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THE
RURAL ECONOMY
OF THE
MIDLAND COUNTIES;

INCLUDING
THE MANAGEMENT OF
L I V E S T O C K,
IN
LEICESTERSHIRE AND ITS ENVIRONS:

TOGETHER WITH
M I N U T E S
ON
AGRICULTURE AND PLANTING
IN THE DISTRICT OF THE
M I D L A N D S T A T I O N.

By Mr. MARSHALL.

THE SECOND EDITION.

IN TWO VOLUMES.

V O L. I.

L O N D O N :

Printed for G. NICOL, Bookseller to His Majesty, Pall Mall;
G. G. and J. ROBINSON, Paternoster Row;
and J. DEBRETT, Piccadilly.

1796.

THE

WINDMILL CHURCH

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TO HIS

ROYAL HIGHNESS

THE

PRINCE OF WALES.

SIR,

WITHOUT attempting to
praise, and without daring
to flatter, I presume to inform
Your Highness, that I am pursuing
a Plan, which, in its principles, is
calculated to prolong the Prosperity
of the English Nation; and that
nothing could alleviate so much the
labour of the pursuit, as the APPRO-
BATION OF YOUR ROYAL HIGHNESS;
nor any thing add so much to the
celebrity of the undertaking, as the
PATRONAGE OF THE PRINCE OF
WALES.

Permit

· D E D I C A T I O N .

Permit me, then, in YOUR HIGH-
NESS'S known goodness of disposition,
to commit these Volumes, as a part
of the General Work, to YOUR ROYAL
PATRONAGE; and to declare myself,
with becoming respect, and with the
most perfect attachment,

YOUR ROYAL HIGHNESS'S

MOST OBEDIENT AND

MOST HUMBLE SERVANT,

WILLIAM MARSHALL.

A D V E R T I S E M E N T

TO THE

FIRST VOLUME.

THE MATERIALS of this Volume were chiefly collected, some years ago, during a residence of two years, in the MIDLAND COUNTIES*.

But, with a view to the fulness and accuracy of the register, I have since thought it expedient to make a second survey of LEICESTERSHIRE and its ENVIRONS, where I spent three months of the last summer (1789); my principal object, in this second view, being that of making myself more fully acquainted with the subject of LIVE-STOCK.

THUS

* At STATFOLD, near the junction of the four counties of LEICESTER, WARWICK, STAFFORD, and DERBY, where I chiefly resided, from March 1784 to April 1786. See the Advertisement to the second volume.

ADVERTISEMENT.

THUS THE PUBLIC are furnished with a detail of the progress of this undertaking, from the first proposal of it, in 1780, to the present time: a period of somewhat more than ten years.

The practice of NORFOLK was collected in the years 1780, 1781, and 1782, and published in 1787.

That of YORKSHIRE, in 1782 and 1787, and published in 1788.

That of GLOUCESTERSHIRE, in 1782 and 1788, and published in 1789.

That of the MIDLAND COUNTIES, in 1784, 1785, 1786, 1789, and is now under publication.

It may be proper to add, that the PUBLIC are now likewise furnished with the whole of the information I have hitherto collected on the subject of RURAL ECONOMY; excepting that which I necessarily obtained of the established practice of the SOUTHERN COUNTIES during five years residence there;

ADVERTISEMENT.

there* ; also excepting a variety of detached ideas, which, being deemed in themselves not sufficiently important, or not yet sufficiently authenticated, to admit of being published in their present state, still remain scattered in the original papers belonging to the several Districts I have resided in ; and excepting such other desultory ideas as I have collected in passing between District and District. No part of either of these, however, are intended for separate publication ; and the practice of the SOUTHERN COUNTIES requires a second and deliberate survey, before a detail of it can be entitled to the reception of the PUBLIC †.

LONDON, *June*, 1790.

A D-

* See MINUTES OF AGRICULTURE, &c. IN SURREY.

† 1796. That survey has been made, and the materials collected are now preparing for publication.

