle annually kept, including lean cattle and others brought from other counties by graziers, may amount to, perhaps exceed, 60,000.

The price of cattle has, for the last 5 or 6 years, been on the rise; and though not so high this year, as during the last 2 or 3 years, still they bring a good price. It is difficult, perhaps impossible, to state the prices with such precision, as to render them intelligible to any except such as are much conversant with the subject. From 3 years old and upwards, the price varies from 5*l.* to 20*l.* according as they differ in age, weight, kind, or condition. The following average-prices for the last 3 or 4 years, may not be far from the truth.

	£.	s.	to	£.	s.
A calf properly fed for the butcher, 6 weeks old, from	1	5	to	2	2
If kept for rearing, and sold at 10 or 12 months old	3	0	to	4	0
When 2½ years old, and sold fat	4	0	to	5	0
When 3 years old, and kept for breeding, or to be laid on the grass to fatten	5	0	to	6	6

When 3½ years old, and fat for the butcher	7 0	to	8 0
Four years old, and full grown	8 0	to	10 0
Milk cows at the calving, from 2 to 8 years old	9 0	to	12 0
Oxen 3 or 4 years old, and lean	8 10	to	10 10
Ditto 5 or 6 years old, and fat	12 12	to	18 18
Oxen, after having been some years in the yoke, have been sold, when 7 or 8 years old, to the English dealers, at the end of the season, when half fed, to be fattened the ensuing winter on turnip for slaughter, as high per head as	20 0	to	0 0

SECT. II.—SHEEP.

ANCIENTLY, sheep formed a considerable part of the live-stock of this county. Every farmer almost kept a quantity, which fed with his cows in summer, and in winter ranged in common over the whole country. But when the system of husbandry came to be changed; when the culture of wheat became more general; clover and rye-grass more commonly sown, and the lands, at the same time, continuing open and exposed, or the thorn-fences young, and therefore ready to be checked in their growth, or entirely destroyed, by the sheep, (for the wool of sheep is fatal to thorns,) their numbers greatly decreased, and now few, comparatively speaking, remain. There are no flocks, perhaps, consisting of above 300 or 400 in the possession of one man; and few nearly so numerous. These are chiefly to be met with on the Lomond-hills, the high-grounds on the north, on Eden's-muir; and on the Downs, in the parish of Leuchars, commonly called the *Tents-Moors*. Besides, many of the gentlemen, and some of the

principal farmers, keep a few, principally for the use of their own families; and some, who have a taste for that kind of stock, and convenience for feeding them, keep more, and what they do not use, they sell to the butcher. Some gentlemen-farmers and others, follow the practice of purchasing annually in the spring, a few scores of great ewes, or ewes with young, for the most part of the black-faced kind. These they lay on good pasture; the lambs they dispose of, in the course of the summer, to the butcher, and the ewes at the end of the season.

The old Fife breed is of a small size, the carcase when fat, seldom weighing above 24 or 26 lib. tron. They are generally horned and white-faced, and carry a scanty, coarse, open fleece.

The Earl of Leven has a flock consisting of about 300, which was originally of this kind. But by crossing them with the Beckwell-ram, has brought them to an astonishing degree of perfection. Their weight is fully doubled, and the wool greatly improved both in quantity and quality, and sells usually at 20 s. per stone. His Lordship, some years ago, procured a Spanish ram, with a view to the improvement of the flock. The effect has been, that the wool is so much finer, as to bring the price 4 s. per stone higher. I do not think, however, that it has made any improvement upon either the size or the shape of the animal, or bettered the quality of the mutton.

SECT. III.—HORSES, &c.

ABOUT 30 years ago, the breed of horses in this county was of a small kind, and generally as unsightly to the eye as unfit for the saddle, or for the purposes of husbandry. Since that time, however, they have been much improved. Several individuals, whether induced by taste, or prompted by views of interest, have distinguished themselves by their attention to this object, and can produce horses of their own breeding, inferior to few, either for the saddle or for the draught. But though this be the case, in some instances, it is far from being general. Still there is much room for improvement. And as our present breed of horses excel only in proportion as they deviate from the original breed, the best horses and mares from England should be encouraged, which, by mixing with our present improved breed, would soon put us on a footing with such of our neighbours as are most eminent in this respect. And this is of the greater consequence, as breeding horses for sale, is now become an object of some attention; the beneficial effects of which will be in proportion to the improvements made on the breed.

With respect to the use of horses in husbandry, when compared with oxen, upon conversing with actual farmers, I find there is a diversity of opinion. They who give the preference to horses, contend that they can be more universally useful, and perform the work more expeditiously than oxen; that on land, where the plough may be endangered by unseen checks and interruptions, the horses will instantly stop

when they feel the obstruction ; whereas oxen press forward, to the risk of breaking the plough or the harness ; that, admitting the feeding of the oxen to be less expensive than that of horses, a greater number, in the proportion of at least three to two, will be requisite to perform the same work ; and consequently, a greater number of servants must be kept to work them, the additional expence of which will more than balance any profit that may arise from the cheaper keeping of the cattle.

They, who take the side of the oxen, affirm, that there is not such a remarkable difference between horses and cattle, in respect either of alertness, or of the quantity of work they can perform, as has been alleged : That oxen can be trained to stop as readily as horses, when any dangerous interruption comes in the way ; that they can be kept at a much cheaper rate, little or no corn being necessary when they are under proper management ; in short, that they are liable to fewer distempers, and, when old or disqualified for labour, are much more valuable.

If the question is to be decided by general opinion, I suspect the decision will be in favour of the horses. There are still some, it is true, who continue to use oxen in the operations of husbandry. But the instances of such are comparatively few. There is not, perhaps, one ox employed at present in the plough or cart, for ten that were used twenty years ago. The horses, at and before that period, were much inferior to the present breed ; and it is observable, that in proportion as the breed of horses

has been improved, the use of cattle has gradually declined ; to which we may add another fact equally remarkable, that those, who have quitted oxen for horses, have never given up the horses and returned to the oxen again.

This matter, I should apprehend, might be easily compromised. It will be granted, that, in no instance, the use of oxen in agriculture, to the total exclusion of horses, would be proper. On every farm, some necessary services will be found, which horses can perform to much better purpose than oxen. When the farms are small, and can be wrought with one plough, horses only should be kept. When two ploughs are requisite, the labour may be divided between the horses and the cattle. And on all extensive farms, consisting of four, five, or six plough-gates, and upwards, two, or at least one yoke of oxen, may be kept solely for the plough, and as many more as may be necessary to take the chief burden of the carriages, for which they are allowed to be, in general, as fit as the horses. As this last mentioned service may not require the whole time and labour of the oxen, the farmer will have it in his power to apply them occasionally to the plough, when bad weather or other unfavourable circumstances, may have thrown that part of his work behind. Besides, having both horses and cattle at his command, he can always employ the oxen where the land is capable of the easiest tillage, and consequently, need never be under the necessity of yoking more than a single pair in one plough at a time. In this way, the farmer will be enabled to carry on his operations with suf-

ficient dispatch, and at the same time, save whatever difference of expence there may be between the plan of keeping a full complement of horses, and the partial substitution of cattle, in the way above proposed.

But whatever become of the general question, when the subject comes to be considered with a reference to particular cases, the propriety or impropriety of the measure, will be more easily ascertained. When the farmer has no other purpose, in breeding, or buying in cattle, but for their labour: When the species, he employs, have a natural sluggishness and inactivity, which cannot be overcome; or when his farm has little pasture-ground, or is otherwise so circumstanced as to oblige him to feed his cattle at a very expensive rate, he may, with some shew of reason, question the eligibility of the plan. But on farms where there is plenty of pasture, and where breeding and rearing cattle for the market forms a part of the farmer's system, the propriety of the measure cannot be so easily disputed. Of his young stock he can select such as he judges most proper for the purpose, train them betimes to the yoke, work them for several years with very little extraordinary expence, and then dispose of them at the same price as if they had never been in the yoke. In this county the practice seems peculiarly proper, not only as it is a breeding county, but because the Fife cattle are hardy, active, and tractable, and if due care be taken in training them, they may be made to go almost, perhaps altogether, as quickly, and perform as much work as horses.

I shall only observe further, that when oxen are used for labour, especially in the cart, they ought to be shod and harnessed in the same manner as horses. This will enable them to travel more expeditiously and more pleasantly, and to endure more fatigue with less injury to themselves.

SECT. IV.—HOGS.

NOT many years ago the flesh of this animal was generally disliked by the lower classes of the people, and therefore very few hogs were reared. But that aversion has been gradually overcome, and they are now to be met with in considerable numbers through the whole county. The greatest quantities are bred and fattened by distillers. The mills, too, being numerous, and affording a cheap and plentiful supply of food for them, a great many are bred by the mill-masters and their millers. Few gentlemen want them. They are to be seen about almost every farm-house. Even cottagers either breed them, or purchase them when young from those who do, and feed them for their own use, and sometimes for sale. Of late the demand has been so great, that pigs of 5 or 6 weeks old sell from 8s. to 12s. a-head, according as they are of a smaller or a larger kind.

But though this species of live-stock be very plentiful in Fife, few or none prosecute the rearing of it as a principal or leading object. Hence it is that we do not find the same attention paid

either to kind, or to the mode of feeding, that is shewn in many parts of England.

The principal advantage attending the breeding of swine arises from the cheapness of their food. There are many articles upon which they can live and thrive, nay, of which they are extremely fond, but which would otherwise be of little use, or at least could not be consumed to such good purpose any other way; such as the grains of malt from the distilleries and breweries, the refuse of the garden, the offals of the kitchen and dairy, and most kinds of weeds and rank foul grass which other animals will not taste.

When they are fattened for slaughter, the usual method is to give them, for some weeks before they are killed, boiled oats, or the meal of oats or pease mixed with boiled potatoes, increasing the proportion of meal, and lessening that of the potatoes as the time of killing approaches. In many instances, however, this attention in feeding is not paid. Often they receive little else than potatoes additional to their common food; and even in this way are made abundantly fat, though the pork may not be so solid or well flavoured.

They are killed at different ages, the greater part, perhaps, at and below a year old: and they are found of all different weights, from 6 to 16 or 18 stones, 22 lib. averdupoise to the stone.

SECT. V.—RABBITS.

RABBITS are bred in considerable numbers on the extensive links and sand-banks along the shore, and on several tracts of sandy ground in the more inland parts of the county. But though they are esteemed delicate eating, and valuable for their skins, few consider them as an object of importance, or attend to them with a view to gain.

SECT. VI.—POULTRY.

IN Fife there is abundance of all kinds of poultry. Geese and Turkeys are to be seen chiefly about the houses of the gentry, and of some of the principal farmers. They are bred principally for private use: few are brought to the market. Ducks are bred more generally. Not only gentlemen and farmers, but cottagers also, where ever there is convenience, rear them. They are easily brought up, not expensive in feeding, and do less damage, perhaps, than any other domestic fowl. But the dunghill fowl is most universally bred, and is of all the most profitable. When properly fed, it is delicate eating. The eggs form a part of the food of all classes; and such as don't chuse to consume them in their own families, find a ready market for them, and a good price. As a proof of the high estimation in which this species of poultry is held by persons of taste, the tenants have been, for time immemorial, and still continue to be,

bound in their leases, to pay to the landlord a certain number of hens and chickens every year. No cottager is without his breed of hens; and whilst he preserves his number of breeders, he sells the rest, and such a proportion of the eggs, as he does not use in his family. The fowls and eggs are generally sold to the inhabitants of the towns within the county; and some are carried to the Edinburgh market, by persons who make a business of collecting them for that purpose. The peacock, and Guinea fowl, are likewise to be seen about gentlemens houses; but they are kept rather as ornamental birds, and seldom appear at table.

SECT. VII.—PIGEONS.

PIGEONS, however much esteemed as an article of food, and however ready and convenient a dish they may afford to the table, are justly reckoned a great nuisance to the country at large. There are, in this county, not fewer, perhaps, than 360 pigeon cotes, which may contain 36,000 pairs of breeders. They make dreadful havock among the grain, particularly the wheat and pease, in sowing and harvesting time, and are supposed to consume not less than between 3,000 and 4,000 bolls of grain annually.

But if the damage done by pigeons to the community be so great, it is surely natural to enquire what the profit is which they bring to individuals, and whether that profit will balance the mischief they occasion. The value of a pigeon cote cannot be estimated at more than

5 l. yearly. Many of them are not worth so much. I know some gentlemen, who have two or three pigeon cotes in their possession, which never yield them 200 pairs in a year. The value of their annual produce, therefore, must fall short of the value of the grain they consume, to the amount of nearly 2,000 l. If, then, the advantages derived from this species of property must be purchased at such an extensive rate, must not this be a good reason, if not for their total extirpation, at least for diminishing their numbers?

It is some consolation to the farmers, however, that pigeons are not now so plentiful as formerly. Gentlemen seem not to set so high a value upon this species of stock as they once did. Many of the pigeon houses have been suffered to go to ruin. Proper attention is not always paid to keep them in repair, and this is a temptation to the pigeons to desert them. Even those which are kept in good order, are not in general so rich and well stocked as they once were. This circumstance has been imputed by some to the pickled wheat which they devour at the time of sowing. Cramming themselves full of grain soaked with brine, and crusted round with lime, may have the effect, it is supposed, of killing many of them.

SECT. VIII.—BEES.

IN the garden of almost every gentleman, a few hives of bees are to be seen. Some of the farmers also, and many of the tradesmen and mechanics keep them. But the breeding of them is attended to by no individual as a business. Few ever keep above six stock hives; and the greater part not so many. Whether from the want of skill in the management, or from climate or other local disadvantages, I pretend not to say; but the propagation of this useful insect is considered here as a precarious business, and seldom productive of much profit.

CHAPTER XIV.

Rural Economy.



SECTION I.

LABOUR.

THE variety of manufactures carried on in this county, and their flourishing condition, have had the effect of producing a scarcity of farm-servants and labourers. The price of every kind of rural labour has, of consequence, risen to a remarkable height. Within the last 30 or 40 years the wages of servants, and others employed in the operations of husbandry, have advanced not less than a hundred per cent; two-thirds of which rise may be placed to the account of the last nine or ten years.

Farm-servants, if married, have a free house and garden ground sufficient for his family, from 6l. to 8l. of money, $6\frac{1}{2}$ bolls of meal, a cow's grass, and some other perquisites, such as a few potatoes planted, or some lint sown, the amount of all which may run from 16l. to 18l. If he be unmarried, and live in the family, he has from 8l. to 12l. of wages yearly, more or less

according to his qualifications, or the station he occupies, besides his victuals in his master's house.

Labourers get from 1 s. to 1 s. 6d. per day in summer, and 2d. or 3d. less in winter. Both the hired servant and day-labourer commence work, in summer, at 6 o'clock in the morning; and, being allowed two hours intermission, usually dispatch breakfast, and take their rest chiefly in the middle of the day. They cease working at 6 o'clock in the evening. Hired servants, however, do not consider themselves as entitled to quit work invariably at that hour; as circumstances must occur which will render it necessary for them to be occasionally employed at earlier and later hours. In winter, labour commences and ends with day light. The wages of maid-servants are from 3l. to 4l. per annum.

Men hired for harvest get from 25 s. to 30 s., and their victuals; and the women from 20 s. to 25 s. On the north of the Eden, reapers wages are considerably higher, owing to the scarcity of villages and cottages in that district. There the men usually get from 30s. to 2l. 2s.; and the women from 25 s. to 30 s. When hired by the day a man's wages is from 1 s. to 1 s. 6d., and a woman's from 10d. to 1 s., with victuals. They work generally from sun-rising to sun-setting. In some places where there are small farms or pendicles, in the neighbourhood of villages, the reapers do not begin till after breakfast. They rest an hour at dinner, and quit work at 6 o'clock, or sunset. In this case the men have 1 s. per day, and the women 10d., but no supper. Bread and beer is the usual din-

ner. They are allowed each an oaten loaf, ten or twelve of which are made from the peck, and an English quart of beer. This they consider as at once a sufficient and a wholesome meal; and as they can perform their work upon this kind of diet, with more ease and alertness than any other, so the farmer finds it the least troublesome and most convenient to provide.

Working by the piece is not a general practice; though in many kinds of work it is the most eligible plan. As it proves a stimulus to exertion, it is more profitable to the labourer; and while it gives the employer the advantage of having his work executed with dispatch, it increases the quantity of productive labour in the country, and therefore must be a benefit to the community at large.

But though working by the piece be not a general, it is a frequent, practice. And the following are the usual rates, in those cases where it takes place. Wheat is threshed at 1 s., and oats and barley at 8 d. per boll. Hedging and ditching at 10 d. per rood of six yards, the ditch five feet wide. Hay is cut at from 2 s. 6 d. to 5 s. per Scots acre, more or less, as the crop is heavy or light, is laid and entangled by the weather, or stands fair. Smith-work is always done by the piece; shoeing horses at 2 s. per set, when the iron is furnished by the smith; but when the iron is furnished by the employer, at 10 d. per set; and for each remove, $1\frac{1}{2}$ d., the smith affording the nails. Cart-wheels are ringed and mounted at 7 s. 6 d. per pair, the iron by the employer. Plough-work is done

either for a certain quantity of victual yearly, the iron furnished by the employer, or by the weight of the wrought iron, when furnished by the smith. The iron-work rates, if coarse, at 5 d., and if fine, at 6 d. per lib.

SECT. II.—PROVISIONS.

FROM the great progress which agriculture has lately made, and from the fertility of the cultivated grounds, the produce, taking every kind of grain into the account, is, in general, more than sufficient to supply the inhabitants. The culture of oats, it is true, is not so extensive as to furnish a sufficiency of oat-meal, especially as the consumption of oats by horses, has, of late years, greatly encreased. Every year, therefore, there is a considerable importation of this article. But this deficiency is more than balanced by the great annual exportation of wheat and barley and beans. The prices will appear from the following state of the *Fiars* for the last 10 years.

The markets are, in general, well supplied with butcher meat of all kinds. Of these, beef is the most common and plentiful. The cattle slaughtered for the market, are mostly reared and fattened in the county, and, in point of quality, equal perhaps to any in the kingdom. The veal is, in general, tolerable, but not plenty; and, in rare instances, is it to be found completely fed. There is also abundance of excellent mutton and lamb, partly the produce of the county, and partly brought from other parts of the kingdom. Besides the hogs slaughtered for the public markets, a great number are killed by private families. Of late, pork has become a very common article of food among the lower classes of the people.

The price of butcher-meat has risen, within the last eight or ten years, at least 50 or 60 per cent. Though poultry of all kinds are reared in abundance, from our vicinity to the metropolis, and the growth of luxury, the price has greatly advanced. Fowls, which sold within these last 10 or 12 years, at 7 d., and from that to 9 d., now bring from 1 s. to 1 s. 4 d. Geese, turkeys, and ducks, in proportion. Eggs are risen from 2 d. and 3 d. to 4 d. and 6 d. per dozen.

Besides having plenty of butcher-meat and poultry, the county is generally well supplied with fish of various kinds,—with salmon from Leven, Newburgh, St Andrews, Perth, and Stirling; trout, pike, perch, &c. from the inland streams; and from the friths, with white fish, such as haddocks, whittings, cod, turbot, scate, flounders, and shell-fish, such as lobsters, crabs,

mussels, cockles, &c. For some years past, the herring-fishing in the Frith of Forth, upon the south coast, has been very successful. This, as furnishing a cheap article of provision, and at the same time giving employment to a great number of hands, has proved highly beneficial to Fife, as well as to the other adjacent counties. The fishing usually commences about the middle or end of October, and continues for 10 or 12 weeks. Besides the immense quantities that are cured for exportation, a constant and regular supply is conveyed to every part of the county, during the whole fishing season, and sold frequently as low as 10 d. or 1 s. per long hundred of 132. They are used and much liked by all ranks; and particularly are a great blessing to the lower classes, as, when used with potatoes, they afford a cheap and wholesome meal. Besides those that are consumed fresh, considerable quantities are salted by different individuals for future use.

SECT. III.—FUEL.

FROM the account formerly given of the coal-works in Fife, it is evident that the county must have a constant and abundant supply of this article. The price varies in different places from 4 s. 6 d. to 7 s. 6 d. per ton, at the pit-mouth, according to the quality of the coal, and the convenience of situation. On the north side of the county, where no coal is to be found, the carriage and tolls add greatly to the original price. In many places, where the people hire the car-

riage, the cost of the coals, when laid down at their door, is not under 13s. 6d. per ton. They are, sometimes, brought round by water; but the advantage arising from this is not very material, except to those who reside upon, or very near the shore. The quantity consumed annually in Fife may amount to 160,000 tons.

Besides coal, peat is to be had in many parts of the county: but, except by those who live in the immediate neighbourhood of the mosses, peat is seldom used as ordinary fuel. The expence, and the waste of time necessary in digging, drying, and carrying them home, besides the risk of their being rendered unfit for use by rainy seasons, must ever prevent the general use of this kind of fuel, in a country where coal can be got at a moderate price. There are, however, considerable quantities used for kindling fires and drying grain.

Wood is seldom used as fuel: indeed the county is too scantily supplied with this article, to admit of its being used in any quantity for that purpose.

CHAPTER XV.

*Political Economy, as connected with, or affecting
Agriculture.*



SECTION II.

ROADS.