ADVERTISEMENT

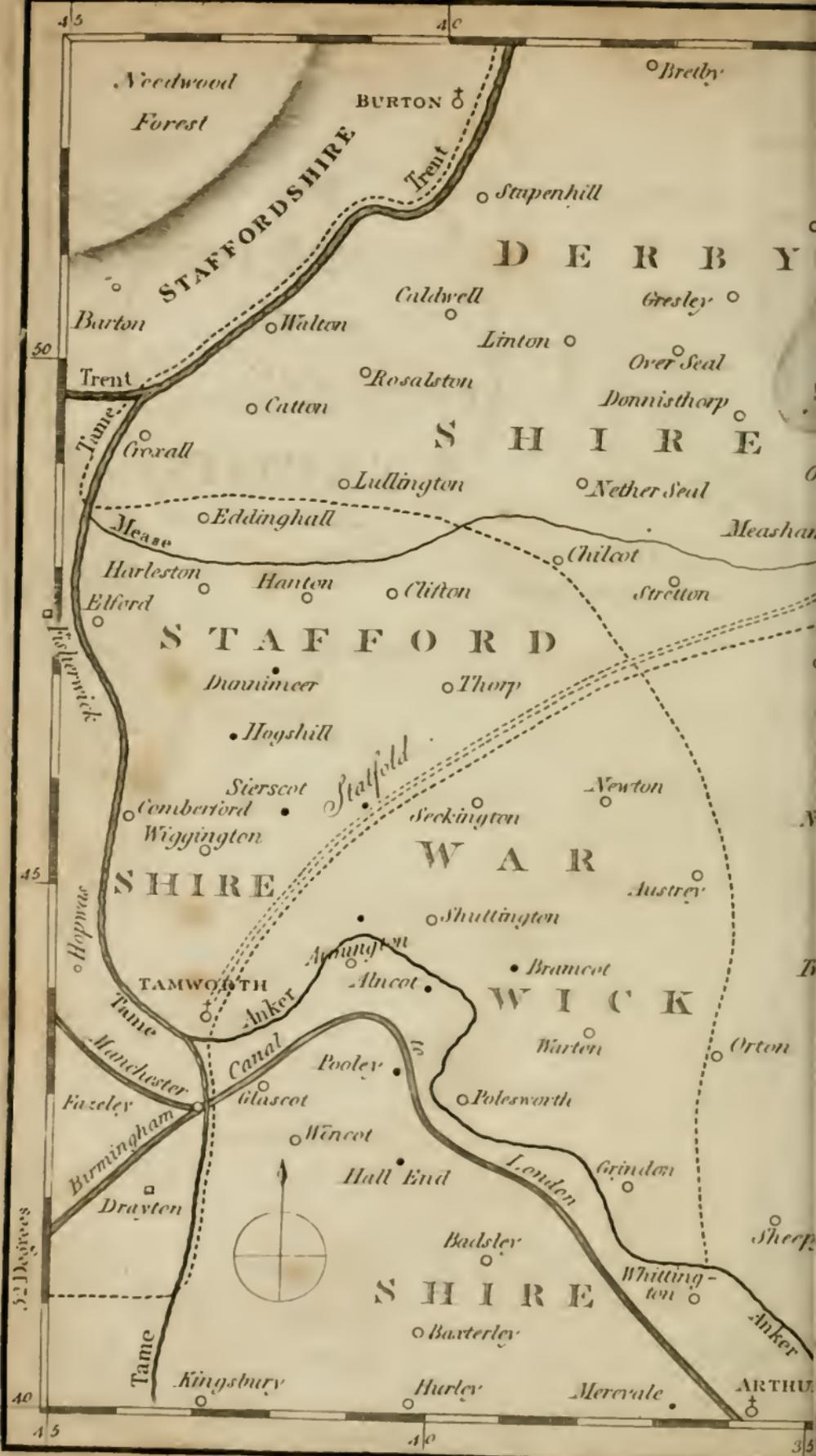
TO THE

SECOND EDITION.

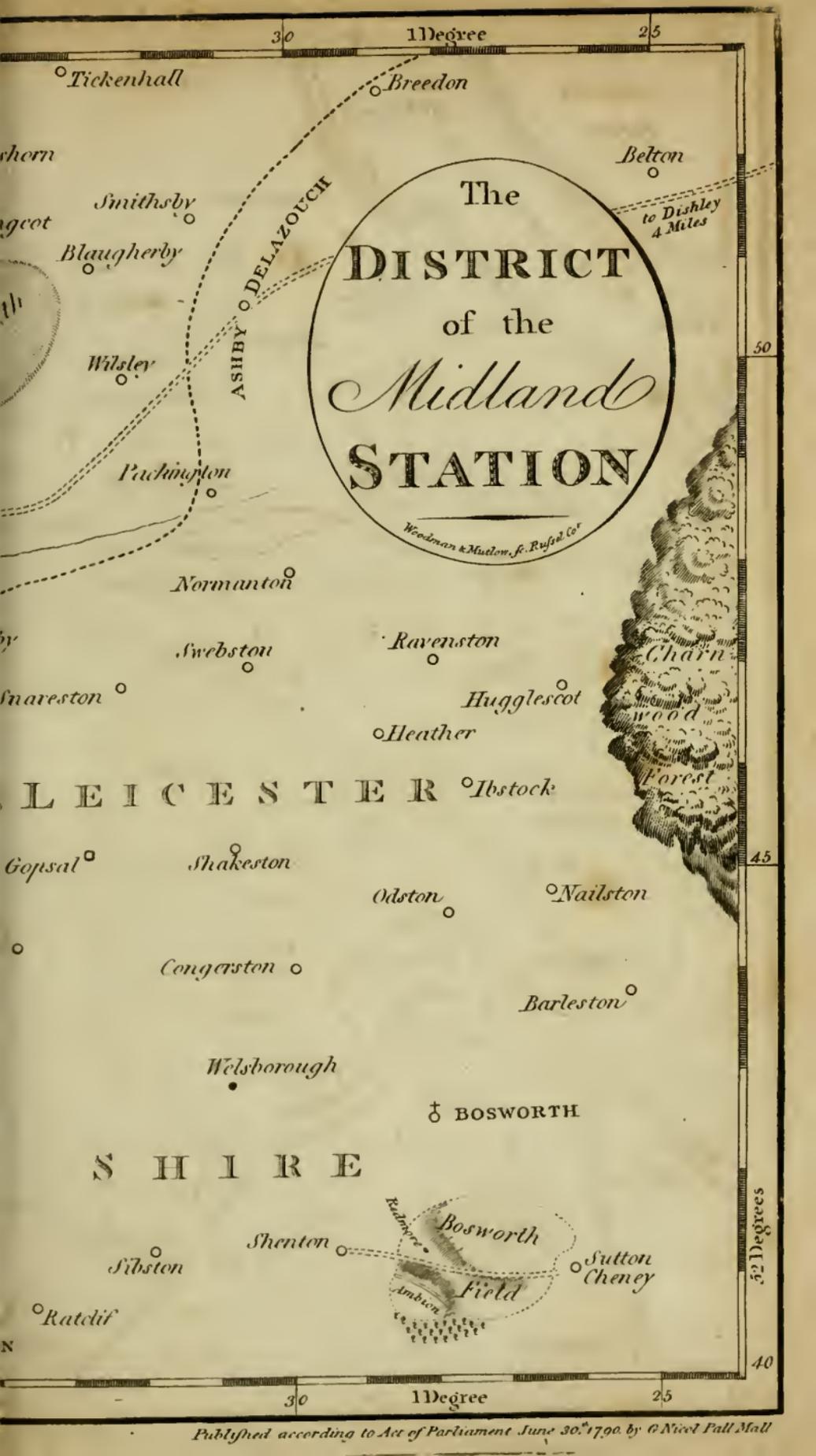
IN PREPARING this Edition for the press, the same line of conduct has been pursued, as was observed, on a similar occasion, with respect to the Rural Economy of Yorkshire. The arrangement has been adjusted, corrections have been made, and the GENERAL MATTER, which would separate without violence, has been reserved: with the intention of confining this impression, to what relates to the PRACTICE of PROFESSIONAL MEN, in the MIDLAND COUNTIES; and to what arose out of MY OWN EXPERIENCE, in THAT DEPARTMENT OF THE ISLAND.

LONDON, *December*, 1796.

THE



To be put in with a Guard in the front of Vol. 1.



The
DISTRICT
of the
Midland
STATION

Woodman & Mutton, f. R. Road, Co.