NOT twenty years ago, the roads in Fife were in a very wretched state. In many parts of the county, where roads were evidently necessary, not only for the safety of passengers, but for the convenience of the neighbourhood, none were to be seen, except such tracts as had been formed by the occasional tread of horses, the wheels of carts, or the footsteps of the traveller. Even the great roads, to which the principal attention had been paid, were, for the most part, intolerable, and, during winter, in many places almost impassable, being unskilfully made, and kept in bad repair.

The neglect of an object of so much importance, must appear surprising, when the state and circumstances of the county, in other respects, are considered. Fife had been long remarkable for its great population, and the numerous thriving villages it contained. A large proportion of

the proprietors were resident; and the more opulent generally kept carriages. Carts and wains were become very common. Manufactures were in a flourishing condition, and carried on to a considerable extent. And a spirit and taste for improvements in agriculture had appeared and diffused themselves among many of both the gentlemen and the farmers. Besides, Fife was the great thoroughfare between the Metropolis and some of the principal towns in the north of Scotland, particularly Perth and Dundee. Must it not then appear unaccountable, that, though good roads have ever been deemed a first step of improvement in any country, and, indeed, an essential requisite to improvements of every other kind, they should have been so long and so totally neglected.

An act of Parliament, it is true, was obtained in the 26th of the reign of the late King, and another in the 12th of his present Majesty, for making and repairing certain roads in Fife. But the operation of these acts was very limited, being confined chiefly to the western district of the county. The sum arising from the assessment of 20 s. Scots upon every 100 l. Scots of valued rent in the county, for repairing roads and bridges, was too trifling to produce any perceptible effect. Even the benefit of the statute-labour was, in a great measure, lost, through the want of judgment and economy in the application of it.

At last, however, the state of the roads came to be an object of serious consideration, not only as an evil that could no longer be suffered, but as disgraceful to a county so opulent and flourishing. In the year 1790, the gentlemen

applied for and obtained an act of Parliament, with such extensive powers as might enable them to apply an immediate and effectual remedy. In this act all the different lines of road, intended to be made and repaired, are particularly pointed out. The trustees are empowered to borrow to the amount of 16,000 l. for defraying the expences. Toll-gates are ordained to be erected, wherever it shall be judged proper, but not nearer each other than 6 miles, and the rates leviabie from passengers at the several bars are specially fixed. It would be unnecessary here to mention particularly the several lines of road, the whole powers of the trustees, and all the different provisions made in act: these, every person, who wishes for information, may know, by having recourse to the act itself. I shall only observe, that this act hath been carried into effect with much spirit and judgment: and though some of the less important roads are yet unfinished; and though the roads, in general, may not yet be brought to such a complete state, as could be wished, and may be designed, a very great and happy change is observable, and the most serious causes of complaint, so far at least as the great roads are concerned, are removed.

In the progress of this business, however, the trustees, finding that their powers were too limited for the complete accomplishment of the object of this act; and also, that the making and repairing of several other roads would be highly advantageous to the public, resolved to apply for further aid from Parliament. Accordingly, in 1797, an act was obtained for enlarging the terms and powers of the former act, by which

they are enabled to encrease the number of toll-gates, and the amount of the duties; and to borrow further sums on the credit thereof; and also, to make the additional roads specified in the act. There is also a clause introduced into this act, calculated to obviate an inconvenience felt under the other. The trustees were authorised, when they should borrow money for the roads, to assign the duties of the toll-bars of the particular district for which the money was borrowed, as security to the lender. But no provision was made for the conveyance of this assignation, and the trustees were not obliged to give their own personal obligation for the money. The consequence was, that when the lender found it necessary to lift his money, he was obliged to take possession of the tolls assigned to him, and to draw the whole duties, until both principal and interest should be paid. Such a tedious and inconvenient mode of obtaining payment, discouraged people from lending money on such security. Under this new act, however, the assignations of the toll-duties are made transferable by a simple indorsation. And, therefore, as the security is perfectly good, any person, who has money to spare, will the more readily lend it on this footing, as he knows he can transfer at any time, when he finds the repayment of his money necessary.

But notwithstanding the ample powers already granted, for making and repairing the high roads, the trustees apprehended that they might still be insufficient, and were of opinion, that if the whole statute-labour of the county were converted, upon equitable terms, into payments of money, in place of the present services,

and powers granted to borrow money to a certain amount, upon the credit of the produce of such conversion, they would be enabled to accomplish the design with more expedition, and with more complete effect. Application was, therefore, made to Parliament in the same year 1797, and a separate act obtained, entitled, an Act for regulating and converting the statute labour in the county of Fife, and for more effectually making and repairing the high-ways in the said county.

As this is an act, in which every individual in the county is particularly interested, it may not be improper here, to give a short abstract of it.

By the act, the county is divided into four districts; viz. Cupar, St Andrews, Kirkaldy, and Dunfermline. Trustees are appointed of the same description with those in former acts of this kind. The particular times of their annual district, and general meetings are fixed, and lists of roads are ordered to be made up for each parish, where they shall appear to be most necessary, and to which the funds ought, in the first instance, to be applied.

In the conversion of the statute-labour, it is enacted, that a plough gate shall be deemed equal to 50 acres of land, whether plantation, arable, or pasture-ground; or, in the option of the proprietor, to 70 l. of gross-rent, payable by the occupier; that 20 s. shall be the maximum of conversion for a plough-gate; the same sum for every chaise with four wheels, drawn by two horses, and let for hire; 10 s. for every chaise with two wheels, drawn by one horse and let for hire; 10 s. for every cart drawn by two horses, and

5s. for every cart drawn by one horse, and both let for hire:—That all householders, cottagers, labourers, and tradesmen, of every denomination, whether masters or journeymen, living together or separately, in one house, shall, in lieu of personal services, be assessed in the conversion of such a number of days labour, not exceeding six, as the trustees shall judge proportioned to the circumstances of each individual:—That the masters, and employers of all journeymen, shall, in the first instance, be liable in, and obliged to pay, the conversion leviable from their journeymen; for the recovery of which, they shall be entitled to the same diligence as is competent to the trustees for levying the conversion of the statute-labour imposed by this act:—That all servants hired *bona fide* by the year, for specific wages, and all householders renting houses, which, with the yard and other premises, do not exceed the yearly rent of 20s., are exempted from the statute-labour, or payment of conversion-money, altogether: And that the trustees shall have it in their power, by a writing under the hands of any three of them, to relieve from payment of the conversion, such persons as, from indigence or other causes, they shall judge to be proper objects of exemption.

It is likewise enacted, That in order to render the making up of the lists of plough-gates more easy and expeditious, each heritor shall annually, on or before the first day of January, deliver to the clerk of the district, a written specification of the mode by which he inclines to have his plough-gates rated for the ensuing year, and of the number of plough-gates, and

proportional parts of a plough-gate, he is liable for, agreeably to that option : Declaring always, that all proprietors of land shall have it in their power to make a separate option of the mode of conversion for each particular farm separately possessed by them or their tenants ; and such option shall, in every case, be made in the manner most beneficial to the tenant ; and heritors, occupying their own land, shall be liable in the conversion of statute-labour, in the same manner as tenants ; the yearly value of the land for a lease of 19 years, to be fixed by two neutral men, the one named by the proprietor, and the other by the trustees ; and this option of the mode of rating the conversion of the plough-gates, both of proprietor and tenant, the heritor is entitled to make every year.

It is likewise enacted, that the trustees for the several districts shall appoint surveyors, who are annually to make up and report, upon oath, an exact list of plough-gates, chaises, carts, householders, &c. liable in the conversion of the statute-labour ; and the said surveyors, after having ascertained the conversion due by virtue of the act, shall leave with each person so liable, or with his known factor or agent, a note, written and subscribed, specifying the conversion to which he is liable ; and the persons so assessed, in case they shall think themselves aggrieved, shall have power, within ten days from the date of the said note, to appeal for redress to the next general meeting of the district, whose judgment shall be final. *N. B.* This is a very proper clause, as it tends to prevent any person from being surprised or taken at an unawares, by sum-

mary diligence, a hardship which had formerly been sometimes felt and complained of.

It is further enacted, That the trustees of the several districts shall have power to borrow money for making and repairing the roads in their respective districts, on the security of the funds leviabie by virtue of this act ; but with this express provision, that no sum shall be borrowed, except it clearly appears that the funds, upon the credit of which the money is borrowed, are sufficient not only to pay the legal interest, but to afford also a sum equal to 5 per cent. per annum of the sum proposed to be borrowed, to be set apart as a sinking fund for extinguishing the debt contracted. The trustees are empowered to assign the funds leviabie by this act, in security for the money borrowed on the credit thereof. And the assignments are made transferable by a simple indorsation upon the back.

And in order to give further aid to the funds provided by this and former acts of Parliament, the act before us empowers the trustees to extend the assessment of 20 s. Scots imposed by former acts, upon every 100 l. of valued rent in the county, to 40 s. Scots, if this shall be found necessary.

With respect to the mode of laying out and employing the conversion-money, it is enacted, that the whole produce of the conversion of statute-labour, and the sums of money borrowed on the credit thereof, shall be expended upon the roads within the parishes respectively, from which such conversions shall be levied, or on which the interest of the money to be borrowed shall be charged, and no otherwise. And,

by another clause, it is expressly provided, that the funds, to be levied by virtue of this act, shall be disposed of by the trustees in repaying the money borrowed, and in making, repairing, and keeping in repair, the said roads: Declaring always, that the funds of each parish shall be applied in repaying the money borrowed, on the credit of the sum levied in said parish, and interest of said sum, and to the sinking fund for discharging the debt thereon, and in making and repairing the roads in that parish, and in no other way.

It is, however, provided, that any heritor or heritors, possessing three-fourths of a parish, or the *dominium utile*, to be ascertained by the number of their plough-gates, may apply, if they shall think it proper and necessary, the money levied in such parish, or the money borrowed on the credit thereof, to the roads adjoining to or connected with the parish. And the trustees are authorised to allocate the money levied within the territories of royal burghs upon the different roads leading thereto, to the extent of two miles from said burghs, whether the roads, to which the same is applied, be within the parishes where the conversion-money is exigible, or not.

The expence of building bridges on the boundaries between two contiguous parishes, is to be defrayed by the parishes between which they form the junction, in proportion to the number of their plough-gates. It is also provided by this act, that when the expence of rebuilding or repairing any bridge within the county exceeds 80 l., the one-half shall be paid by the district

within which the bridge is situated, and the other half by the other three districts, in proportion to their several valued rents. But the necessity of rebuilding or repairing such bridge must be allowed, and an order given for that purpose, by a general meeting of the county.

And in order to give greater effect to the powers of the trustees, and to prevent all negligence or misapplication of the funds in those who shall be employed in the execution of the work, there are several important clauses introduced, which the reader will find, page 16th of the act, and to which he is referred.

From this short abstract, the principle and object of the act will be easily understood; and whoever peruses the act itself at large, with the least attention, will acknowledge that it hath been framed with much judgment, and that the several provisions it contains are well calculated to answer the design in **view**. In fixing the conversion of road-services, due regard has been evidently paid to the interests of all whom the law more directly and immediately affects. And it ought to be observed and mentioned, that, in the conversion of the services of householders, cottagers, labourers, &c. where the trustees have evidently the greatest discretionary powers, these powers have, in the first instance, been exercised with equal tenderness and wisdom, in the moderate rate at which they have fixed the conversion. And it is not to be doubted, that, in the future exercise of these powers, they will act with the same consideration, and make the burden feel as light as possible to the lower and less

opulent, though not the least useful members of the community.

Before I quit this article, it may be proper to observe, that although in none of the acts of Parliament respecting the roads, is any direct mention made of the by-roads, the general tenor of the act for converting the statute-labour, and the powers thereby lodged with the trustees, render it probable that the framers of the act had these likewise in their eye. The funds are to be laid out in the parishes where they are levied respectively, and in no other place. And though it is provided that they shall be applied, in the first instance, to the great and cross-roads within the parish, it is obvious, that, when the first object is obtained, the funds of the parish may and ought to be laid out in making and repairing the by-roads in the same.

The case is, indeed, extremely urgent. The by-roads are in a most deplorable state. Many parishes can derive little benefit from the great and cross-roads, though in the best state of repair. Numbers of the inhabitants cannot reach a turnpike-road, but with great difficulty, and with scarcely half a load; and when they have reached it, besides the previous risk of horses and carts, and the great expence of time and labour, they are subjected to double duty, paying as much for the half load as others do for the whole.

An immediate and universal remedy cannot, perhaps, be applied to this evil. But it may be expected that the trustees, by the means they now have in their power, will be able to accomplish it, at no very distant period. By the am-

ple funds provided, the principal roads may be completed in a few years. If the work be executed in a sufficient manner, the roads, for several years after, cannot require very general or expensive repairs. During this period, the debts contracted may be extinguished, and then the revenue, arising from the toll-gates, the conversion of the statute-labour, and other provisions made by law, will be able, not only to keep the great roads in repair, but also to furnish some effectual aid towards making the by-roads and keeping them in good order.

As prejudices are commonly entertained against such practices as are new and unusual, especially if they shall touch the pocket, the erection of toll-bars was, at first, unpopular, and still continues, with some, to be a cause of grumbling and complaint. But, surely, of all complaints this is the most unreasonable. Few public advantages can be equally enjoyed by all; and where these advantages are to be paid for by the community in general, it is impossible to proportion the burden exactly to the particular share of the advantage which each individual enjoys. There is, however, no public good more generally felt than good roads; and no good of equal magnitude purchased at so easy a rate. When good roads are made through a country in every proper direction, travelling becomes safe, pleasant, and expeditious. Social communication is promoted, and the necessary intercourse of life rendered easy. Farmers and traders can carry their grain and goods to market in less time and at a cheaper rate. The same horses and carts can transport a much greater load, with

more ease to the horses, and less danger to the carts and harness. So that, in performing the same labour, much time and expence are saved. For every shilling laid out by the community as toll-duty, ten shillings, at a moderate computation, may be allowed to be saved.

I shall conclude this subject with observing, that, under the turnpike and statute-labour acts, the trustees are empowered to make and repair whatever roads they shall judge necessary. About 150 miles of turnpike road have already been completely made, exclusive of those presently making.

The funds put in the power of the trustees for making and repairing the roads, may be stated as under:

Besides those connected with the ferries, there are 12 toll-bars, the annual duties of which at present amount to about	-	L. 2,714	0	0
The amount of the conversion of the statute-labour, not under	-	3,800	0	0
The yearly assessment of 3 s. 4 d. upon every 100 l. Scots of valued rent, (the valued rent of the coun- ty being 362,585 l.) which the trustees are empowered to levy		604	6	0
		<hr/>		
		L. 7,118	6	0

SECT. II.—CANALS.

THERE are no canals in Fife. The situation of the county, between two large navigable rivers, furnished with numerous convenient harbours, from which the greater part of the coun-

ty is removed not more than three or four miles, and no part above eight or nine miles, renders this public accommodation less necessary here, than in many other parts of the kingdom. Dr Campbell, in his Statistical Account of Cupar, has suggested that a navigable canal upon the Eden might be carried as far up as Cupar at no formidable expence, and has stated, in strong terms, the advantages which the town of Cupar, and the adjacent country, would derive from such a cut.

The practicability of the proposed canal cannot, I suppose, be disputed. It must likewise be acknowledged, that it would be a great public benefit, provided the expence of making it will admit the rate of the canal-duties to be so moderate as to render the carriage of goods cheaper this way than any other. This point must be ascertained, before the eligibility of the scheme can be determined. For that purpose, the expence of making the canal, and its necessary appendages, as also the whole cost of carrying goods along the canal, must be estimated. And the probable quantity of tonnage, which the exports and imports will require, must be calculated. Then it can be known what canal-duties it may be necessary to impose, in order to indemnify the undertakers of the work, and, of course, whether it will be the cheapest mode of conveyance.

I pretend not to be a competent judge of the matter, and therefore may very readily be mistaken. But I strongly doubt whether the exports and imports of Cupar, and the whole adjacent country, within the reach of the canal, would be sufficient to raise such an ample and

steady revenue as completely to repay the expences incurred, without fixing the rate of carriage so high as to defeat the great object in view. If gentlemen of opulence, and who are more immediately interested in the prosperity of that part of the county, would risk the expence, without any view to indemnification, it would do the greatest credit to their liberality and public spirit. But I am apt to suspect that no individual, or society of men, will be found so generously disposed, as to venture such a sum of money as the extent of the scheme would require, without the prospect of being fully repaid.

SECT. III.—FAIRS AND WEEKLY MARKETS.

THERE is, perhaps, no county in the kingdom so well accommodated in this respect as Fife. In all the towns and large villages, numerous fairs and markets are held on different days, through the several months of the year, at which a great deal of business is transacted. The principal articles bought and sold are, grain, horses, and black cattle, and these last either fat or lean, or for milking. Besides many other commodities, such as haberdashery goods, groceries, flax, yarn, hard-wares, and such other things as are most likely to meet the public demand, are exhibited for sale. And the country people knowing and taking advantage of this, usually attend upon these occasions, and purchase what they find necessary for the use of their families.

The stated fairs or markets in the county, through the year, amount to 87.—At Cupar, 8.—At Dunfermline, 8.—At Falkland, 8.—At Leven, 7.—At St Andrews, 6.—At Inverkeithing, 5.—At Crossgates, 5.—At Dysart, 4.—At Auchtermuchtie, 4.—At Anstruther, easter, 3.—At Saline, 3.—At Leuchars, 2.—At Leslie, 2.—At Kilconquhar, 2.—At Kinglassie, 2.—At Pittlessie, 2.—At Ceres, 2.—At Colinsburgh, 2.—At Kirkaldy, 2.—At Kinghorn, 2.—At Newburgh, 2.—At Strathmiglo, 2.—At Pathhead, 2.—At Torryburn, 1.—At Wemyss, 1.—Besides these, which are the principal, some other markets are held in a few of the obscurer villages, particularly in the month of April, for the sale of flax-seed.

In all the principal towns, weekly markets are regularly held, to which the people in the neighbourhood resort with such productions from the country as they have to spare, and which may be most wanted by the inhabitants of the towns; at the same time furnishing themselves from the shops with such articles as they find most necessary for domestic use, particularly articles of clothing and groceries. Nay, in almost every village of any consequence through the county, shops are to be found, which supply the neighbourhood with a variety of necessary articles, and which could not be got otherwise, but from an inconvenient distance, and with much loss of time; such as meal, barley, spirits, candle, soap, starch, ashes, tea, sugar, bread, butter, tobacco, snuff, ropes, nails, furnishing for funerals, locks, hinges, scythes, reaping-hooks, &c. &c.

The principal weekly market for grain is held at Cupar. A market of the same kind was lately established at Kirkaldy; but I understand there is not a great deal of business transacted at it.

SECT. IV.—COMMERCE.

THE situation of this county is very favourable for trade. It is almost surrounded with the sea, and abounds with harbours, several of which are capable of being fitted, at a moderate expence, for the reception of ships of almost any burden: And though not so conveniently situated for the West Indies, America, or the south of Europe, its communication with all the northern kindoms is short and easy. Notwithstanding these advantages, however, it has never made any considerable figure in commerce. This may be partly owing to the proximity of the Port of Leith, the connection of which with the Metropolis, as it would early give it the advantage over every other port in the neighbourhood, so it must continue to secure to it the ascendancy it had gained.

There are two ports in Fife where custom-houses have been established, viz. Kirkaldy and Anstruther. The former has under its management all the duties on exports and imports from Aberdour to Largo, inclusive; and the latter, from Largo to St Andrew's. The trade on the north side is under the inspection of the custom-houses of Dundee and Perth; and that from

Aberdour, westward, belongs to the custom-house of Borrowstounness.

The foreign trade of this county is carried on chiefly with Norway, Denmark, Sweden, Russia, Poland, Prussia, Germany, and Holland. The chief articles of export are coal, and a few of our manufactures. The imports are wood of different kinds, such as oak, fir, beech, &c. —oak-bark—hydres and tallow—grain, particularly wheat, barley, and oats—flax, and yarn made of flax—hemp—iron—tar—flax-seed—clover-seed—pearl-ashes—Geneva, &c.

The coasting trade is more important and valuable than the foreign. The principal articles exported this way are grain of different kinds, such as wheat, barley, pease, beans, malt; coals; lime; salt; various kinds of manufactured goods, such as datmasks, diapers, checks, ticks, Silesias, Osnaburgs; leather, whisky, &c. The ports from whence grain is exported, are Kirkaldy, Nether Largo, Pittenweem, Ely, Anstruther, Crail, St Andrew's, Newhaven, and Newburgh. Wheat is carried chiefly to Leith; barley, to Leith, to the west of Scotland by the great Canal, and to other counties in the more immediate neighbourhood, for supplying the distilleries. Coal and salt are exported from Kirkaldy, Dysart, Wemyss, Methel, Pittenweem, Inverkeithing, Capernaum, St David's, and Crombie-point. Lime, chiefly from Charlestown, Aberdour, and Burntisland. The last three articles are carried to different parts of Fife, particularly on the north side, and to the counties north of Fife. Some of the coals go to the south side of the Forth, and some of the lime to Carron. The

linen manufactures are shipped principally to the English, and partly to the Scots market: The Dunfermline goods, at Crombie-point for Borrowstounness; and the other kinds from the ports of Kirkaldy and Newburgh.

The goods imported coastwise are chiefly for home consumption, and consist of wheat, barley, oats, oat-meal, wine, foreign spirits, porter, tea, sugar, soap, candles, and other groceries, wool and cotton, and all kinds of woollen and cotton goods, dried fish, various kinds of hardware, &c. These are brought from London and other places in England; from Leith, from Glasgow, from Dundee, and from the north of Scotland.