ASHBY DELAZOUCH

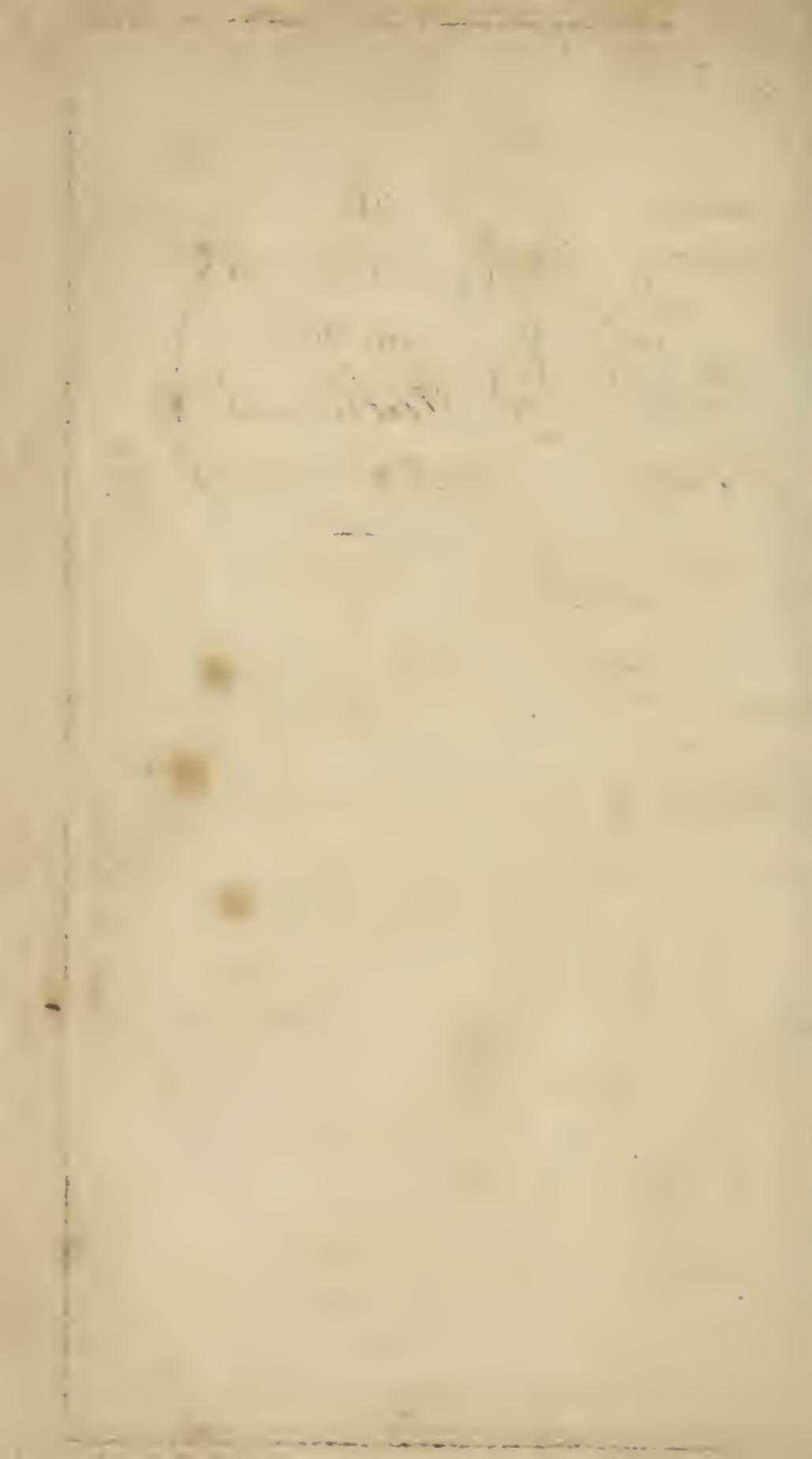
to Dishley
4 Miles

LEICESTER

SHIRE

♂ BOSWORTH





THE
RURAL ECONOMY
OF THE
MIDLAND COUNTIES.

INTRODUCTORY REMARKS.

THE ISLAND, if its surface could be brought within a single point of view, would appear strongly featured, by an association of mountain, upland, and vale, interspersed with irregular tracts of middle-land country, partaking of the nature of vale, but, having no regular chain of high lands on their margins, are not distinguishable by that name.

The northern and the western provinces abound with mountains and bold high lands; while the eastern, the southern, and the mid-

VOL. I.

B

land

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land counties, though they sometimes rise to chalky heights, with some few heathy barren swells, are seldom distinctly marked, by continued ranges of high lands, with broad vales intervening.

As objects of RURAL ECONOMY, however, these middle-land tracts are mostly similar to vale districts; the soil and produce of each being similar: with, however, some exceptions; as East Norfolk, for instance, which, though it lies flat and somewhat low, is most of it covered with a light sandy soil; and a few other instances might be produced: but, in general, the soil of this description of country is of a stronger, more clayey nature.