In a survey which respects agriculture chiefly, it will be expected that the exports of grain should be particularly noticed. It is difficult, however, perhaps impossible, to ascertain the quantity with perfect accuracy. The exports on the north side, and west from Aberdour, are under the inspection of custom-houses, without the bounds of this county, and which, I am informed, keep no separate accounts for Fife. But from the statements with which I have been favoured, from the custom-houses of Kirkaldy and Anstruther, and from the best information I have been able to procure, from those principally concerned in this business, I am persuaded the following state will not be far from the truth.

	<i>Bolls.</i>
Wheat sent coast-wise annually, at an average	28,000
Barley, ditto	45,000
Pease and beans	12,000
Malt	2,000

The quantity of oats, oat-meal, and wheat flour, exported, is so inconsiderable, that it deserves not to be mentioned.

For many years back, the quantity of grain exported has been on the increase; and of late the increase has been rapid and great. This may, perhaps, be imputed to the progressive improvement of the soil. But it deserves to be remarked, that to this improvement, and the consequent increase of exportation, there is one cause which has greatly contributed. The opening of a communication between the Forth and the Clyde by the great canal, whilst it has produced the most beneficial effects on the trade and navigation of this part of Scotland in general, has proved a powerful stimulus to the agricultural exertions of this county, by furnishing a convenient and profitable market for whatever grain we can spare. In the course of the year ending January 5th 1799, from the port of Anstruther alone there were shipped coastwise, upwards of 28,000 quarters of grain of different kinds; whilst there were only about 600 quarters imported, chiefly oats; and of the above quantity shipped, three fourths, at least, went through the canal.

The following is the state of the shipping at present employed in carrying on the trade of this county, both to foreign ports and coastwise :

	No. of Ships.	Tons.	Men.
In the district belonging to the Custom- house of Kirkaldy - -	89	10,489	649
In the district belonging to the Custom- house of Anstruther - -	53	3,024	234
Carry forward	142	13,513	883

	No. of Ships.	Tons.	Men.
Brought forward	142	13,53	883
✓ The shipping employed in the trade west of Aberdeen, and on the north side of the county, cannot be ascertained with any degree of exactness. But when we consider the great exportation of lime and coal from the parishes of Dunfermline and Inverkeithing, amounting annually to not less than 120,000 tons; the great quantities of grain shipped from the north side, and other branches of trade, belonging to these districts, of inferior importance and extent, the shipping necessary for these purposes, making allowance for the vessels belonging to the other ports that may be occasionally employed, cannot be calculated under -	80	6,400	480
	<hr/>	<hr/>	<hr/>
	222	19,913	1,363

SECT. V.—MANUFACTURES.

FIFE has been long distinguished as a manufacturing county; and particularly, within the last 12 or 15 years, some of its principal manufactures have reached a degree of perfection, and have been carried on to an extent, unknown at any former period.

In a report, which has a special reference to agriculture, the manufacture of grain must naturally fall under our observation. It has been already stated that there are, in Fife, 14 flour mills, which annually manufacture 40,000 bolls of wheat into flour, and chiefly for home consumption. Of barley, there cannot be less than 42,000 bolls yearly made into malt, and that again manufactured into whisky and beer of

different kinds. In the county there are at present four distilleries. The contents of the stills amount to 214 gallons. To make good spirits, I have been informed by competent judges, the stills, which are nearly equal, cannot consume, each of them above 60 bolls of malt in the week. But as, from the present construction of the stills, evidently calculated to work them off with the greatest possible dispatch, greater regard seems to be had to profit, than to the quality of the spirits, they may be supposed to consume 90 bolls each per week, which will amount to 4,680 bolls through the year: and consequently the four stills will use 18,720 bolls annually. Each boll will yield 11 gallons of spirits; so that the whole quantity of whisky produced by the stills in Fife in a year, supposing them to be constantly employed, will amount to 205,920 gallons; and the duty arising from thence will be 21,852*l.* *per annum.*

Breweries are very numerous in Fife; though there are none upon a very extensive scale. Besides those in the large towns, there are small ones in almost every village, from which the inhabitants in the immediate neighbourhood are regularly and conveniently supplied with beer. A considerable quantity of strong-ale is made by the principal brewers. The quantity of malt consumed this way, cannot be less than from 18,000 to 20,000 bolls, besides what is used by private families who brew their own beer.

A considerable quantity of pot-barley likewise is made, not less perhaps than 25,000 cwt., which is scarcely one and a fourth cwt. for each family in the county, at a medium, through the

year. And this will consume at least 15,000 bolls of barley.

Linen.—The manufacture of linen is more extensive, more valuable, and employs a much greater number of hands, than any other in the county. The different kinds of linen goods manufactured here, are damasks, diapers, checks, ticks, Osnaburghs, and Silesias, or brown linens, besides plain linen of various fabrics, for shirting and other domestic purposes. Damasks and diapers are made chiefly at Dunfermline, which town has been long famous for that branch of business, employing sometimes not less than 800 looms in it. Checks and ticks are manufactured principally at Kirkaldy, Dysart, and the immediate neighbourhood. Silesias, Osnaburghs, &c. are made in great quantities in Auchtermuchtie, Falkland, Cupar, Kettle, Strathmiglo, Leslie, Markinch, Kennoway, Leven, Largo, East Wemyss, and by a variety of hands more widely scattered, in other parts of the county.

The following abstract-account of linen cloth stamped for sale annually in the county of Fife, with its value, and medium price, for the space of 11 years immediately preceding November 1798, will serve to give a view of the progress and importance of this branch of business. The account for 1799 could not be furnished before this went to the press: but it is supposed that it will far exceed the quantity of any former year.

Year.	Quantity Yards.	Value. L. s. d.	Price at a Me- dium.
From Nov. 1787 to 1788	3,850,147 $\frac{3}{4}$	144,259 11 0 $\frac{3}{4}$	8 $\frac{8}{12}$ per yard
1789	3,934,568 $\frac{1}{2}$	141,473 7 2 $\frac{1}{4}$	8 $\frac{9}{12}$
1790	3,665,461 $\frac{1}{2}$	138,936 7 10 $\frac{1}{2}$	9 $\frac{1}{12}$
1791	4,146,635 $\frac{3}{4}$	166,876 18 1 $\frac{1}{2}$	9
1792	5,004,726 $\frac{1}{2}$	209,975 13 10 $\frac{1}{2}$	9 $\frac{9}{12}$
1793	5,013,089 $\frac{1}{2}$	200,543 14 9	9 $\frac{6}{12}$
1794	4,812,319	188,370 12 6	9 $\frac{3}{4}$
1795	5,212,548	214,013 19 10	9 $\frac{3}{4}$
1796	5,693,176 $\frac{1}{4}$	243,909 9 10	10 $\frac{3}{4}$
1797	4,293,891 $\frac{3}{4}$	175,319 15 7 $\frac{1}{2}$	9 $\frac{3}{4}$
1798	4,487,391	195,443 14 1 $\frac{1}{4}$	10 $\frac{5}{12}$
	50,113,955 $\frac{1}{2}$	2,019,123 4 9 $\frac{3}{4}$	

Besides this, it may be computed, that 600,000 yards of plain linen are annually manufactured by private families for their own use, which, not being stamped, cannot be included in the above account. Damasks, and fine diapers for table-cloths, are likewise not included. The annual average quantity of linen cloth, therefore, of all descriptions, made in this county for the last 11 years, will amount to 5,155,814 $\frac{1}{2}$ yards. And as a large proportion of the cloth manufactured for private use is of a fine fabric, the average value of this may be estimated at 1 s. 4 d. per yard; consequently the annual average value of the whole will be 223,556 l. 13 s. 2 d. And the medium value per yard 10 $\frac{5}{12}$ d.

Of cloth of a coarse fabric, one loom is computed to make from 1100 to 1320 yards per annum. But as the above calculation includes all diapers and fine linens, the average quantity wrought by one loom may be fixed at 1000 yards; consequently the whole number of looms

employed will amount nearly to 5,156. The average quantity of yarn to a piece of 100 yards, will be 24 spindles; and therefore the whole linen manufactured will consume 1,237,392 spindles of yarn, including the cotton yarn used in the checks and ticks. And allowing $3\frac{3}{4}$ lib. to the spindle, the weight of the flax and cotton will be upwards of 4,640,220 lbs. or 2071 tons.

The different operations of heckling, spinning, dying, bleaching, winding, and weaving, are computed to require $5\frac{1}{2}$ hands to each loom. But as a considerable quantity of the cloth requires neither dyeing nor bleaching, and as many of the people employed in these operations do not apply their whole time to them, but are frequently taken off by the necessary avocations of domestic life, we may suppose each loom to require only $4\frac{1}{2}$ hands. The number of persons, then, young and old, engaged in this business, will amount to 23,192.

The yarn is partly imported from a foreign market, partly purchased in the neighbouring counties, and partly spun at home. The flax spun at home is partly the produce of the county, but chiefly imported from Russia and Holland. Of the yarn spun at home part is manufactured by the hand, and part by machinery.

As mills for spinning flax have been lately introduced into this county, and are of the greatest importance to the linen manufactures, they deserve to be particularly taken notice of. The first erection of these mills was so late as the year 1793, and at that period only three began to do business. Since that time, their number

has increased to eleven, nine of which spin both lint and tow, and two, tow only. Besides those already at work, there are five more just now erecting.

When our people first began to use these machines, they could spin lint-yarn only. But by improved skill and dexterity derived from practice, as well as from the application of genius, they can now spin not only heckled flax, but braids, tow, and backs also. In point of quantity and quality of the yarn, likewise, they have much improved. Their coarse yarns, whether from lint or tow, are not inferior to those spun by the hand. The grist of their lint-yarn is commonly from 3 lib. to 6 lib. per spindle. Some has been spun so fine as $2\frac{1}{2}$ lib. and even 2 lib. the spindle, but this is in no great quantity. Their tow-yarns are from 5 lib. to 10 or 12 lib. the spindle.

The lint-yarn made at these mills, is manufactured into threads, coarse shirting, ticks and checks; sail-cloth, Osnaburgs, &c. : The tow-yarn is used for woof to ticks, sail cloths, Osnaburgs, &c. The flax they commonly use is brought from the Baltic, viz. Petersburgh, Riga, Libau, &c. and also from Holland. The Russia flax is in general of so coarse a fibre, that it cannot be spun fine : But, from the great improvement already made in spinning with these machines, it is not to be doubted but that in time, and with flax of a proper quality, they will be able to spin yarn small enough for fine linen. Upon trial, they find that our home-grown flax spins well; and from what is good of it, finer yarn can be spun than from Dutch flax.

The great demand upon the St Petersburg market, in consequence of the erection of spinning-mills in this country, has been the mean of raising the price of flax there from 80 to 90 per cent. above what it was in the year 1791.

The quantity of flax consumed at present by the spinning-mills in this county, is about 660 tons in a year, or 67,200 stoncs tron, 22 lib. Averdupoise to the stone. Rating it at 60 l. per ton, which is under the current price of this year, it will amount to 39,600 l.

The number of people of all descriptions employed at the mills, in the whole process of the manufacture, from the raw lint to the weaver or the market, is about 960. The greatest proportion of these are from 8 and 10 to 16 and 18 years of age. And most of the mills have a person properly qualified to teach the children to read, and to instruct them in the principles of Christianity.

The spinning-mills have hitherto been generally wrought by water, and are therefore fixed in different parts of the county where the convenience of the water-falls can be most easily got. But now the steam engine begins to be used instead of water. This is considered, by those who are employed in this business, as a very great improvement, as it enables them to place their machinery in any populous town or village, where there is a shipping port, or where hands can be got in plenty, and at easier wages. When the mills are turned by water, the undertakers are often obliged to settle in the most inland parts of the county, remote from a sea port, and with all the inconveniences of long carriagès,

bad roads, and scanty population; and as they are under the necessity of collecting their hands from different and distant parts of the country, they must sink a considerable sum of money for their accommodation. The steam-engine obviates all these disadvantages, and bids fair to make water-falls of considerably less value.

Salt.—The southern coast of Fife, being washed with salt-water, and abounding in coal from the one end to the other, is most advantageously situated for the manufacturing of this article. Accordingly we find, that the making of sea-salt has been an established business in Fife for many centuries back. This manufacture is carried on chiefly at Dysart, Kirkaldy, Inverkeithing West Wemyss, Methel, and in some places within the district belonging to the port of Anstruther. The quantity annually made, is not under 90,000 bushels. The duty, at 5 s. 6 d. per bushel, will amount to 24,750 l. One hundred and twenty loads of coals are required for making every 100 bushels of salt. And from 110 to 120 hands may be employed in this business.

Ship-building.—Before the conclusion of the American war, little attention was paid to ship-building in this county. But since that period, and especially since the amendment of the Navigation act, excluding all ships not British built from the trade of this country, it has made very considerable progress. Within the last 15 years, not less than 1,200 tons of shipping have been built annually in our several ports, principally at Dysart, Kirkaldy, Wemyss, and Anstruther. Most of the vessels have been built for our own

trade: but some of them also for other ports in Scotland. The crooked wood is mostly imported from Hamburgh; and the planks, partly from Dantzick, and partly from England. About 120 men may be employed in this business. This branch of our manufactures, though carried on upon a comparatively small scale, is, nevertheless, productive of considerable advantage to the place; as, besides the number of hands engaged in building, it furnishes employment for many others in importing the materials, and in manufacturing the cordage, sail-cloth, iron work, &c. which such a business requires.

Leather is manufactured in several parts of Fife, particularly at Kirkaldy, Cupar, Auchtermuchty, and Falkland. This branch of business employs about 40 hands, who manufacture annually between 9,000 and 10,000 hydes of oxen and cows, perhaps as many calf skins, and some seal-skins. Such proportion of the raw hydes and skins, as Fife cannot supply, is brought from the neighbouring counties, from the North of Scotland, from Ireland, and sometimes from Holland. About 560 tons of oak-bark are annually consumed by the tanneries, purchased partly in England and Scotland, but, owing to the great rise in the price of British bark, principally from Germany and the Netherlands. The quantity of leather annually manufactured, is about 164,000 lbs. It consists of all the usual kinds, whether for shoes, saddles, harness, or other purposes, and is disposed of in Fife and in other places in Scotland. The annual return it brings at an average, is about 30,000 l.; and

the duties, drawn from it by Government, amount to upwards of 1,000 l.

Soap and Candles are manufactured in considerable quantities in Fife. About 250,000 lib. of the former, and 180,000 lib. of the latter, are made annually; the duties of both which amount to about 3,000 l.

Brick and Tyle are manufactured at Cupar, Kirkaldy, and Leven. About 750,000 are made annually; and the duty is about 300 l.

Vitriol.—This article is manufactured at Burntisland. The business commenced several years ago, and is at present in a flourishing state. I have not been able to learn the quantity of vitriol annually made; but the work is allowed to be the second of the kind in Scotland.

SECT. VI.—POPULATION.

THERE are only five counties in Scotland which exceed Fife in population; viz. Aberdeen, Mid-Lothian, Lanark, Perth, and Forfar. But in proportion to its territorial extent, it is the most populous, except the counties in which the cities of Edinburgh and Glasgow are situated. The whole number of souls amounts to 87,250, as appears from the Statistical Accounts of the several parishes:

Parishes.	Pop. 1755.	Pop. 1790-98.	Increase.	Decrease.
<i>Cupar Presbytery</i>				
Cupar	2,190	3,702	1,510	
Kettle	1,621	1,729	138	
Balmerino	565	703	138	

Parishes.	Pop. 1755.	Pop. 1790-98.	Increase.	Decrease.
Denbog	255	235		20
Abdie	822	494		328
Flisk	318	331	13	
Strathmiglo	1,695	980		715
Creich	375	306		69
Monimail	884	1,101	217	
Cult	449	534	85	
Collessie	989	949		40
Newburgh	1,347	1,664	317	
Kilmeny	781	869	88	
Auchtermuchty	1,308	1,439	131	
Logie	413	425	12	
Dairsie	469	540	71	
Moonzie	241	171		70
Ceres	2,540	2,320		220
Falkland	1,795	2,198	403	
<i>St Andrew's Presbytery</i>				
St Andrews & } St Leonard's }	4,913	4,335		578
Anstruther, Easter	1,100	1,000		100
Anstruther, Wester	385	370		15
Crail	2,173	1,710		463
Pittenweem	939	1,157	218	
Kilrenny	1,348	1,086		262
Leuchars	1,691	1,620		71
Kemback	420	588	168	
Kilconquhar	2,131	2,013		118
Kingsbarns	871	807		64
Denino	598	383		215
Cambee	1,293	1,041		252
Cameron	1,295	1,165		130
Ferry	621	875	254	
Forgan	751	875	124	
Elie	642	620		22
Largo	1,396	1,913	517	
Newburn	438	456	18	
St Monance	780	832	52	
<i>Kirkaldy Presbytery</i>				
Kirkaldy	2,296	2,673	377	
Balingry	464	220		244
Burntisland	1,390	1,210		180

Parishes.	Pop. 1755.	Pop. 1790-98.	Increase.	Decrease.
Auchterderran	1,143	1,200	57	
Wemyss	3,041	3,025		16
Auchtertool	389	334		55
Kennoway	1,240	1,500	260	
Markinch	2,188	2,790	602	
Dysart	2,367	4,862	2,495	
Kinghorn	2,389	1,768		621
Leslie	1,130	1,212	82	
Scoonie	1,528	1,675	147	
Abbotshall	1,348	2,136	788	
Kinglassie	998	1,200	202	
<i>Dunfermline Presbytery</i>				
Dunfermline	8,552	9,550	998	
Saline	1,285	950		335
Inverkeithing	1,694	2,210	516	
Dalgety	761	869	108	
Carnock	583	970	387	
Aberdour	1,198	1,280	82	
Beith	1,099	450		649
Torryburn	1,635	1,600		35
	81,570	87,250	11,575	5,895
		81,570	5,895	
Increase		5,680	5,680	

From the above table it appears, that there are in Fife 173 souls for every square mile of land; and that though the county is not, in point of extent, above one forty eight part of Scotland, it contains above a nineteenth part of its population. Its present extraordinary population cannot be ascribed to the improved state of agriculture; as for the last 45 years, the increase of inhabitants has been inconsiderable. This circumstance, I should be inclined to think, is rather to be imputed to the natural advantages which Fife enjoys beyond most other counties. The greatest part is excellently adapted

to the raising of grain or breeding of cattle; and, therefore, under very ordinary management, is capable of furnishing a considerable supply of provisions. It enjoys the benefit of an extensive sea-coast, which must enable the inhabitants to draw a large portion of the means of subsistence from the surrounding waters: and its numerous commodious harbours give them the advantage, in case of internal scarcity, of an easy importation from other parts of Britain, or from foreign ports. Fuel is to be had within itself in great plenty, and at a reasonable rate. Salt, an essential article, can be manufactured to any extent. And for building, lime and stone are to be found almost every where at a convenient nearness, and of the best quality. All these advantages are highly favourable to population. Besides, wherever they are to be found, there trade and manufactures will naturally take up their residence. Accordingly this has happened in Fife: and it is probably to the growing prosperity of our manufactures, rather than to any other cause, that any increase of population, for the last 30 or 40 years, is to be ascribed.

Besides the 13 royal burghs formerly mentioned, there are about 66 towns and large villages in the county, containing each from 200 to 1,200 inhabitants; and in these towns and villages perhaps one half of the people in the county have their residence.

When the several facts before stated in this report are considered, it must appear that the county of Fife, though it comprehends but a small portion of the territory of Great Britain, and, in several particulars, is not to be compared

with many other parts of the kingdom, does, nevertheless, hold a respectable place among the counties of Scotland. This will appear from the following recapitulation.

Of the inhabitants engaged in, or dependent upon *Agriculture*, for their subsistence, the number is not less than - - - - 30,000

By the labour and industry of this class, besides a sufficient supply for home consumption, a considerable surplus of grain and cattle is produced for exportation.

	<i>Bolls.</i>
Wheat, to the annual amount of - - -	28,000
Barley - - - - -	45,000
Beans and pease - - - - -	12,000
Malt - - - - -	2,000
Black cattle, of different ages, both fat and lean, yearly sold from the county - - -	10,000

Of the inhabitants engaged in, and wholly supported by the *Commerce*, and the different manufactures of the county, upwards of - - - 28,000

Number of ships, of all dimensions, employed in our trade and commerce - - - 222

Tonnage of ditto - - - 19,913

Of the *Manufactures*, the following are the most important.

Linen cloth annually manufactured - yards,	5,155,814
Value of ditto - - - - -	L. 223,556
Malt - - - - - bolls,	42,000
Whisky, supposing the stills to work constantly through the year - - - gallons,	205,920
Ale of all kinds brewed annually - barrels,	42,356
Salt made in a year - - - bushels,	90,000
Of shipping built annually - tons,	1,200
Leather yearly manufactured - lbs,	164,053

Soap ditto	-	-	-	lbs,	248,483
Candle ditto	-	-	-	lbs,	180,420
Brick and tyle	-	-	-		741,000

Yearly *Revenue* arising from the commerce and manufactures, &c. of Fife.

	£.	s.	d.
Duties upon foreign exports and imports, at an yearly average, about	6,500	0	0
Amount of duties upon the following articles taken for the year from July 6th 1798 to July 5th 1799.			
Beer and ale	5,350	0	11
Candles	751	15	0½
Soap	2,329	10	6
Leather	1,032	18	4½
Malt	6,130	1	1
Salt sold, 51,062 bushels]	16,595	0	3
Brick and tyle	292	10	7
The distilleries for nine months, ending 9th July 1799	16,932	8	0
Supposing the stills to work through the whole year, there would be an additional duty for three months amounting to	4,233	2	0
Total, L.	60,147	6	9



SECT. VII.—BURDENS AFFECTING LANDED PROPERTY.

OF these I shall only mention, ministers stipends, school-masters salaries, and the maintenance of the poor.

The Ministers of Religion, and the Teachers of Schools, from the nature of their official du-

ties, cannot be supposed, like the husbandman, the manufacturer, or the artificer, to earn their subsistence, or to add to the stock of national wealth, by what is called productive labour. By a different application of their time and their talents, however, they contribute most essentially to the public good. The education of the young in every necessary branch of useful literature, and the instruction of the people at large in the great principles and duties of religion and sound morality, is the important task assigned them by the community. In the faithful and successful discharge of this office, is laid the surest foundation of national prosperity, as well as of individual happiness. Under a just conviction of this, Government has considered public teachers as a necessary order in the State, given them a legal establishment, and burdened the landed property with their support.

The Parochial Clergy.—In Fife there are 61 parochial charges; but as four of these are collegiate, the number of established ministers is 65. The clergy in this county, as in other parts of Scotland, are mostly stipendiaries; that is, they have a living or stipend modified from the teinds of their respective parishes. As the teinds are the only funds from which church livings can be legally granted or augmented, so ministers stipends, and augmentations of stipends, are the only burdens by which they can be legally affected. Manses and offices must be built, and glebes provided for the clergy, at the private expence of the heritors, in proportion to their valued rents. The legal glebe consists of four acres of arable land, and pasture sufficient for

one horse and two cows, besides half an acre of ground for house and garden.

Sometime ago the clergy in this county were, in general, but scantily and inadequately provided. But now their condition is greatly ameliorated.

The Lords of Session, who are authorised to act also as a Court of Teinds, have, of late, shewn themselves very favourable to the claims of the clergy. Since the present Lord President came to the chair, no reasonable application has been rejected. Wherever there have been unappropriated teinds, augmentations, greater or smaller, have been granted according as the extent of the funds would allow, or the urgency of the case seemed to require.

Within the last fifteen years, a great number of new manses have been built, and most of them upon a liberal plan, and at considerable expence. Indeed, there are few instances in which the comfortable accommodation of the clergyman's family has not been duly consulted.

In stating the livings of the Fife clergy, I cannot pretend to be perfectly accurate. The information given in the Statistical Accounts of the several parishes, is in some instances defective, and, in others, not sufficiently explicit. Since these accounts were drawn up, several augmentations have been obtained. And the price of victual is fluctuating, though, perhaps, upon the whole, progressively on the rise. I am confident, however, that I cannot be materially wide of the truth, if I calculate the average of the livings of the established clergy in Fife, including the glebes, at 120 l. per annum each, which

amounts in whole to 7800 l. The annual expence of building and repairing churches and manses, cannot be stated at less than 2,200 l. So that the whole burden upon the landed property, arising from the ecclesiastical establishment in Fife, will amount to 10,000 l. per annum, which may be nearly equal to a twentieth part of the land rents of the county.

Besides the churches upon the establishment, there are at least 36 places of worship belonging to the Burghers, Antiburghers, Relievers, Cameronians, and other sectaries, the support of which must bring a serious burden on the community, and must ultimately affect the landed property. Building 36 churches, and as many manses, cannot cost less than 20,000 l., the interest of which, and the annual expence of keeping these houses in repair, will amount at least to 1,300 l. per annum. The stipends of their clergy, computed at 75 l. each, will be 2,700 l. in whole 4000 l., which is more than six fifths of the whole land-tax payable by the county.

Such a large sum, annually sunk for the support of the different sectaries, deserves the consideration of the landholders, and ought certainly to render them cautious of giving their countenance to any measures, especially in church-settlements, that may tend to encrease the burden, by exciting discontent among the people, and spreading more widely the spirit of separation. *Patronage* has been alleged by all the sectaries, as one cause, and by one sectary as the only cause, of seceding from the established church. But the truth is, the evil is owing, not to the law of patronage, but rather to the want of conduct

and management in carrying it into effect. And I strongly doubt, if one instance of a violent settlement can be produced, where the business has been wisely and prudently conducted.

I had the honour of being acquainted with a gentleman, who had the charge of settling 20 churches for 30 years ; during all which period, every settlement under his direction was effected peaceably and without a struggle. Besides the temper and address he discovered in managing the passions and prejudices of men, his general character contributed, in no small degree, to his success. His personal piety, his steady regard to the interests of religion, and the peace of the church, the affability of his manners towards his inferiors, and the warm interest he took in whatever concerned their good, secured to him universal respect and esteem. Hence it happened, that his opinions, his advices, and recommendations, in every thing relative to their religious, as well as their temporal affairs, were listened to with a kind of veneration, and almost implicitly followed. Similar effects will flow from similar causes ; and I am convinced, that if church-settlements had been universally conducted with the same wisdom and address, most of those religious animosities and disputes, which, to the great prejudice of true religion and social happiness, have distracted and soured the minds of the lower classes, would have been prevented, and the additional burden of maintaining a separate order of clergy, would never have been necessary, or at least would not have been so extensively felt.

Teachers of Schools.—This class includes both masters in Universities and parochial school-masters.

THE UNIVERSITY OF ST ANDREWS.

OF this ancient and respectable seminary of learning, I cannot give a better account than that furnished by the reverend Dr Adamson, in his Statistical report of the parish of St Andrews.

“The UNIVERSITY,” says the Doctor, “which is the oldest in Scotland, being founded in 1444, formerly consisted of 3 colleges; viz. *St Salvator’s*, founded by JAMES KENNEDY, bishop of St Andrews, in 1458; *St Leonard’s College*, founded by Prior HEPBURN, 1512; and *St Mary’s*, founded by Bishop JOHN HAMILTON, 1552. In each of these colleges were lectures in Theology, as well as in Philosophy, Languages, &c. In the reign of James VI., 1579, under the direction of GEORGE BUCHANAN, the University was new modelled; and St Mary’s college was appropriated to the study of Theology, and is therefore distinguished by the name of the Divinity College, or the New College. In 1747, on a petition from the masters of the two colleges of St Salvator’s and St Leonard’s, the Parliament united these two colleges into one society, under the designation of the United College. These colleges are independent of each other in their revenues and discipline. The *Senatus Academicus*, or University Meeting, consists of the Principals and Professors of both Colleges, which have a common interest in the Library. The

preses of this meeting is the Rector or his depute. The higher academical degrees are granted by the University. The Rector confers the degree of Master of Arts in the United College. The Dean and Faculty confer the degree of Bachelor of Arts. The Rector is chosen annually, on the first Monday of March, by the comitia of the University, consisting of the Rector, Principals, and Professors of both colleges, with the Students of Divinity, of Moral and of Natural Philosophy. All these masters and students are divided, according to the place of their birth, into 4 nations, Fifans, Angusians, Lothians, and Albans, which last class comprehends all who belong to none of the first three. Each nation chooses an intrant: and the 4 intrants name the Rector. If the votes of the intrants are equally divided, the last Rector, who is preses of the comitia, has the casting voice. The only persons eligible into the office of Rectorate, are the Principals, and the Professors of Divinity, who are designed *Viri majoris dignitatis ac nominis*, or *Viri Rectorales*. The Rector, immediately after his instalment, (which is performed by his putting on the gown of office, being a purple robe, with a large hood, the hood and borders of the robe lined with crimson satin; and by receiving the oath *de fide*) names deputies from among the *Viri Rectorales*, and assessors from the *Senatus Academicus*. He is a civil judge in the University, before whom may be brought complaints against masters, students, or supposts of the University. To his court there lies also an appeal from the judgments of either college, in matters of discipline. In the Rectorial court, the asses-

sors have a deliberative voice ; but the Rector is not bound by their opinion or advice, having the power of decision entirely in his own person. The Court of Session have shewn themselves very tender in receiving appeals or advocations from the Rector, in matters of discipline over the students.

“ The revenue of each of the colleges is partly in tithes, and partly in property lands. The revenue from tithes is always decreasing, by augmentations of stipend granted by the commissioners of teinds to the parochial ministers. In each college there are apartments for lodging the students, rent-free : there is also a public table for the bursers on the foundation. In the United College there is a separate table for such of the students as choose to board themselves, at about 10*l.* Sterling for the session, consisting of 6½ months. At each table one of the masters presides.

“ St Andrew’s has many advantages as a place of study. The University library is well stored with books in all the sciences, to which every student has access, for a small yearly payment. The masters are eminent in their several departments. There are very few avocations to the youth, who are not, however, restrained from innocent amusements, which are properly regulated by the masters. The person, the actions, and the character of every student, are well known by the masters ; so that any tendency to riot or dissipation is immediately checked ; attention, diligence, and good behaviour are observed, encouraged, and honoured : and the public examination of each class, in the

University-hall, at the end of the session, excites and maintains a spirit of application and emulation.

“ The situation of the place is very healthy; there are dry walks at all seasons; the air is pure; the streets are spacious and open; and the water, brought into the town from adjacent springs in leaden pipes, is plentiful and excellent. Putrid or malignant diseases are scarcely ever seen in St Andrew’s. Epidemical diseases of any kind are very rare, and also much milder than in other places of the same size and population.”

Parochial Schoolmasters.—In every parish, so far as I know, there is one school established by law. By an act of King William’s first Scots Parliament, held in 1696, it is ordained, that a school be settled, and a schoolmaster appointed, in every parish; and that the heritors shall provide a commodious house for a school, and modify an annual salary to the schoolmaster, not under 5l. 11s. 1½d. nor above 11l. 2s. 2⅔d. Sterling, and to be paid by equal portions, at the terms of Whitsunday and Martinmas; which salary is declared to be over and above the perquisites which formerly belonged to the readers and clerks of the kirk-sessions.

In Fife, the medium of school-salaries is not above 7l. per annum; which, for 60 parishes, amounts to 420l.; the whole burden to which the heritors are subjected for the support of the parochial schoolmasters. The number of children attending the public schools may be from 3000 to 4000: say, however, 3500 at an ave-

rage annually. The school-fees, and other perquisites connected with the office, added to the salary, will amount to about 1800*l.*, which is 30*l.* to each schoolmaster. But as the schools in the burghs and large towns have the best salaries, and are attended by the greatest number of children, the emoluments of the country schools cannot be estimated above 25*l.* per annum.

Whether this be a suitable provision for an order of men engaged in a business so laborious in itself, and at the same time of such essential importance to society, may be referred to the judgment of every candid mind. The salaries, and other emoluments, though small, might be sufficient at the time they were fixed. But such a change has taken place, during the lapse of a hundred years, in the general mode of living, and in the price of provisions of every kind, that 10*l.* at the end of the last century was a better income than thrice that sum at this present time.

Some men, I know, affect to despise this office, as below public notice and encouragement; and, if at all necessary, allege that a very small portion of education and respectability are sufficient to qualify a man for the discharge of it. Such an idea of the matter must arise either from the want of consideration, or from something worse. In the parochial schools is laid the foundation of the future fortunes and the future usefulness of the rising generation. There the children are taught to understand, to feel, and to venerate, the sacred obligations of religion, without a strong and prevailing sense of

which among the people, no government can be stable, no nation can flourish, no individual be happy. There they are brought to think and to act as social beings; to know and to practise the principal duties which man owes to man, such as justice, truth, benevolence, and the like. There the habits of sobriety, industry, subordination, and obedience to lawful authority are formed and cultivated. There, in short, the young are instructed in the first principles of useful literature, such as reading their mother tongue, writing, and the fundamental rules of arithmetic, and the course of education regulated and extended according as genius points, or as circumstances may permit. Thus furnished with virtuous habits, and the principles of useful knowledge, they enter upon the theatre of life, prepared to act their part with honour to themselves, and advantage to the public, in whatever department it may please Providence to place them.

An office of such high importance to the comfort and usefulness of individuals, especially of the lower classes, and to the best interests of the community at large, ought certainly to be filled with men of education, of prudence, and respectability of character. And this is the more necessary in the present times, when the enemies of religion and of good order are endeavouring, by all means in their power, to taint the minds of the weak and the ignorant, with the poisonous principles of infidelity, disloyalty, and licentiousness. But what man of education and respectability, will settle in a parish school with an income little better than that of a common

labourer, and far inferior to the emoluments of the menial servants of the higher and more wealthy classes of citizens? Is it consistent with the opulence, the refinement, and the liberal sentiments of the present age, that a body of men employed by the State, in training up the rising generation in the principles of religion, morality, and useful knowledge, should be doomed to struggle with indigence and contempt? To accomplish most effectually the purposes of the institution, the salaries of school-masters ought to be augmented. A more liberal provision would encourage men of character and abilities to undertake the office. But, if no measures shall be taken to ameliorate the condition of the parish school-masters;—if poverty, with its usual attendant, contempt, shall continue to be their portion;—it may be expected, that in a short time, few men of talents or of merit will be found to undertake the laborious task. The education of the young will either be neglected, or fall into the hands of persons destitute of the requisite qualifications. The great body of the people must of course sink into ignorance, and become altogether insensible to every principle and obligation that can restrain their passions, and bind them to duty: a situation which, however agreeable to the sentiments and views of those who consider them as born only for drudgery and submission, must render them more liable to deception, less apt to bogle at the commission of crimes, and a most formidable and dangerous engine in the hands of the desperate and designing.

It has been urged, as an argument against augmenting the school-masters salaries, that such a measure might render them so far independent of the school-fees, as to make them indolent and negligent in the discharge of their duty. In answer to this, I would ask whether four times their present salary could render their circumstances so easy and independent, as to produce the supposed effect. Men, whose sentiments and taste have been cultivated by a liberal education, who hold an important station in society, and who must naturally wish to live in such a style as to support the respectability of that station, will find that the sum of 30 l. or 40 l. is insufficient, even upon the most economical plan, independent of school-fees and other perquisites.

But, supposing an augmentation of salary should have a tendency to render them negligent, the danger will be very generally prevented by a sense of duty, a regard to reputation, the love of esteem, and the desire which every man feels of living respected and happy among his neighbours. Or, should these considerations in any instance fail, the heritors and minister of the parish have a right to superintend the conduct of the master, and to insist upon the faithful discharge of his duty in all points.

There are others, I am sorry to say, who reprobate the establishment of parish-schools altogether, and are of opinion that no public encouragement or support should be given to such an institution, alledging, that the education of the lower classes is not only useless, but hurtful; nay, some carry the matter so far, as to

affirm, that it would be much better for society, if the greater part of them could neither write nor read. For, say they, that enlargement of mind which they thus acquire, is apt to render them self-conceited, and discontented with their lot; less tractable and submissive to their superiors; averse to the low and laborious, though necessary occupations of life; and ambitious of situations and employments to which they have no title to aspire.

This notion of public education, is so illiberal, so impolitic, and, in its consequences, so unjust, that I am confident few entertain it, and fewer still will be hardy enough to avow it. Indeed, it is so exceedingly absurd, that it scarcely deserves attention. Absurd as it is, however, it may be improper, as it has been mentioned, to suffer it to pass altogether unnoticed.

Have they, who embrace this wild opinion, I would ask, drawn the line between those classes in society, who are to enjoy the privilege of education, and those who are not? Have they said how far down the scale of rank knowledge may be allowed to descend, and where ignorance is to begin? They do not mean, surely, to exclude farmers, manufacturers, merchants, shopkeepers, tradesmen and mechanics. Without reading, writing, and arithmetic, how could such people manage their affairs with any degree of order or exactness? How could they keep regular accounts so necessary in business, or make out bills to their employers? Gentlemen would find it very inconvenient, I suppose, if their principal servants at least had no education, How unfit for their office would stewards, but,

lers, house-keepers, and principal farm-servants be, if they could neither read nor write? Even common labourers, and common servants, in this country, would often find a total ignorance of letters a great disadvantage. And is society at large to be deprived of a privilege which the great body of the people find so necessary in the common transactions of life, merely to obviate an ideal objection, which, had it any force, can apply only to the lowest and least numerous class?

Again, let me ask, is not Christianity the established religion of this country? Is it not the gift of Heaven to the poor as well as to the rich? Are not all, the servant as well as the master, the peasant as well as the peer, commanded to search the scriptures? And can any man, consistently with his character and profession as a Christian, propose to withhold education from the lower ranks, and thereby render them incapable of reading their Bibles, and other books of religious and moral instruction, so necessary to their improvement in the knowledge of their duty, and their consolation under the toils and hardships of their humble lot?

Permit me to ask further, whether the system of those who hold the opinion in dispute, does not tear from the British Constitution one of its fairest ornaments, and destroy one of the strongest arguments, by which the attachment and veneration of the people can be secured? Talents, abilities, and industry, are the chief distinctions which it professes to acknowledge. These it encourages and protects: and, possessed of these, the meanest and most obscure are permitted to

rise to affluence, to honour, and to power. But how can any man avail himself of this constitutional advantage, if he is arrested at his outset by a regulation excluding him from the very first principles of literature?

I would ask, likewise, whether the dignity, strength, and general prosperity of any nation or state are not greatest, when genius, talents, and abilities, in whatever class or order of men in the community they may exist, are encouraged and permitted to exert themselves without check or controul? And as these qualities do not belong exclusively to any particular rank, nor descend by inheritance in any particular line, is it not incumbent on those, who consult for the public interest, to adopt the most proper measures for the discovery and improvement of them? But can any scheme be devised, that will answer this end more effectually, than the establishment of parochial schools, suitably endowed, and under proper regulations? In these little seminaries of education, while the children are instructed in the first principles of morals and literature, their young minds are opened; scope is given to their several powers and capacities to unfold themselves, and the strength and bent of every particular genius is, in some measure, discovered; by which means a right judgment may, in most cases, be formed of the particular department in life in which they will act with the greatest advantage; and consequently the subsequent plan of education most proper to be followed with that view, can with greater certainty be determined. The advantages, in this respect, of extending the means of education to every

rank in society, are not merely fanciful and imaginary. They are known to be real, from fact and experience. How many men, descended from the lowest classes, have done honour to themselves, and signal service to their country, by the exertion of talents which, but for the little school of their native parish, would have remained for ever useless and unknown?

I have only to add, that the scheme of depriving the lower classes of the means of education, and thereby keeping them in gross ignorance, is inconsistent with the principles of sound policy, and, if acted upon, might, in the present state of things, be productive of the most serious mischief to the State. In this idea I am supported by the sentiments of an eminent philosopher of the present age. Dr Smith, in his celebrated Treatise on the Wealth of Nations, expresses himself, upon this subject, in the following words: "A man, without the proper use of the faculties of a man, is, if possible, more contemptible than even a coward; and seems to be mutilated and deformed in a still more essential part of the character of human nature. Though the State were to derive no advantage from the instruction of the inferior ranks of people, it would still deserve its attention that they should not be altogether uninstructed. The State, however, derives no inconsiderable advantage from their instruction. The more they are instructed the less liable they are to the delusions of enthusiasm and superstition, which, among ignorant nations, frequently occasion the most dreadful disorders. And instructed and intelligent people, besides, are

always more decent and orderly than an ignorant and stupid one. They feel themselves, each individually, more respectable, and more likely to obtain the respect of their lawful superiors; and they are, therefore, more disposed to respect those superiors. They are more disposed to examine, and more capable of seeing through, the interested complaints of faction and sedition; and they are, upon that account, less apt to be misled into any wanton or unnecessary opposition to the measures of Government. In free countries, where the safety of Government depends very much upon the favourable judgment which the people may form of its conduct, it must surely be of the highest importance, that they should not be disposed to judge rashly or capriciously concerning it."

Poor.—The maintenance of the poor is a burden which sits very light upon the landed property in this county. Assessments may be occasionally called for, in seasons of scarcity, when the price of provisions is high: But in few instances are permanent assessments necessary.

The number of the poor, so far as can be collected from the Statistical reports, who receive supply statedly or occasionally, may amount to about 1,200 l.; and the money applied for their support to about 1,800 l., which, as was formerly stated, arises from the collections at the church-doors, the interest of lying stock, the allowance for the pall or parish mortcloth, dues at marriages, and fines levied from delinquents. According to this calculation, every individual, taking them at an average, receives yearly 1l. 10s. This, every one must be sensible, is a very in-

adequate supply. It must be observed, however, that such of the poor as are able to do any thing, contribute in part, by their labour, to their own subsistence; and many of them are indebted to the kindness and private liberality of their neighbours for assistance, when distress, or any other cause, render their necessities more urgent. It is likewise to be observed, that in various parts of the county, especially in royal burghs, and more populous towns, funds have been established by different trades, and by friendly societies, for giving relief and assistance to such of their members as may fall into distress or indigence; by which means, the ordinary funds are relieved from the burden of a considerable number of poor, who, without such charitable institutions, must have come upon them for support.

CHAPTER XVI.

Obstacles to Improvement ; including Observations on Agricultural Legislation and Police.