The district, which forms the subject of the present volumes, bears the last description; being the largest tract of the kind, in the island; including the principal parts of the counties of LEICESTER, RUTLAND, and WARWICK, with the northern margin of NORTHAMPTONSHIRE, the eastern point of STAFFORDSHIRE, and the southern extremities of DERBYSHIRE and NOTTINGHAMSHIRE, the town of LEICESTER being situated near its center,

This

This fertile tract of country, which I shall distinguish by the MIDLAND DISTRICT, measures, in some directions, not less than fifty miles across, in none, I believe, less than forty; consequently, it contains, at least, fifteen hundred square miles of surface; with no other drawback from its fertility, than the Charnwood hills, which do not contain fifty miles of infertile soil*.

This district I have traversed in almost every direction, and have, I believe, made myself sufficiently acquainted with its rural affairs, to give me an adequate idea of its GENERAL MANAGEMENT; especially as it relates to LIVESTOCK.

B 2

But

* LEICESTERSHIRE, however, contains two other plots of surface, less fertile than the rest of the district. One on the northern margin; distinguished by the name of the WOLDS: a swell of considerable height, covered with a singularly cold, dark-coloured, clayey soil. The other in the south-western quarter; likewise high land, with a cold retentive subsoil; but with a lighter more sandy soil. But, the rocky points of the forest hills apart, the county contains no barren surface: it has not, perhaps, an acre worth less than five shillings; and but few acres worth, on lease, less than ten shillings an acre. The entire county is not, at the present rental value of lands, worth much less, on a par, than fifteen to twenty shillings an acre: an estimate which, I believe, no other county will bear; RUTLANDSHIRE, perhaps, excepted.

But the part, of this extensive tract, which has engaged a more particular share of my attention, is bounded by the TRENT on the north, the TAME on the west, the SOAR on the east, and the ANKER and its banks on the south: a district which, for the fertility of its soil, and a spiritedness of management, especially in BREEDING, cannot certainly be equalled in these kingdoms.

The ARABLE MANAGEMENT of the Midland District is confined within still narrower limits. The district, at large, is a grassland country. Breeding, grazing, and the dairy, prevail in different parts of it. But, in the richest finest plot it contains, the four branches of husbandry are united, and carried on by men of property and abilities.

This district is situated, between the Charnwood hills and the western banks of the Trent the Tame and the Anker; including the four points of the counties of LEICESTER, WARWICK, STAFFORD, and DERBY; being seated, every way, near the center of the kingdom.

A more interesting subject of study, for the purpose of the plan I am executing, could not well be conceived; being not
more

more interesting on account of the nature of its situation, soil and produce, and the repute of its occupiers, than on that of its general management being peculiar and regular.

This being, *fortunately*, the DISTRICT of the STATION, and that of whose ARABLE MANAGEMENT I shall principally speak, it will require an accurate description.

THE
DISTRICT
OF THE
MIDLAND STATION.

THE OUTLINE is irregular.

The EXTENT may be estimated at one hundred and fifty square miles ; or about a hundred thousand acres.

The CLIMATURE is *below* the latitude it lies in (about $52^{\circ} 45'$.); its seasons are near a fortnight before those of East Norfolk, which is situated in a similar latitude ; and many days earlier than those of Gloucestershire, which enjoys a more southern situation. On the western side of the district, harvest is generally as forward, as in Surrey : In 1785, some oats were cut, and much wheat and barley ripe, the 28th July. What is very observable, the seasons, on the Tamworth side of the district, are a full week forwarder
than

than they are on the Forest side, only ten or twelve miles distant. But this, perhaps, may be accounted for, by the coldness of the base of the Forest hills *.

The SURFACE of this charming plot of country is various. Its general elevation is much greater, than that of most middle-soiled districts. Some of its swells might, in regard to elevation, be deemed upland; yet, in fertility, it is equal, throughout, to most vale districts.

The SOIL, in general, is a rich middle loam; interspersed, however, with a few less fertile patches. Toward the foot of the Charnwood hills, much of it is of a sandy nature; but of a singularly free and fertile quality. Taking the district of the station, throughout, it ranks, in utility, with the first districts of the island. The swells, though high, are generally fertile to their summits; and the dips between, though wide and flat, are sound, and easily freed from surface water. The entire district, except a few

B 4

narrow

* It is observable, that in October 1789, while the beans and much barley remained out, in Berkshire and the surrounding counties, the Midland District, though it lie near a hundred miles farther towards the north, had finished harvest, a month or six weeks.

narrow meadowy vallies, and the immediate margins of the rivers, is equally productive of corn and grafs.

The foil of the north of Warwickshire, away from the banks of the Anker, is of a colder less productive quality; west of the Tame, a light sandy foil prevails; and Derbyshire, except the southern extremity, and the immediate bank of the Trent, is still more of an upland or mountainous nature.

The DISTRICT of the STATION therefore, considered with regard to foil, might be termed a bay of the MIDLAND DISTRICT, into which it opens, to the south of the Charnwood hills; its management being traceable as far as the banks of the Soar, above Leicester; gradually assimilating with the more grazing parts of Leicestershire.

The SUBSOIL, prevalent in this district, is a RED CLAY, resembling the red soils of Herefordshire and Nottinghamshire. In some places a concrete SAND, increasing in hardness with the depth to a soft gritstone, occurs in different parts; and a SANDY LOAM, or brick earth, mixed with veins of sand and gravel, is a pretty common subfoil.

The ROADS, through the nature of the soil and substrata, are necessarily bad. But of these hereafter.

STATE OF INCLOSURE. Thirty years ago, much of this district was in an open state; and some townships still remain open: there are others, however, which appear to have been long in a state of inclosure; and in which, no doubt, the present system of management originated.

The PRESENT PRODUCTIONS of this district, as has been intimated, are chiefly CORN and GRASS; little, very little, WOODLAND is found within it. It is, however, surrounded, on almost every side, with well wooded tracts.

In the light of ORNAMENT, the MIDLAND DISTRICT, viewed generally, and in its present state, is much inferior to the northern and western quarters of the island. The views are frequently pleasing, through a variety of surface and richness of soil, but are seldom picturable; unless when the Charnwood hills enter the composition. The district, in a general point of view, discovers a tame-ness; a kind of still life: which, however, clothed as it is in the verdure and richness of herbage.

herbage, renders this district desirable as a place of residence; though, at present, it is not striking to the mere traveller. Nevertheless, were the billowy swells of Northamptonshire, and South Leicestershire, as well wooded, as those of Herefordshire and Kent, they would, in beauty, be inferior to neither of those counties. The surface of Northamptonshire is broken in a manner, which renders it singularly susceptible of ornament: and, at present, the BANKS of the TRENT, especially about NOTTINGHAM (singularly fine situation!) are as beautiful as ground wood and water can make them.

The DISTRICT of the STATION has still greater natural advantages: it is in a manner surrounded with what the landscape painter would call good distances. The Charnwood hills, the Derbyshire mountains, Needwood Forest, the Beauchefert hills, and other hills of Staffordshire; and, in some situations, the Lickey, the Clent hills, and the more prominent hills of Shropshire, may be caught.

Nor is it, at present, destitute of internal beauty. The BANKS of the TAME afford some beautiful subjects of landscape; and a lovely plot round HINTS, westward of the
Tame,

Tame, is in the best style of Kent or Herefordshire. The situation of TAMWORTH*, for the richness and beauty of the country round it, is one of the finest in the kingdom.

The CHARNWOOD HILLS are too striking a feature of the Midland District, to be passed without especial notice. Like the Malvern hills, their style is singular; but the style of the one is very different from that of the other. The Malvern hills, seen from a distance, bear a most striking resemblance to the Atlantic Islands; towering up high and ragged; and, on a near view, appear as one large mountain fragment. The Charnwood hills, on the contrary, seen obscurely, appear as an extensive range of mountains; much larger, and of course much more distant, than they really are. When approached, the mountain style is still preserved; the prominencies are distinct, sharp, and most of them pointed with naked ragged rock. One of these prominencies, BARDON HILL, rises above the rest; and, though far from an elevated situation, comparatively with the more northern mountains, commands, in much probability, a greater extent of surface, than any other point of view in the island.

It

* Formerly the residence of the Mercian kings.

It is entirely insulated ; standing every way at a considerable distance from lands equally high. The horizon appears to rise almost equally on every side : it affords what might be styled an ocean view, from a ship out of sight of land ; at least, it is more such, than any other land view I have seen.