I. THE want of money has been suggested by some as a principal obstacle to the improvement of their estates ; and I may add, that in some cases, where there is no want of money, there may be a backwardness to apply it to this purpose. In mentioning this, I do not mean to insinuate, that the obstacle is either peculiar to, or generally prevalent in Fife. Many of the proprietors, of all ranks, have paid the greatest attention to the amelioration of their lands. Money has been laid out with an unsparing hand ; and I am proud to say, that their exertions have been equally judicious and successful. At the same time, it must be admitted, that the obstacle does exist, and has, to a certain degree, had its effect.

There are many tracts of land intrinsically good, but so full of stones, or so drenched with water, or so rugged and untractable, as to require a great outlay of money before they can be brought into order. The proprietors are either timid, and cannot think of risking the necessary expences ; or so circumstanced, that they cannot spare the money without embarrassment, perhaps material injury to their families. In

In this case, I can see no way to get the better of the obstacle, but one ; and that is, to let such lands to substantial and intelligent husbandmen, upon such terms, and for such a length of time, as may enable them to execute the improvements with a probable prospect of full indemnification for their labour and expences.

But though improvements may, sometimes, be prevented or retarded by the want of money, there is reason to suspect, that an inclination to apply it to some other purpose, is more frequently the cause. Many chuse rather to place their money in a Bank, or in the Stocks, than to spend it in the amelioration of their lands. And in some cases the taste for expensive living and expensive amusements, is so strong, that the whole income is barely sufficient to supply the necessary means of gratification. But surely, there is no Bank so safe, or which will yield so high interest, as their lands. And if pleasure be the chief object, there can be no comparison between the pleasures that arise from the indulgence of vanity and appetite, and those that flow from a consciousness of being useful to ourselves and to the world. Every man of true taste, will enjoy more satisfaction in beholding his fields well cultivated, than in faring at a luxurious table ; and will find more rational amusement in superintending and directing the operations of rural industry, than in spending his time and his money at the gaming-table, or on the turf.

2dly, *Thirlage*,—Wherever it prevails, is allowed to be a serious bar to improvement. I shall not take up time in tracing the origin, or

in explaining the different kinds of this servitude; especially, as the evil is neither universally nor severely felt in this county; and as, besides, the grievance is now in a great measure removed, by a late successful application to the Legislature. By an act obtained in the last session of Parliament, the dominant proprietor is obliged to relinquish all further claim to this servitude, upon receiving from the proprietor of the astricted lands a fair and equitable compensation. By this law the most objectionable and oppressive species of thirlage is done away; it is now in the power of every proprietor, who feels the burden, to throw it off. It is surprising that a measure, so necessary to the improvement of the country, should not have been adopted at an earlier period. The same principle that led to the abolition of tithes in Scotland, should also have suggested the propriety of abolishing thirlage. Both operate precisely in the same way as a check to the cultivation of the soil.

When the proprietor of the mill is also the proprietor of the astricted lands, which is most commonly the case in Fife, he has it in his power to remove the grievance, without the interference of public authority. Accordingly, the gentlemen, sensible of the inconvenience which their tenants suffer from this servitude, have relieved them from the burden, restricting them only to the extent of the victual used in their own families.

The quantum of multures, payable at different mills, varies in consequence of the different methods followed in exacting them. But the a-

verage amount may be about one-thirteenth part of the corns manufactured. From the mode generally observed at present, in charging multures, there is room for much imposition. The whole dues for the mill-master and his servants, are paid by measure : and their measures are heaped and hand-waved, which can bear no proportion to any legal standard. When this practice was introduced, meal of every kind was sold by measure ; and, in order to make it measure out as far as possible, it was the custom to grind it very fine or small. But, for a considerable time past, meal has been generally sold by weight ; in consequence of which it is made rounder and better, there not being the same temptation to grind it small as formerly. When meal was sold by measure, it was reasonable that the multures should be exacted by measure ; but it is unfair to continue the practice of measuring, especially in the way it is done, now that meal is sold by weight. This evil every proprietor has it in his power to remedy when he lets the mill. Let the mill-master have a fair and adequate allowance for himself and his servants ; but let that allowance be precisely ascertained, and made payable by the standard meal-weight of the country.

3dly, Another circumstance frequently complained of as a check to improvement, is the exorbitant interest sometimes demanded by proprietors for money expended on *inclosing*. Fencing land, when substantially executed, is justly considered as a permanent improvement. Five per cent., therefore, on money laid out this way, is thought sufficient, as the landlord has the le-

gal interest for his money in the meantime ; and as the tenant will be bound to leave the fences in good and sufficient condition, he may expect a rise of rent, at the expiration of the lease, in consequence of, and in proportion to this improvement. Seven and a half per cent., however, is the interest usually required. Some tenants, who know the inconvenience of possessing open farms, will rather comply with the terms, hard as they are : but a far greater number are deterred from inclosing on such conditions. And as this plan is hard and oppressive, so it seems not altogether reasonable. The money laid out by the proprietor on inclosing, may be considered as lent to the tenant, to be repaid at the end of the lease, by the fences he leaves upon the ground. And there can be no good reason why extraordinary interest should be paid for money lent in this way more than in any other way. It may happen, indeed, that the value of the fences, at the end of the lease, may not be equal to the money expended. But the tenant can be bound, in that case, to pay the landlord the difference, upon its being fairly ascertained. This would oblige the tenant to be as economical as possible in the outlay of the money, consistently with the sufficiency of the fences, supposing the execution of the work entrusted to him, and would render him careful in rearing and protecting them, and in keeping them in good repair to the last.

This hardship, however, is becoming gradually less common. As the old leases expire, this point is adjusted and settled with the incoming tenant, and, for the most part, on terms

sufficiently fair and liberal on the part of the landlord.

4^{thly}, The injudicious position of *corn-mills* has been found, in different parts of the county, to have the effect of preventing the improvement of some extensive tracts of excellent ground. The dam-dikes raised to keep in the water, and to conduct it to the mills, is frequently the cause of flooding the adjacent fields, and keeping them in a comparatively waste and unproductive state. An instance of this I had occasion to see about two years ago, in the western part of the county. But, as I understand the affair is now settled between the contiguous proprietors, and the nuisance removed, I shall take no farther notice of it.

A similar case occurs in the parish of Kilmany, on the north side of the county. There a large tract of very rich and valuable ground, to the extent, I am informed, of between 300 and 400 acres, is mostly flooded by the water employed in turning three corn-mills, and the greatest part of it thereby rendered entirely unfit for tillage. Crops have been attempted on some of the driest spots: but, except in very favourable seasons, they have proved very precarious; and in rainy seasons have been entirely lost. Were these mills removed, the whole could be so effectually dried, as to be cultivated and cropped, without risk even in wet seasons. The suppression of the mills could be no public disadvantage. There are other mills in the neighbourhood, so situated as to occasion no damage, and at the same time sufficient to manage all the additional work, which the want of the mills in

question might render necessary. The profits presently arising from them, cannot countervail a tenth part of the damage they occasion. If this large tract of excellent land, at this moment of comparatively little value, were brought under the plough, and completely improved, besides the great benefit resulting from it to the proprietors and tenants, what a considerable addition would it make to the produce of the district where it lies. Such parts of this ground as have been in crop, have been known to yield 16 bolls of oats from the acre, and the oats of such excellent quality as to produce 16 pecks of meal per boll.

This being the case, it must be an object of importance to have the evil remedied as soon as possible. It is natural for man to be tenacious of his rights. But surely no gentleman of liberal sentiments will obstinately hold rights, manifestly injurious to his neighbours and to the public, when full compensation is offered. I must own, however, that where very great advantages result to the public, from the renunciation of private rights, it is highly reasonable that the person who gives up his private rights, should have some share, at least, of these advantages. The value, therefore, of the mills in question ought to be estimated on the most liberal principles. And when this is done, let the several proprietors pay in proportion to the quantity and quality of the lands benefited by the removal of the mills; and let the tenants pay the interest of the money thus laid out, during the currency of their present leases; to which terms their own interest will lead them

readily to agree. This would be fair and equitable for all parties. The owner of the mills receives the full value of his property. The proprietors of the lands can run no risk, as the money is laid out upon their own estates; and, at the termination of the present leases, they may expect a considerable rise of rent in consequence of this improvement.

But as the passions, the prejudices, and jarring interests of individuals, are apt, on many occasions, to throw obstacles in the way, and to retard or prevent the agreement of parties, it would, perhaps, be adviseable to apply for an act of Parliament, not merely with a view to this particular case, but which should extend to all instances of a similar nature through the kingdom; by which means a speedy and effectual remedy could be applied, wherever the evil should be found to exist. And should a law of this kind be obtained, a clause might be introduced, providing, that whoever shall possess land that cannot be drained without bringing up a level through part of his neighbour's ground, shall be authorised to do this, upon paying full damages for the cut. And as, in many cases, such drains could not be made, without benefiting more than one proprietor, the maker of the common drain shall have it in his power to cause each pay a share of the expence, in proportion to his share of the advantage gained; in the same way as, by the existing laws, he can oblige a neighbouring heritor to straight marches, and, if he chuses to inclose, can make him pay half of the expence of the fence upon the march.

Draining is, in all cases, equally necessary, and in many cases, more necessary, than inclosing. There is, therefore, as strong a reason, at least, for the Legislature interposing in the former case, as in the latter.

5thly, Entails.—The effect of entailing lands, as a bar to improvement, was shortly stated in a former part of this survey. To what was then said, I shall only add here, that as the proprietors of estates strictly tailzied, are prevented from laying out money themselves, to any considerable amount, for the improvement of their lands, so they cannot let them to tenants on such terms as will encourage them to make any extensive or lasting improvements. Seldom do entails admit of leases of longer endurance than 19 years; a period too short to induce the tenants to take the whole burden upon themselves.

It is true, an act of Parliament was passed in the 10th of his present Majesty, entitling heirs of entail to improve their estates by granting leases, building farm-houses, draining, enclosing, and excambing, under certain limitations, and to claim repayment of three fourths of the expence from the next heir of entail. By this law, the effect of entails, as a bar to improvement, is partially, indeed, but not completely removed. Upon looking into the act itself, we find that the proprietor may grant leases of 31 years endurance, upon all uninclosed lands; but if enclosed, whatever their condition may otherwise be, the duration of the lease is limited to 19 years. According to the act, no lease can be granted till the former lease be determined, or if for a term certain, be within a year of being determined;

a provision which, in many cases, may occasion a delay of improvement for many years. The act likewise bears, That every proprietor of an entailed estate shall be a creditor to the succeeding heirs of entail for three-fourths of the money which he shall lay out upon improvements. But as the profits arising to himself from the improvements specified, must be inconsiderable, especially if made at an advanced period of life, it is scarcely to be supposed that he will sink money, to any great amount, upon the estate, three-fourths of which only can be reclaimed; when, by a different application, he may have it in his power to enlarge the sum, and to dispose of the whole at his own pleasure. It is provided by the act, That the claim against the succeeding heir shall not exceed four years free rent of the entailed estate, as at the term of Whitsunday after the death of the heir who expended the money. But it is well known, that there are many estates, which twice that sum would be insufficient to put into any tolerable order. And the effect of this limitation, as a bar to improvement, is the greater, that by another clause in the act, it is provided, that, when a sum equal to four years free-rent shall have been expended, and shall remain a subsisting charge against the succeeding heirs, it shall not be lawful for the subsequent heirs to expend any more under the authority of this act. This being the case, is it to be supposed that the succeeding heir, burdened with a debt equal to four times his yearly rent, having, perhaps, a young family to support and educate, and obliged to live in a style, in some measure, suitable to his

rank, will be inclined to subject himself to an additional burden, by expensive and more extended improvements? In short, when the proprietor of entailed lands, has no heir of his own body, or no children to provide for, and when the next heir is only a distant relation, in the improvement of whose fortune he does not feel himself much interested, it is generally found that present profit is the great object, and that no sums of any consequence are laid out upon the estate, without the certain prospect of a large and speedy return.

6thly, The short endurance of Leases is complained of as one of the greatest obstacles to improvement. Under the article respecting leases, it was observed, that on all corn farms, no lease ought to be shorter than 19 years; and if the land, at the commencement of the lease, be in an improved state, this may be a period sufficiently long. But if the ground be in a waste uncultivated state, requiring to be enclosed, drained, cleared of stones, straightened and levelled, fallowed, and manured with lime and dung, a much longer period will be necessary. And yet many proprietors are unwilling to grant leases, even on such land, of a longer duration; a period within which it is impossible for the tenant to execute such expensive and tedious improvements, with safety and advantage. This, I think, must be evident to every man who has any knowledge of the business.

Let the farm be of any given extent; let it consist, for example, of 200 acres; suppose the tenant to be intelligent, industrious, and possessed of a sufficient capital: let the proprietor be

at the expence of enclosing, or at least of putting up the fences, and the tenant obliged to lay down the materials; even in these favourable circumstances, not more than 10 acres can be improved annually. The farm must depend chiefly upon itself for dung; three-fourths of the farms in this county not having the opportunity of purchasing this kind of manure, or at least under the necessity of bringing it from a great distance, and buying it at a very dear rate. The operations before mentioned, will require great strength of men and cattle, and consequently a great outlay of money. Before the farmer can see a blade of corn above the ground, his expences per acre, including rent and seed, will not be less than from 8 l. to 10 l.

It may be alleged, that as the improvement of the farm goes forward, the tenant will have it in his power to cultivate a larger portion of his farm every year progressively, in consequence of the increased supply of manure which it will be able progressively to produce. This, however, is scarcely to be supposed. In a few years, the improved fields will need a repetition of manure, besides the continued labour and attention which they will necessarily require. And it is well known to every experienced farmer, that even a well cultivated farm can spare but a small proportion of the manure it produces, to be otherwise applied. Of this, proprietors themselves are abundantly sensible. Hence, the solicitude they discover to prevent the tenant from putting any of his straw or fodder from off his farm, lest the land should be thereby injured. Indeed, every prudent husbandman will be cau-

tious how he sells any part of his straw, well knowing that this must diminish the necessary supply of manure, and thereby hurt both the land and his own interest.

Upon this supposition, then, a farm of 200 acres cannot be completely improved in a shorter period than 20 years. And what is true with respect to a farm of 200 acres, is equally true of a farm of any other size; because every thing else must be in proportion. Let it be granted, however, that the improvements may be completed in 17 or 18 years; yet, even in that case, no tenant can be supposed to proceed uniformly in his operations to the last, under a lease of 19 years. At the commencement, indeed, he goes on with spirit, and grudges no necessary labour or expence, knowing that he will be amply reimbursed. And this he may continue to do, during the first ten or eleven years of his lease: at which period he will have completely improved 100, perhaps 120 acres of his farm. He now naturally pauses: he looks forward and sees the termination of his lease fast approaching. His encouragement to proceed with the same spirit as before, is greatly diminished. From the labour and expences upon new improvements for the next three or four years, he observes no tempting profits can be expected; and, during the last three or four years, instead of making any profit, he knows he must be subjected to considerable loss, if he shall be obliged to leave the farm.

Besides, it is to be observed, that the part of his farm which remains unimproved towards the end of the tack, will readily be the worst, and

the most difficult to cultivate. For it is natural to suppose, that, so far as he can do it, consistently with any regular plan, he will turn his attention, at first, to those parts that can be improved at the least expence, and will yield him the largest and readiest returns.

He next considers the 100 or 120 acres which he hath brought into order, and, after serious deliberation, concludes, that to confine his attention henceforth to the land already improved, and to apply to this all his manure, and to keep it in high order, will be infinitely more profitable than to throw away his money upon improvements, the advantages of which must be uncertain, and may be enjoyed by another.

Let us now suppose the endurance of the lease to extend to 38 years, and observe the consequences. The tenant has full time to carry on his plan of improvement, and to complete it in the most substantial manner. This he will be able to accomplish during the first 19 or 20 years, all suspension or relaxation of industry being effectually prevented by the certain prospect of reaping abundantly the fruits of his labour. And at the end of his lease, he will be in a condition to offer an increase of rent greater perhaps than any other can do. By the accelerated improvement, and the consequent increase of produce, the State will be greatly benefited, and the proprietor will come in for a fair proportion of the advantages.

But, perhaps, the proprietor may alledge, that, at the expiration of 19 years, he has reason to expect a rise of rent upon such a farm, even though the improvements should be carried no

further than the present tenant may see it for his interest; and therefore may think it hard that he should be excluded from this rise for so long a period. Whether or not this be a hardship, must depend very much upon the terms of the original bargain. It is to be supposed that a tenant will give more rent, if the lease shall extend to 38 years, than if limited to 19; and in this way the proprietor may receive the full equivalent of any advance of rent he could reasonably expect.

But whatever be in this, as the case stands at present, it is evident, that between the backwardness of landlords to grant long leases, and the hardships which tenants suffer under short ones, a considerable portion of the lands in the county are kept in a waste and unproductive state, and at best can make but slow advances in improvement.

In order to remove this great obstacle to the progress of agriculture, which short leases, and the jarring interests and mutual jealousies of proprietors and tenants, had unhappily thrown in the way, a plan of a lease was devised by the late Lord KAIMS, a gentlemen not more distinguished, perhaps, by his abilities as a lawyer, than by his knowledge of husbandry. As this plan has been highly applauded by some good judges, I shall state it to the public, as it has been particularly detailed by Doctor ANDERSON, in his Agricultural Survey of Aberdeenshire; and the rather, as some observations upon it, which I mean to suggest, could not otherwise be so well understood,

“ His Lordship proposed that the lease should extend to an indefinite number of years, consisting of fixed periods, at the end of each of which a rise of rent should take place, with permission for the tenant, at the period of each of these rises of rent, to give up his farm, if he shall see proper ; and granting a similar power to the landlord, upon proper terms, to resume his land, if he shall think fit. The particulars of this contract, and the grounds on which they rest, are as under.

“ He assumes it as a postulatum, that a landlord and tenant are capable of forming a tolerably just estimate of the value of the land in question for a short period of years, such as it is customary to grant leases for in Scotland : say 21 years. And having agreed upon these terms, which, for the present, we shall call 100*l.* rent, the tenant expresses a wish to have his lease extended to a longer period. To this the proprietor objects, on this ground, that it is not possible to form a precise estimate of what the value the ground may be at the end of that period. He has already seen that ground for the last 21 years has increased much more in value than any person at the beginning of that period could easily have conceived it would have done, and therefore he cannot think of giving it off just now for a longer period, as a similar rise of value may be expected to take place in future. This reasoning appears to be well founded, and therefore, to give the landlord a reasonable gratification, he proposes that it should be stipulated, that if the tenant should agree to give a certain rise of rent at the end of that period,

suppose 20l., the landlord should consent that the lease should run on for another period of 21 years, unless in the cases to be after mentioned.

“ But as it may happen that this 20 l. now stipulated to be paid at so distant a period, may be more than the farmer will find he is able to pay, an option should be given to him to resign his lease, if he should find that is the case, by giving the landlord legal notice one year at least before the expiry of the lease; but if that notice be omitted thus to be given, it shall be understood that the tenant is bound to hold the lease for the second 21 years, at the rent specified in the contract. And if the landlord does not give the tenant warning within one month after that period, it shall be understood that he too is bound to accept of the stipulated additional rent for the 21 years that are to succeed.

“ It may, however, also happen, that the sum specified in the lease may be a rent considerably below the then present value of the farm: or the proprietor may have very strong reasons for wishing to resume the possession of that land, or to obtain an adequate rent for it: a power therefore should be given to him in either case to resume the lands, if he should so incline. But as a great part of that present value may be owing to the exertions of the farmer, who has laid out money upon the farm, in the hopes of enjoying it for a second period of 21 years, it would be unjust to deprive him of this benefit, without giving him a valuable consideration for that improved value. On this account it should be stipulated, that in case the

proprietor at this time resumes the farm, he shall become bound to pay to the tenant TEN years purchase of the additional rent he had agreed to pay; which in the example above stated would be 200 l.

“ But the land may be worth still more than the 20 l. of rise mentioned in the lease, and the tenant may be content to pay more, say 10 l., rather than remove, ; and he makes offer accordingly to do so. In that case the landlord should be bound either to accept that additional offer, or to pay *ten* years purchase of that also; and so on for every other offer the tenant shall make before he agrees to remove from the farm.

“ In this way, the landlord is always certain that he can never be precluded from obtaining the FULL value for his land, whatever circumstances may arise. And if the tenant shall prove disagreeable, so that he would wish rather to put another in his place upon the same terms, it never can be any hardship upon the landlord to pay the stipulated sum; because it would be the same thing to him as if he bought a new estate at TEN year's purchase, free of taxes: a thing he never can expect to do. It is indeed true, that it would be more advantageous for him to allow the present tenant to continue: and therefore this alternative will be always, unless in very extraordinary cases, accepted of, as it ever ought to be; and thus the tenant's mind is impressed with a conviction that he will continue in his possession; a conviction that ought ever to prevail, because it stimulates to industry in the highest degree.

“ And as the tenant is thus certain, that, at the very worst, his family must be entitled to draw a reasonable remuneration for the exertions of his industry, he can never find the smallest tendency to slacken his endeavours in any way.

“ By stipulating in the original lease, in the same manner, that, at the end of the second 21 years, the lease shall be continued for 21 years more; and so on at the end of the third, and fourth, and any farther number of periods of 21 years, on agreeing to pay a specified rise of rent; reserving to each party the same privileges as above described, the lease might be continued to perpetuity, without either party ever being in danger of having an undue advantage over the other. The tenant will always be certain of having a preference given him over every other person, and will, of course, go on with unceasing exertions to better his land, which will, of necessity, tend to augment the income of the proprietor much more than could have happened under any other system of management.”