The Midland District is, almost every acre of it, seen lying at its feet. Lincoln cathedral, at the distance of near sixty miles, makes a prominent object. With a good glass, the Dunstable hills, at little less than eighty miles, are, I am well assured, discernable. The Malvern hills, Mayhill, and the Sugar Loaf in South Wales, are distinctly in view. Enville, the Wrekin, and other mountains of Shropshire and North Wales, are equally distinguishable. And the Derbyshire hills, to the highest peak, appear at hand. An outline, described from the extremities of the views, would nearly include one fourth of England and Wales. It may be deemed, without risque, I apprehend, one of the most extraordinary points of view in Nature.

THE
RURAL ECONOMY
OF
THIS DISTRICT.

DIVISION THE FIRST.

LANDED ESTATES
AND THEIR
MANAGEMENT.

I.

ESTATES.

ESTATES, here, are small. Fertile districts were early cultivated; and, at the Conquest, the lordships, probably, were dealt out separately. Nor does there appear to have been, since their distribution, any accumulation of landed property, in the district immediately under survey. It has few

few principal residences *; nor any off estates, I believe, of more than two or three thousand pounds, a year †.

In YEOMANRY, of the higher class, the district of the station abounds, in a superior manner. Men cultivating their own estates of two, three, four, or five hundreds, a year, are thickly scattered, over almost every part of the district. There is an instance of a man whose lands, in their present high state of cultivation, are not worth less than two thousand pounds, a year, cultivating them, *as a yeoman!*

What a superior character! How much more respectable, thus, than clinging, as a minor gentleman, to men of fortune and fashion!

* GOPSAL, built by the late Mr. JENNINGS, famous for his friendships to Handel and the Pretender; and BOSWORTH, the seat of Sir WOLSTAN DIXIE; are the only residences *within* the district. FISHERWICK, the princely residence of the EARL of DONNEGAL, is situated on its northwestern margin; and KIRKBY, the seat of LORD WENTWORTH, on the opposite extremity.

† Lord STAMFORD's estate round GROBY, on the southern skirts of the Forest hills, is more; but little if any of it reaches, properly, within the district of the station.

fashion ! A German prince is probably less respected, in the environs of his residence, than Mr. PRINCEP is, in the neighbourhood of CROKALL.

The TENURE of this district is mostly *fee-simple* ; with some little *copyhold* ; but, I understand, with little or no *leasehold*.

2.

GENERAL MANAGEMENT

O F

E S T A T E S.

THERE are few districts in which less is to be learnt, on the subject of managing estates, than in this. The estates are small ; and the management little more than that of receiving the rents. It will, nevertheless, be right to take a view of its practice.

MANOR COURTS are pretty generally held ; even where the copyhold tenure is extinct : and their utility is experienced.

PUR-

PURCHASE OF LANDS. Some years back, the same species of frenzy,—*Terra-mania*,—showed itself, here, as it did in other districts *. Forty years purchase was, then, not unfrequently given. Now (1785) thirty years purchase, on a fair rental value, is esteemed a good price. There are some recent instances of lands being sold, at twenty years purchase. But this may be accounted for. At the time these purchases took place, the interest of the funds was extraordinarily high. By navy and victualling bills, new loans, &c. five or six percent was made of money. And this will ever be the case. The *interest* of the funds will always have more or less influence, on the price of land. Hence, those who wish to secure lands at a moderate price, should purchase when the funds are advantageous.

TENANCY. Farms, in general, still remain *at will*, and the occupiers, though large and many of them opulent, still appear satisfied with this species of possession: for although estates have been raised, the spirit of over-renting cannot be said to have yet pervaded the district. Nevertheless, here,

as

* See YORKSHIRE.

as in most other districts, there are men who, through necessity or avarice, are stretching their rent-rolls, and in consequence, prudently endeavouring to secure their rents, and their estates, by *agreements* and *leases*; either for a term, or from year to year. The prevailing form will be given at the close of this article.

For a striking instance of the confidence which still subsists between landlords and their tenants, see MIN. 24.

RENT. The rent varies, of course, with the soil and situation. Near TOWNS, land lets exceedingly high. Immediately round Tamworth, a considerable market town, and the soil peculiarly rich, it lets for three to four pounds, an acre. This, however, is in some measure accounted for, in the quantity of garden ground cultivated, here, for the Birmingham market.