At first sight this appears to be the most perfect plan of a lease ever yet devised; and, to be completely calculated, at once to accelerate the improvement of the soil, and to secure the interest of both landlord and tenant. And yet, if it does really possess the excellence ascribed to it, how comes it that it has never found its way into general practice. I have never heard of its

being, in any instance, adopted. This, surely, leads to a suspicion that it labours under some material defect. It may be deemed presumption in me to find fault with a plan which can boast of such high authority and approbation. But, with all due deference to great names, there is one objection which strikes me strongly, and which appears insurmountable. The objection is, that the interest of the proprietor is not sufficiently attended to and secured.

To accelerate the improvement of the soil, and to prevent all suspense or relaxation in carrying it forward, is the great leading object. For the accomplishment of this, it is proposed to bring the landlord and tenant together on such terms, as may most effectually encourage the vigorous and uninterrupted exertions of the latter, and, at the same, secure to the former every advantage from the cultivation of his lands, that he can, in justice, claim. With this view the lease is made to extend to an indefinite number of years, but, at the same time, divided into periods of 21 years, and stipulating a certain rise of rent to take place at the commencement of each period. At the termination of every period, the tenant is at liberty to resign his farm, if he shall think fit, upon giving his master notice in due time, or to continue in possession, upon paying the rise-rent fixed in the lease; unless the proprietor shall think proper to resume the possession of his lands, which he is entitled to do; but upon the express condition that he pay the tenant 10 years purchase of the stipulated advance of rent for the next period, and of any additional sum he may chuse to offer.

And this allowance is given to the tenant as an incitement to persevering industry, and a reward for his improvements.

Now, this scheme would be perfectly right, were the rise of rent universally owing to the tenant's improvements, which seems to be the principle upon which it proceeds. But this, it is well known, is not always the case. Other causes, besides the amelioration of the soil, may be assigned,—the fall of the value of money, for instance. A farm which, under the last period of 21 years, paid a rent of 100 l., may, on this account, yield 120 l. during the currency of the next period, without having received any improvement. The reason is plain: The same proportion of the produce which, during the former period, brought 100 l. at market, will now yield 120 l. Here, then, there is in fact no real rise of rent; because the same quantity of produce pays the rent now as formerly; and 100 l. was of as much value to the landlord, under the former period, as 120 l. is under the latter. Will any man then say, that it is just and equal that the landlord should pay this 200 l., being the ten year's purchase of the rise-rent, when that rise of rent is owing, not to the tenant's industry, but to the depreciation of money?

Again, a growing taste for husbandry may encrease the number of candidates for farms. This will naturally produce a competition, and a rise of rent will be the certain consequence. Or, in a great manufacturing county, the thriving state of the manufactures, or even a particular period of uncommon prosperity, will have

the effect of raising the rents. The demand for provisions will, in these circumstances, be increased, and the price of grain will, of course, become higher.

Many other causes, such as an increased population, in consequence of the establishment of a manufacture, or any other public work in the neighbourhood; making or repairing the public and private roads; the benefit of a canal; the discovery of new means of improvement in the farm, or in the vicinity, &c., will produce a rise of rent, independent of any improvements antecedently made upon the soil.

To the truth of these observations fact and experience will bear testimony. In my own neighbourhood, I know several farms which, at the end of the last lease of 19 years, were in as bad, perhaps a worse state, than at the beginning; and yet, under the next lease, brought a rise of rent from 50 to 100 per cent. from good substantial tenants. Now, let us suppose one of these farms to have been let during the last 21 years upon the plan under consideration, and see how the case will stand. Supposing the rent 100*l.*, the rise for the next period will be 20*l.* The landlord wishes to remove a lazy spiritless tenant, who has rather injured than improved his farm; and, besides, he has an offer of 200*l.* for the farm from a substantial and industrious tenant. The sitting tenant, however, is entitled, by the lease, to continue in possession, unless the landlord give him ten year's purchase of the rise-rent, and of what additional advance he may choose to offer. Let us suppose that he offers

60 l. advance. In that case, the landlord must either refuse the offer of 200 l. yearly rent, and suffer his farm to continue in the hands of a sloven, to his own great mortification, and to the great loss of the community, or pay the present tenant 600 l. to get quit of him. In these circumstances, can any man say that the interest of the landlord is properly attended by such a plan? He pays the tenant 600 l. without any equivalent, and the tenant receives that sum without having done any thing to entitle him to it. Let it be admitted, that the tenant has a right to 10 year's purchase of such proportion of the rise-rent, as can be fairly placed to the account of his improvements; but more than this he cannot, in reason and justice, claim.

Could the lease in question be so altered and modified, as to obviate this objection, it appears to be, in other respects, unexceptionable. I pretend not to say, however, how this can or ought to be done. I shall only observe, that as the great object of the plan is to promote the speedy and complete improvement of the country, and with that view holds out the ten year's purchase of the rise-rent to the tenant, as an incitement to persevering industry, some alteration, such as the following, might answer the purpose with greater effect, and at the same time completely secure the landlord's rights. It might be provided in the lease, that in case no part of the rise-rent can be fairly ascribed to the tenant's improvements, he shall be obliged to remove without any allowance. If any proportion of the rise-rent, under two-thirds, can be placed to the account of his improvement,

then he shall be entitled to 10 year's purchase of such proportion. But if two-thirds and upwards of the rise-rent offered are clearly owing to his improvements, in that case, though his claim in point of justice cannot extend so far, yet, to encourage him to unremitting exertion, he shall be entitled to ten year's purchase of the whole rise-rent. To ascertain how much of the rise-rent is to be stated to the account of the tenant's improvements may be difficult; but it is not impossible. A survey of the farm, at the commencement and termination of the different periods, by competent judges, and a fair calculation of the difference, in the quantity of grain, the farm is capable of producing, and in the number of cattle it can maintain, at these periods, would enable parties to form a judgment of the matter, sufficiently exact for the purpose in view.

But if this point cannot be adjusted in an equitable and satisfactory manner, the following plan, or something similar to it, might be adopted.

Let the duration of the lease extend to 42 years, divided into two periods of 21 years each: That the proprietor may not suffer by the depreciation of money during so long a lease, let the rent be fixed *in kind*, and made payable by the *county fiars*, and let a reasonable advance of rent, such as the parties can agree upon, be stated and made payable at the commencement of the second period. As the speedy and extensive improvement of the soil is a principal object, and as the length of the lease is designed to encourage and reward the exertions of the tenant, let

all the improvements, judged necessary to be made upon the farm, be specified in the lease, and the tenant taken bound to have them executed during the currency of the first period. And in case he shall not accomplish these improvements in the time agreed upon, let this failure be a forfeiture of his lease, and the landlord be entitled to remove him, and resume the possession of his land. Let the tenant be at liberty to resign his farm, if he shall think proper, at the end of the first period. And, upon his removal, whether at the end of the first or second period, let him be bound to put and to leave his farm in the state and under the conditions mentioned at the conclusion of the Section respecting leases, (see page 122.). And should any difference or dispute arise between the landlord and tenant, respecting the implementing the above, or any other conditions contained in the lease, let the parties be obliged to refer such differences and disputes to the judgment of neutral men mutually chosen, and to abide by their determination.

By this plan the interest of both proprietor and tenant are consulted and provided for, and, at the same time, the most effectual provision made for hastening and perfecting the improvement of the farm.

Dr Anderson speaks with rapture of the astonishing height to which he supposes improvement might be carried, in the course of a hundred years, by Lord Kames's plan. But I should imagine, that the greatest part of the farms in Scotland, if not improved completely within the period of 42 years, supposing them

under proper management, and let on the terms just now mentioned, stand but a poor chance of ever being improved at all.

The plan which I have ventured to recommend, it is to be observed, is not meant for farms of every description, but chiefly, if not solely, for those lands that are in an open, waste, and uncultivated state; and, therefore, have suggested those terms and conditions only which appeared to me most necessary and best calculated to accelerate and perfect the improvement of such lands, and to which, at the same time, neither proprietor nor tenant could have any reasonable objection.

When land is once brought into a complete state of cultivation, the endurance of leases will then be a matter of less importance. If the period is not less than 19 or 20 years, the tenant can have no reason to complain, as he enters to his farm in high condition, and can be subjected to no extraordinary expences to put or keep it in order. On the other hand, if the rent be fixed in kind, it is of no consequence to the landlord, so far as rent is the object, whether the land be let for 20 or for 200 years. For, as the land is supposed to be in a complete state of improvement, and consequently cannot be expected to yield a greater increase at any future period than at present; and as the stipulated rent is supposed to be a fair and full proportion of the produce, the proprietor can never expect any further rise of rent, than what may be occasioned by the rise of prices; and this, by the tenor of the lease, he enjoys to the last, how long soever its endurance may be.

The truth is, as was formerly observed, there is here no real rise of rent. The proportion of produce, allotted for rent, continues the same; and, upon the supposition that the land is as productive as it will ever be, and the quantum of rent fairly fixed, the landlord can never, in justice, require or expect more; and, therefore, though he may reserve an advance of money, he receives only what is equivalent to his proportion of the produce, in which the rent is made to consist. And the tenant, though he may pay more money to the landlord, pays no more than the quantity of produce, stipulated as rent, brings him at market.

And as this plan will secure to the landlord the full value of his lands in perpetuum; so it will prevent any real fall of rent, which, during long leases, the depreciation of money may occasion. Should the proprietor be obliged to receive the same sum of money for his lands, during a long period of years, while, all the time, the value of money may be gradually decreasing, his rents would fall proportionally; for the tenant would be able to pay his rent with a gradually decreasing proportion of the produce of his farm.

Suppose, for example, a farm let for 100 l. of money rent, and the average quantity of grain, during a lease of 19 years, necessary to raise this sum, to be 150 bolls. Suppose, during the next period of 19 years, 100 bolls shall, at an average, produce the same sum. If then the landlord shall continue, during the second period, to receive the same money as under the first, his rent will be actually diminished one-third. His

tenant can now pay his rent with two-thirds of the grain requisite under the former periods. And to the proprietor 100 l. is of no more value now, than 66 l. 13 s. 4 d. was, during the preceding 19 years. But had the 150 bolls of grain, necessary to raise the 100 l. of money rent under the former period, been fixed as the rent, it is plain that, under the next period, the same quantity of grain, without prejudice to the tenant, would have raised the money payable to the landlord, from 100 l. to 150 l.

Lastly, Taxes and Public Burdens.—On this ground there is little reason to complain. These, if heavy, and imposed during the currency of a lease, as they form an unexpected addition to the stipulated rent, may distress and embarrass the farmer, and, in some cases, may be materially hurtful. But if known, previous to his entering to the farm, they cannot be considered as an obstacle to improvement, so far, at least, as the tenant is concerned; because he has it in his power to insist upon a diminution of rent, in proportion to the extent of the tax or burden imposed.

The road-money is one of the principal burdens to which the farmers in this county are subjected. But this, even though imposed during the currency of the lease, cannot be considered as a material hardship, as the advantages, which they will derive from the improved state of the roads, will more than compensate the duties they are liable to pay on this account. And at the end of the lease the burden must fall upon the proprietor; as, making a new bargain, the tenant will, and in prudence ought to

take care, that whatever sum of money he shall pay as occupant, whether in the name of rent, or under any other designation, shall be no more than the farm can bear.

The Assessed Tax Act bore, with peculiar severity, upon the farmers of this county; and, had it continued in force, great numbers of them would have been much distressed, and obliged perhaps to quit their farms.

By that act, the income of every tenant was to be held equal to three-fourths of his rent, if under 100 l. But if his rent should be 100 l., or upwards, his income was to be held equal to his rent. It would be presumption in me to question the principle upon which this mode of rating the income of tenants was founded. But one thing is clear, that if the principle be just, farming must be a very lucrative business. For it is demonstrable, that the capital employed on farms of 100 l., and upwards, must yield at least from 25 l. to 35 l. per cent. per annum. A farmer's capital can rarely be calculated lower than three times his yearly rent, which, in order to produce an income equal to his rent, must yield $33\frac{1}{3}$ per cent. profit. But supposing the capital to be calculated as high as four times his yearly rent, even in this case the profit must be 25 l. per cent. It is true, some farms are so circumstanced, as to require a stock equal to five or six rents. But it is equally true, that the state of such farms may, and generally does, require a very great proportion of the stock to be sunk immediately upon improvements, the effect of which is uncertain, and for which, though ultimately successful, an ade-

quate return cannot be expected, during many years.

What may be the profits of farming in England, I know not. But I am confident that few farmers in Scotland make above 10 per cent. of their capital; numbers of them, not above 5; and, in many cases, the most unremitting industry, and the most rigid economy, are necessary to enable them to pay the landlord, and maintain their families; so high are the rents at present, and so great, of late, has been the rise upon the price of labour.

But all the hardships felt by the tenants under the assessed tax act, are now completely removed by the new act, laying a tax upon *Income*: An act which exhibits a plan of taxation, the most unexceptionable, and, at the same time, the most productive, that human wisdom, perhaps, ever devised. Indeed, to contrive a scheme of taxation so complex in itself, and so extensive in its operation, and, at the same time, to frame it in such a manner, as to bear equally and proportionally upon all, is an effort of political wisdom, perhaps, beyond the reach of the human mind. Objections have, accordingly, been urged against the scheme, some upon the the ground of inequality, some, probably, from the mere wantonness of opposition; and others, I doubt not, from the best intentions. But when these inequalities are of trifling consideration, and not materially or extensively hurtful, I must esteem that man a narrow minded, churlish being, who will venture to complain at such a time as this. The crisis is awful and deeply interesting. We are struggling

with a formidable, an ambitious, and an implacable enemy, for every thing we hold most valuable and dear. It must, therefore, be the duty of every good subject to support Government, and to contribute what he can to give energy and success to every measure necessary for our defence.

In that part of the act which respects the farmers, humanity and sound policy are equally discernible. Had the tenantry been kept under the very unequal pressure of the former act, numbers would have suffered, and been obliged, most likely, to give up their farms. Rents must have fallen, and, of course, the taxable income of the kingdom must have been diminished. But by the provisions of the income act, all these evils will be prevented. The only difficulty that remains is, to know how to ascertain the farmer's income. Three fourths of the tenants keep no regular and exact accounts, and are, in a great measure, ignorant of the profits they reap from their farms. And if the farmers themselves do not know, how shall any other be able to ascertain it?

A method, however, may be devised, by which this may be easily done, and, at the same time, all oppression, on the one hand, and all evasion, on the other, effectually prevented.

That the farmer's income may be rightly ascertained, he ought to be considered in the same light as a merchant or manufacturer, who has a certain stock or capital, which he wishes to employ in business. Husbandry is the trade he prefers. He takes a farm proportioned, as nearly as circumstances will permit, to the extent of

his capital, and on this he lays out his money. Considering the farmer, then, in this light, and in this light he certainly ought to be considered, the profits he may be reasonably supposed to draw from his farm, after the rent, and the necessary expences of management, are deducted, ought, in strict justice, to be held as his income. But, in order to ascertain the amount of these profits, the knowledge of his capital is necessary. And the amount of his capital may be determined, with sufficient accuracy, by the quantum of his yearly rent. Those, who have paid particular attention to this subject, have given it as their opinion, that the capital employed in husbandry, may amount to thrice the yearly rent, or at most to three rents and a half at an average. And though, in many cases, the farmer's profits may not exceed five cent, and, in some particular instances, may reach 15 per cent. of his capital, yet that 10 per cent. may be a fair medium. Ten per cent. then, of a sum equal to thrice his yearly rent and a half, will be the farmer's income. Suppose, for example, the rent to be 300 l., the capital, according to the proportion above stated, will be 1,050 l., and 10 per cent. of this sum will produce an income of 105 l.

I know that farms, in a high state of cultivation, and yielding from 2 l. 10 s. to 3 l. and upwards per acre, may be stocked with less than three rents and a half. But as the occupant possesses land that requires no extraordinary outlay of money, and is in a condition to yield not only an ample, but an immediate return, it is not unreasonable that he should be rated a

little higher than the medium. There are other farms, again, which, from their unimproved state, may require a capital equal to five or six rents. But as the farmer, in this case, may be under the necessity of sinking considerable sums on expensive improvements, and of depending upon his stock, for the support of his family and farm servants, during some years, it is reasonable that he should be rated easier, in consideration of these disadvantages. It will be said, perhaps, that by this mode of rating the tenants, a great proportion of them will escape altogether. And why not? If their income be fairly estimated, is it not equitable that they should be allowed to enjoy the exemption designed them by the act?

At the same time, I am persuaded that few of the tenants would have complained, though the minimum of the taxable income had been fixed much lower than it is by the act, which might have been done without any sensible hardship to them or to the community at large. Had it been taken as low as 40 l., and all incomes of 40 l. and under 50 l., rated at 1 d. per pound; and all at 50 l. and below 60 l. at $1\frac{1}{2}$ d. per pound, this would have comprehended a very numerous class, and have raised a large sum, without being, in the least, felt or grudged. The farmers, in this county, I am certain, would not have objected. They are a loyal body of men, and firmly attached to the existing Government; and therefore have no wish to stand aloof, or to be excused from bearing their just share of those public burdens which, for the safety of their country, it may be necessary to impose.

CHAPTER XVII.

Miscellaneous Observations.



SECTION I.

AGRICULTURAL SOCIETIES.

THERE are two Societies of this kind in Fife ; one called the FIFE FARMING SOCIETY, and the other, the INVERKEITHING CLUB. The former was instituted about six years ago, and at present consists of nearly 200 members. The principal objects aimed at by this institution, are, a mutual communication of discoveries and improvements in husbandry ; common protection against thieves and depredators who shall unjustly invade their property ; and raising a joint stock or capital for the benefit of their widows and children, and of members reduced to distress or indigence. Members pay one guinea at their entry, and half a guinea yearly. None are admitted but men of good character ; and such members, as shall be found guilty of crimes and misdemeanors punishable by the laws of the land, are liable to expulsion, and a total deprivation of all benefit from the Society's funds. No member can draw any thing from the fund till it amount to 500 l. ; neither can any one

be entitled to any allowance, until five years after his admission. The allowance, fixed for a member fallen into distress or indigence, is 30 s. per quarter; but this allowance is granted upon the express condition, that he has not brought the distress upon himself by drunkenness, or any other kind of disorderly conduct. And during the time he is receiving the allowance, if he shall be found guilty of a dissolute or immoral behaviour, it is put in the power of the managers to deprive him of it. The widow of a member is allowed 25 s. quarterly, so long only as she remains his widow, and maintains a good character. And the children, when no widow is left, are entitled to draw the half of what their father contributed. If a member shall die, and leave neither widow nor children, his next heir, or whoever shall be appointed by him, shall be entitled to the half of what he has contributed, after deducing a proportional share of the expences incurred by the Society since his entry.

This Society is, at present, in a very respectable and flourishing condition. The funds already amount to about 500 l., and all its affairs are conducted with great order and regularity.

The *Inverkeithing Club* was instituted earlier than the Society just now mentioned: but its members are not nearly so numerous. The object is more limited than that of the other; being chiefly designed to increase and diffuse the knowledge of agriculture among themselves, and to promote the improvement of practical husbandry, by the institution of ploughing

matches, and the distribution of premiums among those who excel upon these occasions.

SECT. II.—WEIGHTS AND MEASURES.

THE measure by weight used in this county is chiefly of three kinds, commonly known by the names of English, Dutch or Amsterdam, and Tron. The English pound contains 16 oz. the Dutch pound $17\frac{1}{2}$ oz. nearly, and the Tron pound 22 oz., all Averdupoise weight. The stone of each denomination contains 16 of their respective pounds.

Flour, bread, pot-barley in retail, and all kinds of groceries, are sold by the English weight: Flax, wool, butter, cheese, tallow, hides, hay, are sold by Tron weight: Butcher-meat, in the district of Kirkaldy, is sold by the Tron weight; but in the other districts by the Dutch weight. Meal of every kind is sold here, as in all the other counties of Scotland, by the Dutch weight. But though meal be generally sold by weight, yet, as it was anciently sold by measure, the old terms are still used. Thus, we talk of a boll, a firlo, a peck, a lippie of meal. Eight stone is the boll, 2 stone the firlo, 8 lib. the peck, and 2 lib. the lippie.

Grain is understood to be sold by the Linlithgow measure; wheat, beans, pease, and rye, by the standard firlo containing $21\frac{1}{4}$ Scots pints, each pint 103,405 cubic inches; and oats, barley, and malt, by the firlo of 31 Scots pints. Two Linlithgow bolls, wheat measure, is about

2 per cent. better than the English quarter : and the barley boll is about $\frac{3}{4}$ of a pint less than 6 Winchester bushels. Potatoes are measured by the barley firlo, and as many are allowed to the firlo as can be thrown on with a shovel.

The Scots ell of 37 inches, is still in use in this county ; but most kinds of goods are sold by the English yard of 36 inches. When land is let by the acre, or when grass or growing corn are sold, the Scots acre is the measure commonly used. The Scots acre contains 5,760 square yards of 37 inches. And 4 Scots acres are equal to 5.0284 acres English ; the English acre consisting of 4,840 square yards of 36 inches. Land is measured here, as in other counties, by a chain, 24 Scots yards, or 74 feet in length, divided into a hundred links of 8,888 inches each, and consequently ten square chains make exactly an acre.

The diversity of weights and measures employed not only in this county, but through every part of Great Britain, has been often complained of as a great inconvenience, and the cause of much uncertainty and confusion. By some, however, it is alleged that the evil appears more formidable in theory than it is found to be in practice. Those who trade in grain or any other commodity, whether at home or with foreign countries, very soon understand the proportion which the weights and measures in different places bear to one another ; and find no difficulty in adjusting their prices accordingly. And with respect to the internal commerce of a county, the different weights and measures, in use, are so well known in general, and are be-

come so familiar, through practice, that the people cannot easily mistake or be imposed upon. They know, not only the proportion they bear to one another, but the several kinds of goods to which they are severally applied.

But though all this may be in a great measure true, it must be confessed, that a more general uniformity would be very desirable, as it would contribute to remove all suspicion and uncertainty in commercial transactions, and enable buyers and sellers to settle prices with greater ease and precision.

Some, who have attended much to this subject, and these, too, men of the greatest abilities, have pronounced the scheme of reducing the weights and measures to a fixed and uniform standard, to be extremely difficult, if not impracticable. To me, I confess, the difficulty does not appear unsurmountable. This may be owing, perhaps, to my not understanding the matter thoroughly: And confidence, it is well known, is never greater than when it proceeds from ignorance. But whether my ideas be right or wrong, to mention them, as others have done theirs, can do no harm. Might not the Winchester bushel be established by an act of the Legislature, as the measure of capacity for all dry goods; the Averdupoise pound, with its parts and multiples, as the measure by weight; the English wine gallon, containing 462 cubic inches, with its parts and multiples, as the measure for liquids; and the English yard of 36 inches, for measuring all lines, surfaces, and solids, for the whole kingdom? Some confusion and uncertainty might, probably, take place at first; but this

would very soon be at an end. And if there are any servitudes upon the lands payable in kind, the matter might be easily adjusted, by attending to the proportion which the present measures bear to the standard to be hereafter used. The above weights and measures are particularly specified, not because they have in themselves any natural right to a preference, but merely for example's sake. Parliament may adopt these, or any others they may think proper. The only thing to be attended to, in this respect, is to fix upon such as are best known and most familiar to the generality of the people, because such could be brought more easily and more quickly into general use.

In order to fix a standard for the several weights and measures henceforth to be used, the following method appears to me the easiest and most simple. Let the inch be adopted as the radical measure, by which all the rest shall be determined and adjusted. This measure, for centuries back, has varied less, perhaps, and, at this moment, is more uniform in Britain, than any other. But should any diversity be suspected, this may be easily discovered by comparison, a fair medium struck, and the inch henceforth to be used, absolutely fixed. When this is done, let the foot, as usual, be 12, and the yard 36 of such inches. And let the inch, with its parts and these multiples, be the standard measure for lines, surfaces, and solids; ordaining, at the same time, that quantities of whatever denomination, whether miles, acres, &c. ascertained by this measure, shall be fixed and uniform all over the kingdom; so that, sup-

posing the English measure adopted, an acre shall every where consist of 4,840 square yards, a mile of 1,760 yards, a yard of cloth, of 36 inches, &c.

There is at present a measure of capacity in use, and very generally known, called the Winchester bushel. By law, this bushel ought to contain 2150.42 cubic inches. To avoid the inconvenience arising from the fractional parts of a small integer, let it be declared that the bushel shall contain 2150 cubic inches. Let it be adjusted with all possible exactness by the inch fixed upon as the radical measure, and appointed to be the only standard for measuring grain, &c. through the kingdom, in all time coming.

There is likewise a weight commonly used, called the Averdupoise pound, 16 of which make a stone English. This pound may not be precisely the same every where. But this is of no moment: Let the Legislature fix upon any one of them, and let its weight in cubic inches of water be ascertained; and for greater exactness, distilled water may be used. Let this pound, with its parts and multiples, be the standard, and the only weight to be used in the kingdom. And the number of cubic inches of water, which it is found at present to weigh, will serve to preserve its uniformity and sameness in all places, and in all time coming.

The same plan can be observed with respect to liquid measure. By determining the contents in cubic inches, the standard measure, whatever it may be, can be adjusted with exactness, and perpetually preserved.

The weights and measures being, in this manner, fixed and adjusted, the head burgh of every county ought to be furnished with a complete set of them, constructed of the best and most durable materials, for the purpose of regulating all those that may be used in their several districts. And as the inch is the radical measure, upon which all the rest depend, and to which recourse must be had, whenever any adjustment in future may be requisite, it must be preserved with the utmost care. For this purpose let a piece of brass, or any other solid and durable substance, such as may be least capable of expansion, contraction, or waste, be chosen, and let the inch be marked upon it with all possible accuracy. Perhaps it would be advisable to make it three feet long, divided by inches, as the same instrument would answer as a standard for the yard and foot, as well as the inch. And that there may be the least possible variation, when applied for trial and adjustment, let the state of the atmosphere be ascertained by a thermometer, at the time when the inches are marked, and let the application of it for trial be made at the time only when the atmosphere shall be found to be in the same state. Let one of these instruments be lodged along with the sets of standard measures in the several head boroughs, and, for the more complete preservation, it ought to be kept as much as possible from the action of the air, and from the extremes of heat and cold.

But whatever become of this or any other scheme that may be projected for reducing weights and measure to one uniform standard, I

am of opinion that it would be adviseable to fix the prices of all kinds of grain by weight. A measure of capacity is a very uncertain standard for ascertaining the value of grain. Soil, season, and management, occasion often such a difference of quality, that two firlots may be equal to three. But when the grain is weighed, though there may be a difference of the value of the same weight on account of the difference of quality, yet this difference will be, by many degrees, nearer the truth than when measured.

I would propose, then, that all kinds of grain, though deliverable to the merchant by measure, shall be appreciated by the weight. Suppose, for example, the farmer and his merchant agree that the price of barley shall be 16 s. per boll, if the boll weigh 16 stones, and of course that the price shall be more or less in proportion to its weight : when the barley is delivered, a few bolls or sacks may be weighed, which shall determine the average weight of the whole cargo. But as a stone of that barley, which weighs 18 stone the boll, is more valuable than a stone of barley, the boll of which weighs only 16 stones; and as a stone of that which weighs only 14 stones per boll, is not so valuable as a stone of that which weighs 16 stones the boll, the price ought to rise or fall by an encreasing ratio. A boll of barley, if worth 16 s. when it weighs 16 stone, would be worth more than 18 s. if it should weigh 18 stone ; because the encrease of weight is owing to the encrease of meal, without any encrease of husk, which rather diminishes as the weight rises. In like manner, and for the same reasons, a boll of barley, weigh-

ing only 14 stones, will not be worth 14 s., if 16 s. be a fair price when it weighs 16 stones; as the quantity of kernel or meal is diminished, while the quantity of husk and refuse is increased. The same observations will hold with respect to every other kind of grain. Were this method adopted, it would readily have the effect of improving the quality of every species of grain. When the farmer knows that the price will be proportioned to the weight, he will be at all possible pains, by the right cultivation and management of his grounds, to secure the advantage of the best price.

CHAPTER XVIII.

Improvements Suggested.

IN the course of this Survey hints have been given respecting such improvements as appeared to be most needed ; and, therefore, to repeat and enlarge upon these here will be unnecessary. It may be proper, however, to bring them into one point of view, by a short recapitulation, and to take notice of some others that have not been mentioned, though of equal importance.

1st, Enclosing.—Though enclosing has been going forward, for some years past, with increasing rapidity, much still remains to be done. A considerable proportion of the county still continues naked and exposed. Nothing, therefore, would contribute more to the general amelioration of the lands, than carrying forward this improvement with spirit, and completing it, in a substantial manner, with all possible dispatch. This species of improvement ought not to be confined to the richer and more productive grounds, but should extend to those parts of the county that are elevated and exposed, cold and wet, and, in their present condition, comparatively barren and useless. Would the proprietors be at the trouble and expence of surrounding such lands with large belts or stripes of plant-

ing, and of throwing them into sub-divisions judiciously laid out, this would not only give beauty, richness, and warmth, to the general aspect of the country, but would be productive of solid advantages to themselves, by improving the herbage for pasture, and enabling them to reclaim such parts of these waste grounds, as are capable of being brought under the plough, with greater ease and effect. These stripes of planting, however, ought to be of a considerable breadth, not less than 30 yards, and to be sufficiently protected with ditches, that they may be able to resist the storms, and to thrive in such exposed situations.

2dly, Planting—is an improvement much needed in Fife. Proprietors see the necessity, as well as the utility of this; and many of the commonities, lately divided, are now planted. All those tracks of land that are wet and marshy, and at the same time so situated as to be incapable of complete drainage, or, if capable of being laid dry, of such a bad soil that under the plough they could not repay the expence; and all spots of ground so steep, or elevated, and so bare of soil, as to be unfit for tillage, ought to be applied to this purpose. The profits, though distant, will be considerable, and will amply repay the expence of planting and inclosing, and the loss of the scanty herbage they now produce.

3dly, Draining.—A very considerable portion of the county stands in need of this improvement. Much, indeed, has been done this way; but much remains to be done, and, in many instances, the work has not been executed so

skilfully or completely as to render the improvement at once effectual and permanent. Wherever draining is necessary, it ought, indeed it must be regarded as the first and most essential of all improvements. It will be to little purpose to inclose ground of this kind: till it be completely laid dry, it must ever remain unproductive, and of little value.

4thly, The Breed of Cattle and Horses.—The excellence of the Fife breed of black cattle has already been mentioned: and I beg leave here to repeat what was before suggested; that both landlords and tenants, if they consult their own interest, will endeavour to get rid of every foreign or mixed kind, and confine themselves entirely to the native stock. And as the Fife cattle are yet capable of much improvement, both in shape and size, great care should be taken to select the healthiest and handsomest for breeders, and to feed and manage them properly when they are young. By persevering in this plan, they may be brought to a much higher degree of perfection than they have yet reached.

The same observations will apply to the breeding of horses. This species of stock has been much improved within the last 20 or 30 years: but still there is room for greater and more general improvement. To accomplish this, horses of the best kinds, whether for the saddle or for the draught, ought to be introduced by the gentlemen, and allowed to cover for their own tenants, without charge, or for a small consideration, and for others at a moderate rate. The gentlemen, from that easy in-

tercourse with every part of the island, which their rank in life gives them, must be supposed to have a better opportunity than their tenants, to discover and to procure the best kinds: and, from the superiority of their fortunes, they must be abler to bear any extraordinary expence that may be necessary in the first instance. They cannot but see that their own private interest, as well as the general good of the country, is deeply concerned. It must therefore be peculiarly incumbent upon them to take a leading and active part in promoting this improvement.

5thly, Cottages.—Building and keeping up a sufficient number of cottages, is surely an object of much importance to husbandry; especially when farms are extensive, and situated at a distance from the large villages. That the greatest possible advantage, however, may be derived from cottages, I am humbly of opinion, that they ought to be established on the following, or some similar plan. The cottages should consist of from 3 or 4, to 10 or 12 dwelling-houses, proportioned to the size of the farms to which they are attached. The cottage ought to be built at the expence of the proprietor, at a convenient distance from the farm-stead, and so situated as not to interfere with the farmer. Let a portion of land be appropriated to the cottage, divided among the cottagers, in the proportion of one or two acres a-piece, according to the quality of the ground, by which means each may be enabled to keep a cow. Let the cottage be let along with the farm, and the tenant made responsible for the rent; bound, at the same time, to keep the cottage in repair; and

never to divert the land attached to it from the original purpose. On the other hand, let the tenant have full power to choose the persons who shall occupy the different cot-houses, and to settle with them for what time, and upon what terms he pleases. A condition perfectly reasonable, as he is bound for the rent to the proprietor. Besides, were the cottages to be let by the landlord, and made independent of the tenant, the principal design would be frustrated.

The advantages resulting to the farm from a plan of this kind are many and obvious. The tenant can let the houses to married servants, to labourers, and to such mechanics as are most necessary for the purposes of husbandry. He has it in his power to let them on such terms as to command the labour of the cottagers, at any time when extraordinary labour may be necessary. The plan will be equally advantageous for the cottagers, as by the work they are bound to perform, they can pay their rent without any sensible difficulty. The privilege of having a comfortable habitation, with as much ground as will keep a cow, and produce a little food for the family, is a great encouragement to people of that class to marry, and settle in the country; and thus population will be promoted, and the health and morals of a numerous and useful body of the people preserved. Besides, as the children of the cottagers will readily be employed, from time to time, in the different operations of husbandry, they will contract a taste for rural occupations, and, at the same time, acquire skill and dexterity in the

performance : And thus the cottages will become excellent nurseries for breeding farm-servants of both sexes, and of every description.

6thly, The establishing of three *Annual Trysts*, to succeed each other, early in the month of March, one in the east, one in the middle, and one in the west of the county, for the sale of wintering stock, might be very beneficial to the tenantry, as well as to others concerned. Formerly the English dealers purchased and drove up our cattle in summer, in good condition, kept them on their worst pasture during autumn, wintered them, and fed them off the ensuing summer ; retaining a part of them for feeding next winter. From the advanced state of husbandry in Scotland, it is found that we can now winter our cattle as well as they generally do in England. And, therefore, the English drovers come down, at the end of February or the beginning of March, a practice which they have followed for some years past ; go along from farm to farm, often in vain ; and with much fatigue, trouble, and expence, purchase what wintering stock they can find. These they drive up, and make fit for slaughter in summer ; and afterwards make purchases for feeding off in winter. It may, therefore, be easily conceived, that, by the proposed arrangement, much time, expence of feed, and interest of money, must be saved to the English feeder, and consequently that he can afford a much higher price to the Scots farmer. Such an intercourse, therefore, so beneficial to the landlords, as well as to their tenants, and to the county at large, ought to be encouraged, and made as easy and permanent as possible, lest it

should fall into disuse, through the prodigious trouble the drover is at present subjected to, in making and collecting his purchases. This object is certainly entitled to the consideration of the gentlemen of the county; and if of such consequence as the most experienced and intelligent among the farmers judge it to be, the sooner the regulation is established the better.

7thly, Farm-Steads.—Though many excellent farm-steads have been lately built in this county, they are not so general as they ought to be; and even those that have been built in a superior style, are still capable of much improvement. To what has been said upon this point, in a former part of the Survey, I need add nothing here; only I cannot forbear mentioning a set of office-houses lately built by Mr Cheap of Rossie, not on account of their superiority in respect of workmanship, or the number and extent of their conveniences; but chiefly because they seem to be constructed on an improved plan, and, on that account, deserving of notice and imitation.

The roofs of the shades are made to incline to the outside, by which means none of the rain that falls upon them is allowed to run into the straw-yard, to the annoyance of the cattle, or the detriment of the dunghill. The high walls upon which the upper part of the roof rests, being on the inside, prove a more complete shelter from the blast; and, by encreasing the reflexion of the heat, when the sun shines, render the straw-yard warm and comfortable for the cattle.

The open shades are likewise so constructed, as to be easily converted into close byres. Doors are prepared, and exactly fitted to the several o-

penings, so that they can all be completely shut up, except such as may be necessary for the entrance of the cattle. Stakes are fixed along the back walls; the saddles properly laid; and every other requisite arrangement made, that whenever it shall be thought necessary to use them as byres, they can be immediately applied to that purpose.

8thly,—To carry forward and complete the *straighting* and *embanking* the *water of Eden*, would be an improvement highly beneficial to the proprietors, through whose lands it runs. This necessary and laborious work, Mr Johnston of Lathrisk hath executed as far down the river as his lands extend. And, by the beneficial effects it has produced upon his estate, its importance is sufficiently established. Besides, by the example he has set, the best mode of execution, as well as the necessary expences attending it, may be more easily ascertained.

CHAPTER XIX.

Circumstances favourable to the Progress of AGRICULTURE in FIFE.

I. FIFE enjoys numerous means of improvement, and these of easy access. Besides the great quantity of animal dung produced by the numerous herds of cattle which it rears and maintains, it possesses an inexhaustible fund of lime conveniently situated for the greater part of the county. Marle is to be found in many parts of the county, and of an excellent quality. And an extensive sea-coast furnishes the adjacent grounds with a considerable supply of manure from the sea-weed cast upon the shore. The great abundance of coal, easily accessible to about two thirds of the county, while it contributes much to domestic comfort, and enables the farmers to procure lime for their land, in sufficient quantity, and at a moderate rate, frees them, at the same time, from that great waste of time and labour, to which many other counties are subjected, in digging, winning, and carrying home, peats for fuel; a business which, in many places, occupies the farmer's servants and horses through almost the whole of the summer months, and which, therefore, must be a great hindrance to the operations of husbandry.

And as convenient and substantial farm-steads are essentially necessary to the prosperity of farming, the materials are to be found every where in plenty, and of the best kinds. Excellent quarries, either of whin or free-stone, are to be met with in every corner of the county.

2d, Another circumstance, tending to encourage and promote agricultural improvement in this county, is, that the farmer can always find a ready market for the produce of his farm. The great population of Fife, and the extent and flourishing state of its manufactures, must require a large and constant supply of provisions, and of course occasion a constant demand upon the farmer for every article of that kind which he can furnish. And as the market is ready, so it is convenient. So small in proportion to the number of inhabitants is the territory which they occupy, that he can never be exposed to any considerable expence or loss of time in carrying his victual to market. Nor does his encouragement stop here. Besides having the advantage of large demands for home consumption, he can find a ready and profitable market for his surplus produce to any amount. Exportation is easy and convenient, by reason of the great extent of sea-coast, and the proximity of the most inland parts to a commodious port.

3d, Another encouragement to a more spirited and extensive improvement, is, the laudable example which several intelligent and enterprising improvers have already exhibited. There is no kind of soil, perhaps, remaining to be cultivated, upon which experiments have not been

successfully made by different gentlemen and farmers in different parts of the county. In attempting the improvement of such land, proprietors and farmers are not left to conjecture, as to the proper mode of management, the expence that may be incurred, or the advantage that may be ultimately expected. They are no longer under the necessity of trying schemes of unknown efficacy, and uncertain result, or of acquiring agricultural knowledge by a tedious course of experiments, which may be erroneous and unsuccessful, and therefore must be abandoned, or which, in the end, will yield no return proportioned to the expence of carrying them into effect. Those who have boldly led the way, and whose laudable exertions have been crowned with success, will be ready, I am confident, to communicate every necessary information to such as are willing to follow their example, and to allow them every advantage that can be derived from their experience.

I will not pretend to mention every proprietor and farmer who have distinguished themselves as improvers. But I should do injustice to the county, did I not mention at least a few of them. And I should do injustice to the gentlemen themselves, did I not mention their names with the highest respect. Mr Wedderburn of Wedderburn; Mr Johnston of Lathrisk; Mr Cheap of Rossie; Mr Gourley of Craigrothie; Mr Balfour of Balcurvie; Mr Stark of Kingsdale; Mr Fergus of Wester Strathorr; Mr Henderson of Hatton; Mr Kinnear of Kinloch; Mr Anderson of Inchrye, &c. These, and several others that might be mentioned with equal pro-

priety, have exhibited examples of the most important and useful improvements. By them, rivers have been straighted and embanked,—marshes drained,—waste, stubborn, or stony land reclaimed,—cold, wet, and poor soil, sheltered, drained, and fertilized,—plantations reared,—judicious and substantial enclosures executed,—and many farm-steads erected on convenient and liberal plans.

CONCLUSION.



I SHALL now conclude with mentioning a few of the many great advantages that may be expected from the successful execution of the important scheme at present going forward under the direction of the Honourable BOARD of AGRICULTURE, for the general improvement of the kingdom.

An increase of produce, both of grain and of live-stock, which will advance in proportion to the degree of perfection to which improvements in Agriculture are carried, must be the immediate and happy consequence. This will not only secure us from scarcity and famine, evils ever dreadful to a nation, but will afford an abundant supply of food for the inhabitants; and not infrequently a large surplus for exportation; besides furnishing in greater quantity, and of an improved quality, the raw materials of many of our most valuable and profitable manufactures, such as wool, flax, hides, tallow, &c. As Agriculture advances, the number of inhabitants will, of course, multiply; for population always keeps pace with the cultivation of the soil. Productive labour, the great source of national wealth, will increase, without any considerable addition of unproductive consumers. Hence will arise an accumulation of the general stock and revenue of the kingdom, which will furnish large resources for supplying the exigences of the State, in respect both of internal government,

and national defence,—resources not only plentiful, and at hand, but subject to none of the difficulties and uncertainties, to which those drawn from foreign territory and foreign trade, are unavoidably exposed.

Besides, Agriculture is peculiarly friendly to the health and morals of the people. The exercises, in which it employs them, are generally in the open air, and of such a nature as to render them hardy and robust, and to preserve them from those diseases, to which men employed in sedentary occupations, or confined within the noxious atmosphere of large towns, are usually liable.

And as Agriculture contributes to bodily health and vigour, so it tends to preserve innocency and simplicity of manners. At the same time that it promotes population, it obliges the people to continue in a divided and scattered state, thereby preventing that growth and prevalence of corruption which an easy and frequent intercourse is so apt to produce. And as every day hath its particular task, which can seldom be anticipated or postponed, they have neither leisure nor opportunity allowed them for contracting habits of idleness and intemperance. By their situation and manner of life, they are prevented from being often witnesses to scenes of profligacy and vice, and thereby kept in a great measure free from the contagion of bad example, the frequency of which proves so destructive of the morals of the crowded city. Hard and constant labour serves to keep the passions in check, and affords no time for the contrivance and execution of deliberate schemes of

wickedness. In short, as idleness is the first step to profligacy, so the habits of industry are highly favourable to the interests of virtue, as they keep men out of the way of those temptations, by which virtuous principles may be shaken and overthrown.

It deserves consideration, likewise, that Agriculture, when in a flourishing state, contributes greatly to the prosperity of trade and manufactures. With what superior advantage may these be carried on, when, instead of being obliged to depend upon the precarious and often expensive supplies of a foreign market, the numerous trading vessels that crowd our ports can be completely victualled, and at the same time supplied with many valuable articles of commerce; and when the manufacturer can be furnished with a constant and plentiful supply of provisions from the produce of our own country.

Besides, as the people become more wealthy, a taste for refinement will, of course, spread and be more generally indulged. Not satisfied with bare necessaries, men will look out for the elegances and delicacies of life. Hence the demands upon the manufacturer and the merchant will increase; and hence fresh encouragement to activity and improvement will be derived. But the advantage will not be wholly on the side of trade and manufactures; it will return back to the farmer with interest, and be amply repaid by a ready market, and a high price for the productions of the field.

The truth is, Agriculture and Manufactures ought to go hand in hand; and a wise Govern-

ment, so far as the interference of Government may be competent and proper, will study to direct their several operations, and to adjust the encouragements that may be necessary for their improvement and success, in such a manner as to render them mutually advantageous, and jointly subservient to the general welfare.

In short, this great plan for promoting industry and agricultural improvement, if carried into full effect, will have the happiest influence on the political sentiments of the people at large. When they find themselves the objects of public attention and care; when they see Government chalking out to them a path by which they may rise to opulence and consideration; when they experience from their masters a kind and liberal treatment; and when they find themselves protected in the enjoyment of the fruits of their honest industry, by the operation of laws wisely framed and impartially executed, they become naturally and warmly attached to their native soil, repay the friendly attention of their superiors with honour and esteem; and look up with veneration to that system of Government under which they flourish and are happy, and will be ready, in the moment of danger, to stand forth in its defence.



O THOU! by whose Almighty nod, the scale
Of empire rises, or alternate falls,
Send forth the saving virtues round the land,
In bright patrol; white PEACE, and social LOVE

The tender looking CHARITY, intent
On gentle deeds, and shedding tears thro' smiles ;
Undaunted TRUTH, and dignity of mind ;
Courage composed and keen ; sound TEMPERANCE,
Healthful in heart and look ; clear CHASTITY,
With blushes redd'ning, as she moves along ;
Rough INDUSTRY ; ACTIVITY untir'd,
With copious life inform'd, and all awake :
While in the radiant front, superior shines
That first paternal virtue, PUBLIC ZEAL ;
Who throws o'er all an equal wide survey
And ever musing on the common weal,
Still labours glorious with some great design.

THOMSON.

The water holding capacity, in fact,
 On gentle slopes, and the water runs into
 Unimpaired Trenches, and the water runs
 Courage combined and held; and the water runs
 In fact in fact the water runs; and the water runs
 With slight velocity, in the water runs;
 Rough capacity; and the water runs;
 With course the water runs, and the water runs;
 With in the water runs, and the water runs;
 The water runs, and the water runs;
 Who throws it all in equal wide water;
 And ever moving on the common road;
 Still between yourself with constant design.

THE END.

APPENDIX I.

PLAN OF A LEASE,

Suggested by the Observations made upon this Subject in the preceding SURVEY, and calculated to forward and perfect the CULTIVATION of OPEN and UNIMPROVED LANDS.



IT is CONTRACTED, AGREED, and finally ENDED, betwixt A. B. Esq. of A. heritable proprietor of the lands underwritten, on the one part, and C. D., tenant in E., on the other part, in manner following: *That is to say*, the said A. B. for the tack-duty, and with and under the reservations and special conditions after mentioned, hath sett, and hereby in tack and assedation, lets, to the said C. D. and his heirs, secluding all assignees, voluuntary or legal, except such assignee shall be one of his own lawful children*; also, secluding subtenants, excepting in the single case of the demise of the said C. D. before his heir, or the child he intends to succeed him, shall be capable of managing the farm from non-age: in which case the curators of that child shall have power to subsett, for the remaining years of the lease, to any man of good character, who shall find sufficient security to the said A. B., to put a stock upon the farm equal in value to three years rent,—ALL and WHOLE the Farm of C., with the houses and office-houses built thereon, as presently possessed by J. O., tenant there, and that for the space of 42 years complete†, from and after the term of Martinmas next 1800: RESERVING full power and liberty to the

* Page 114.

† P. 357.

said A. B. at all times, during this tack, to search for, dig, and carry off, coal, limestone, and all metals and minerals whatever, from the lands above sett; and to erect engines, &c. as the case may be*, on his allowing the said C. D. and his foresaids the damages done to the surface of the ground, as the same shall be estimated by two men mutually chosen by master and tenant, yearly, out of the tack-duty aftermentioned. ALSO, full power to streight the marches of said farm, and excamb ground with the neighbouring heritors, when he pleases, or when the inclosing aftermentioned renders the same necessary. WHICH TACK, with and under the reservations above and conditions aftermentioned, the said A. B. binds and obliges himself and his heirs to warrant at all hands. FOR WHICH CAUSE, and on the other part, the said C. D. binds and obliges himself, his heirs, &c. to pay to the said A. B. his heirs, and assignees, the value of 100 bolls of barley and 100 bolls of oats†, at the county fiars, yearly, at the terms of Whitsunday and Lammas‡, for each of the 21 years of this lease, or first period thereof; and the value in money ascertained§ by the said county fiars annually of 130 bolls of barley and 130 bolls of oats, at the said terms of Whitsunday and Lammas, in equal portions yearly, and each year of the remaining or second period of 21 years this lease is to endure; making the first term's payment of said tack-duty at Whitsunday 1802, and the next term's payment at Lammas thereafter, and that in full of tack-duty for crop and year 1801, and so forth, yearly, during the first period of 21 years: and the augmented rent, before mentioned, yearly, at said terms, by equal portions, during the second period, or remaining 21 years of this lease: with annualrent of said money-rent from and after each term's falling due, during the not-payment of the same. And it is mutually agreed, by both parties, that as this farm, in its present state, is uninclosed, full of stones which interrupt the plough, with a great proportion of wet land, occasioned by springs, as well as by the crooked injudicious manner in which the ridges pre-

* Page 117.

† P. 95.

‡ P. 110.

§ P. 357.

sently ly, that all these defects shall be remedied, and the farm completely improved *, during the first period of 21 years, from the commencement of this lease : AS FOLLOWS, viz. the said C. D. binds and obliges himself and his fore-saids, to inclose the whole lands above lett, and subdivide the same into parks or inclosures, according to a plan given him by the said A. B., so as completely to finish the same within the period before mentioned. And that he shall completely finish the fencing of one inclosure, at least, each year from the commencement of the lease : Which fences shall consist of five feet clap-ditch †, planted with good thorns, not less than five years old, the backs of the ditches carefully levelled, to secure a proper foundation ; and a dry stone-dike built thereon, two feet wide at the bottom, contracted three inches on each side above the found stones, battered to sixteen inches on the top, finished with a coping of large stones, to project three inches on each side, making the whole height three feet. And on those parts of the farm where draining is not necessary, and where thorns will not thrive, he obliges himself to enclose ‡ with good Galloway stone-dikes, founded 2 feet 6 inches wide, contracted to 2 feet above the first stone, and 4 feet 6 inches height ; with a gate having 3 bars to each park. And, for his encouragement, the said A. B. binds and obliges himself to allow the said C. D. the sum of

Sterling for each chain of 24 ells of said fences, that shall be completed in a substantial manner ; with for each park-gate, when the park is completely inclosed, out of the first year's rent, and so on progressively, out of each year's rent, and until the whole enclosing is complete. And the said C. D. is bound and obliged, over and above the tack-duty before mentioned, when the second year's rent falls due, also to pay the said A. B. 5 per cent. § for the sum allowed him the preceding year, for enclosing or for draining, as after mentioned, and so on progressively until that improvement is complete. And the said C. D. binds and obliges himself, at least once, to summer-fallow the whole lands above set,

during the first 21 years of this lease, one park each year from the commencement. And, during the fallow year, he obliges himself to mark the stones, his plough shall touch each ploughing, and shall dig out the same, and cart them off to build said fences; and the small stones brought up by the harrows*, he shall gather and cart off after each harrowing, to fill the drains after mentioned. And he obliges himself to uphold the whole dikes so built during this lease, and leave the same completely fencible at the expiry hereof, the dikes free of slaps, the ditches clean scoured; and as to the hedges, the said A. B. shall employ a hedger to clean the same properly, three times per annum the first two years, and once yearly thereafter, so long as either master or tenant judges cleaning necessary; and likewise to cut and train up the hedges, (*the method of training the hedges agreed upon to be inserted here.*) And the said C. D. shall be bound and obliged to repay the said A. B. one half the amount of said expence yearly, along with the tack-duty. FURTHER, IT IS AGREED, that the wet land on this farm shall be completely drained, during the first 21 years of this lease. And, for effecting this †, the said A. B. shall employ a man of experience in the art of draining land, who shall point out where these drains ought to be cut, and of what width and depth. And during the year of fallow, the said C. D. shall cut the drains, cart the stones, and fill them, agreeably to the directions given him, till the field is thus completely dry. The expence of this durable improvement, executed at the sight of the said A. B., or his managers, shall be allowed to the said C. D., in the same manner as the enclosing before mentioned; and the said C. D. shall pay him 5 per cent. interest, on the expenditure, in like manner ‡. FURTHER, the said C. D. binds and obliges himself and his foresaids, not only to fallow and drain one park each year, as before specified, clear it of stones, and drain it, but shall level and lay the ridges in the most convenient direction, to keep it dry, and shall lay thirty bolls of lime-shells on each acre, with such a quantity of

* P. 237.

† P. 237.

‡ P. 338.

dung as he can afford : And shall sow that field down with grass seeds, with the first crop, or with the third crop after the lime, if the second crop was a green one, and had dung applied to it, to be cut once for hay, and then pastured from 2 to 8 years (according to circumstances), and so on progressively, park after park, till the whole farm is thus cleared of stones, inclosed, drained, fallowed, ridges thrown into proper form, limed and dunged, as far as he can procure that article. AND that the lands may be always kept in good heart, after this improvement, the said C. D. binds and obliges himself, &c. never to have above one third of the farm let in white crops, and shall keep the other two thirds thereof always in hay or pasture grass, or green crops, during the whole currency of this lease. And obliges himself to reside with his family upon the farm, and to consume thereon the whole fodder it shall produce, and sell no part thereof, hay excepted ; and shall keep a stock of cattle, to consume said fodder, equal in value to one year's rent at least : EXPRESSLY DECLARING *, That in case the said C. D. shall fail in completing said improvements during the first 21 years of the lease, the same shall cease and determine ; and the said A. B. shall be entitled to remove him, and resume possession of the farm, in the same manner as if the lease had been expired. AND, on the other hand, if the said C. D. † shall judge the stipulated rent for the second period of 21 years to be more than he can pay, he shall be at liberty to remove and give up the lease, at the end of the first period, upon formally intimating the same to the said A. B. one year at least before the expiry of the first 21 years. But whether the said C. D. shall remove at the end of the first, or the second period, he binds and obliges himself, &c. at his removal, to leave the farm in the following state ; viz. one field ‡ properly prepared and well manured, sown with clover and ryegrass, the last year of his possession, and shall summer-fallow completely another field during the last year of his possession, and ridge it up before harvest, and lime it suf-

* P. 358.

† Ibid.

‡ P. 122.

ficiently at the sight of the said A. B. or his manager : That he shall prepare properly another field, sow it with turnip, dress and take due care of them, and besides have at least one half of the whole farm in hay or pasture, one half of which pasture must have been grazed with cattle for the three preceding years, AND at such removal, whether at the first or second period, the said A. B. obliges himself, &c. to purchase the whole crop of grain, hay, turnip, potatoes, &c. together with the whole dung collected in summer and harvest ; for all which, and for the expence of fallowing, lime laid on, and the value of the grass-seeds sown the last year before the tenant's removal, he shall be obliged to pay for at a fair price, according to a valuation put upon them, by neutral men, mutually chosen. AND the said C. D. shall be obliged to deliver the whole to him, and no otherwise dispose of any part thereof. AND with regard to houses * presently upon the farm, an accurate estimate has been made, and the actual value amounts to no more than L. Sterling, and though sufficient at present to contain the cattle the farm will support, must become inadequate, when the quantity is increased in proportion to the improvement : Therefore, the said C. D. shall be at liberty to extend the buildings in proportion to the cattle required to consume the increased produce, build a shade for the farming utensils, erect a granary above it, fit to contain bolls of grain ; and other conveniences he may judge necessary ; always submitting the plan, and situation of these buildings before execution, to the said A. B. for his advice and direction : And at the end of this lease, whether the same shall happen at the expiration of the first or second period of 21 years ; the value of the whole buildings shall be again estimated, by two men mutually chosen ; and the said A. B. obliges himself to pay to the said C. D. the difference in value between the estimates, at the entry and expiry of the lease, if the amount of the last estimate shall exceed that of the first, and if it fall short of it, then the said C. D. becomes bound to pay to the

said A. B. whatever the actual value at the expiry falls short of the L. , at which these houses were estimated at his entry. AND as there are no cot-houses on the lands above set, * the said A. B. obliges himself, &c. to build cot-houses, at an expence not exceeding L. during the first 3 years of this lease, and put the said C. D. in possession thereof; and the said C. D., on his part, becomes bound, over and above the tack-duty beforementioned, to pay the legal interest of the sum thus expended, yearly, during this lease, and uphold the houses, and leave them worth the same sum at the expiry hereof, or pay the deficiency, if they shall be estimated at less, to the said A. B. &c. AND, as the farm above sett †, has many waste spots, incapable of culture, the said C. D. obliges himself, &c. to plant that waste ground to the extent of acres, with trees proper for the soil; shall inclose and protect the same from cattle; and shall be at full liberty to cut for his own use as much thereof as he pleases, such trees only excepted as the said A. B. shall mark as proper to remain for ornament and shelter to the farm; such standards to be at least 12 feet distant from each other, and the said C. D. at liberty to cut out the intervening trees, if he think proper: And, at the expiry of this lease, the said A. B. shall have full power to purchase the whole trees then remaining, at a fair price fixed by two men mutually chosen, or what number thereof he chuses; and if it is not his choice to make such purchase, he shall notify the same to the said C. D. 18 months before the expiration of the lease, during which time the said C. D. shall have liberty to sell the whole to the best advantage; the expence of fencing which for its protection, shall be paid by the said A. B. as the other enclosing, and the interest by the said C. D. in like manner. AND, as a further encouragement to the said C. D. ‡ it is agreed, that if he shall be able to make a discovery of either coal, lime-stone or marle, on the farm above sett, he shall have full power to apply a quantity of

* Page 320.

† P. 121.

‡ P. 116.

lime and marle so discovered, to manure said farm, not exceeding bolls per annum ; and if coal is discovered by him, he shall be entitled to a quantity fit to burn the lime above mentioned. AND the said C. D. binds and obliges himself, &c at the expiration of this tack, to flit and remove from the lands hereby let, and to leave the same void and red, without any previous warning or process of removing to be used against him or them, for that effect. AND, LASTLY, both parties bind and oblige themselves and their aforesaid, to implement, perform, and fulfil these presents reciprocally to each other, under the penalty of L. Sterling, to be paid by the party failing to the party implementing, or willing to implement his part hereof, over and above performance.

* And in case any disputes shall arise between the parties during the currency of this lease, or at the expiry thereof, the same are hereby referred to two men skilled in Agriculture and inclosing, to be mutually chosen by the parties. And, in case of variance between them, to an overman chosen by the arbiters so to be named, whose determination in all cases, shall be final. And both parties consent to the registration hereof in the books of Council and Session, &c.



The above plan, it will be observed, contains only the principal outlines of the lease. Many requisite stipulations are designedly left out, because of less importance to the main object I have in view. Besides, when it comes to be put in practice, additions, variations, and omissions, even in the principal points, may sometimes be found necessary, from the peculiar circumstances of the cases to which it is applied.

APPENDIX II.

 INLAND CANAL.

THE following information has been communicated respecting a small inland canal, which Mr Low of Burnturk has projected, and is, at present, carrying into execution. As the scheme is ingenious, and, if properly executed, may be of advantage to the public, as well as to the proprietor, it certainly deserves notice.

On the south side of the road from Cupar to the New-Inn, and about four miles from Cupar, there is a range of lime-rock, of considerable extent, and of excellent quality. But as it lies upon a ridge of high ground, almost inaccessible to ordinary carriages, it has never been wrought to that extent, which either the wants of the country, or the interest of the proprietor (the Earl of Crawford) seemed to require. Within two miles of this rock there is a coal-liery belonging to Mr Low of Burnturk. Their contiguity naturally renders them of great value to one another, more especially as the one is the most northerly coal, and the other the most northerly lime-rock in Fife. But the ruggedness of the interjacent ground, rendering their communication with one another exceedingly difficult, has hitherto prevented both the proprietors and the public from deriving any material advantage from them.

To remedy this, Mr Low has opened a communication between them, by carrying a small canal from his coal-works on Burnturk, to the bottom of the hill where the lime-rock lies; along which he means to convey the raw

lime-stone to draw-kills, which he has cut out of a spongy rock, on the edge of a den close by his coal-pits. This canal is on a level with the top of his draw-kills. From the bottom of these kills another canal is cut, extending northward about half a mile, till it reach the declivity of the hill, for the purpose of carrying away the burnt lime-stone, as also coal, and some other articles to be mentioned afterwards. When the loaded boats reach the end of this canal, they are made to pass into skeleton carriages having broad wheels, and conveyed down the hill, to the side of the high way, near the village of Kettle, where their contents are to be deposited in shades for the convenience of purchasers. In passing down the hill they go singly, and are drawn up, when empty, by horses. But it is intended that after the first year the loaded carriages shall draw up the empty ones. The same method is observed in bringing the unburnt lime-stone from the quarry to the entrance of the upper canal.

Neither of these canals have occasion for locks, as they are on a dead level. Both branches are of the same dimensions, being nine or ten feet broad, and three feet deep. They are supplied with water from a coal-level, which never becomes dry; and all surface water is excluded, to prevent the canals being filled up with the mud, which such water may occasionally bring along with it.

The boats on the different canals are not of the same size. Those on the upper canal, being used only for carrying raw lime-stone, are to be from four to ten tons burden; whereas the boats on the other are to contain two tons only. His reason for making these last so small is, that he wishes the coal and lime conveyed by them not to be broken, but to be delivered at the shades as entire as when taken from the pits and the kills. To make these boats strong and tight, the seams are to be covered with thin sheet iron or copper, of two inches in breadth.

The conveyance of the boats along the lower canal, is to be effected by means of the boatman's pulling or shov-

ing the boat by the strength of his arm, exerted on a horizontal pole; elevated about three feet above the canal, and in the same line of direction, in the same manner as is practised in the Duke of Bridgewater's tunnel, where a man pushes from 70 to 100 of our loads of coals at a time. The larger boats on the upper canal, designed for the raw limestone, are to be conducted by a man on each side of the canal, pushing a pole stretched across, and fastened to the leading boat. Thus they will push or pull, so as to suit the size and windings of the canal better than a horse, and can do more work than ten horses on a road in the course of a day.

The boats are to be marked with figures, to ascertain the quantity they contain by their depth in the water.

Mr Low meant to have laid waggon-ways for his carriages, but thinks he can have all their advantages, without the expence and trouble, by laying the dry smooth materials, with which the quarries abound, on a well formed flat-road, and using such broad wheels as will act as rollers, and rather smooth than cut the ground. By this saving, he will be enabled to accommodate the country with coal and lime in greater quantity, and on more favourable terms, than could otherwise be afforded. And, to secure this advantage to the public more effectually, he works part of the lime-quarry under ground, that the quarry-men may be independent of the weather, and be able, at all times, to afford a quantity of lime suited to the demands of the country.

His coal, which stretches through 130 acres of ground, consists of five seams of different kinds, viz. a splint, three feet thick; a parrot, from three to four and a half; a cherry, 20 inches; and two seams of blind-coal, so called, from its emitting neither flame nor smoke, one of which is three feet five inches thick. This last is used chiefly for drying malt, but may be properly applied in making Tyle, as it is said to burn clay to a blue colour, by means of the sulphur it contains.

Besides coal and lime, he proposes to convey free-stone, bricks and charcoal, to the same place for sale, and also iron-stone, with a view to render the carriage easier to purchasers.

As Mr Low means to employ his own carriages when they can be spared, in carrying coal, lime, &c. to Newburgh, Cupar, and elsewhere, he builds a shed upon the end of the canal, at the back of his own house, where they may be lodged till he find it convenient to send them away.

It is mentioned also as a consequential advantage arising from the canals, that they furnish, so far as they go, complete fences and most effective drains.



ERRATA.

- Page 22. line 27. for *Soil and Climate*, read *Soil and Surface*.
 — 92. line 4. for *have*, read *has*.
 — 301. line 3. for *Aberdeen* read *Aberdour*.
 — 307. line 24. delc *the*.
 — 348. line 17. for *are*, read *is*.
 — 360. line 3. for *reserve*, read *receive*.
 — 361. line 2. for *periods*, read *period*.

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