Taking the district of the station, throughout, twenty shillings, an acre, is, at present, the full rent, for inclosed lands. Thirty or forty years ago, the old inclosures, of the best quality, did not let for more than twelve to fifteen shillings: the rise, therefore, has been considerable; but, in general, not

excessive. There are small parcels which let for twentyfive shillings, and some few much higher; but, I believe, there is no entire farm, of much size, lets, at present, (1785) for more than twenty shillings, an acre, round.

And, even at these rents, much of the district is TITHE-FREE; or enjoys modusses for grass land: and where the land is titheable, the tithe is seldom taken in kind. I met with only one instance: "Bosworth Field."

Formerly, the tithe of some townships, in *this* neighbourhood, was taken in kind;—under a custom, or regulation, which might, when this distressful business takes place, be universally adopted. If the titheman set up his own sheaves, he took every *tenth*: but, if the occupier undertook to set up, only each *eleventh*. Thus not only a saving of labor; but frequently, no doubt, a saving of produce, was obtained. The titheman lost nothing, on the whole, and the occupier was a gainer, with certainty.

The rent of tithes varies, in this as in other districts, with the value of the given land, and the species of its produce. For arable land (little or no *fallow*), worth twenty shillings,

shillings, an acre, four or five shillings may be considered, I believe, as the medium rent of the tithe. For grass land, about two shillings. For an entire farm, two-and-sixpence to three shillings, an acre.

COVENANTS. By the prevailing custom of the country, landlord builds and does extra repairs,—tenant the ordinary repairs of buildings, and takes the sole care of fences; materials being allowed;—with, generally, the liberty of lopping hedgerow timber.

REMOVALS. To the honor of the landed interest, the removal of tenants has been hitherto little practised, and of course is little understood. Many of the first farms have descended, from father to son, through a series of generations; and some of them, there is great reason to believe, may long continue in the same line of descent.

The time of removal is Ladyday; when, according to the prevailing custom of the country, entire possession of an inclosed farm * is given, by the outgoing to the

C 2

incoming

* In the open field township, the outgoing tenant has what is called “the waygoing crops:”—that is, the wheat and spring corn, sown previously to the quitting.

incoming tenant : even the barns are given up, at that time ; the outgoer, generally, carrying off his wheat crop ; and, sometimes, his last year's manure.

RECEIVING. The customary times of receiving are Michaelmas and Ladyday : the tenant being allowed six months credit.

Formerly, an extraordinary custom has been in use, in this quarter of the kingdom ; and, by some old *leases*, still remains in force, in the interior parts of Staffordshire. Instead of the landlord giving the tenant six months credit, the tenant, by this custom, agrees to be six months in advance ; covenanting to pay what is called a " FOREHAND RENT ;" that is, to pay down the rent prior to the occupancy. In practice, however, the rent is seldom paid, until four or six months after the commencement of the occupation ; namely, when it is due or nearly so. This custom was, doubtless, founded on the security of the landlord : and some extraordinary circumstances, probably, led to its establishment.

FORM OF LEASE. The lease, from which the following heads are digested, is the only modern lease I have met with, in
the

the district. It is, at present (1786), the most prevailing form in use. It contains some good clauses; but wants many alterations, and several additions, to render it a complete form.

LANDLORD AGREES to let, &c. &c. from year to year*.

LANDLORD RESERVES mines, quarries, &c. &c.

C 3

TENANT

* An admirable clause, suggested by a man, whose extensive and accurate knowledge of rural affairs, in all its branches, is superior to most men's, has lately been introduced into some articles of agreement, from year to year, in this district.

The great use of leases, *for a term of years*, is that of encouraging improvements, and the great objection to letting *from year to year* is their discouragement. But if, in the latter case, the landlord covenant, as he does in the clause under notice, to reimburse the tenant, when he quits, for such *real improvements* as he shall make, or the *remainder* of such improvements, at the time of quitting, the objection is, in some degree at least, obviated.

Some difficulty, no doubt, will lie, in ascertaining the quantity of improvement remaining, at the time of quitting. There are, however, men, in every district, who are adequate to the task of estimating a matter of this kind, with tolerable accuracy. And it is certainly preferable to risque the difficulty of settlement, than to let an estate suffer for want of due improvement.

TENANT AGREES to take, &c. and to pay the stipulated rent, "within forty days, without any deduction for taxes;" and double rent, so long as he continues to hold after notice given.

ALSO to repair buildings; accidents by fire excepted.

ALSO to repair gates and fences.

ALSO, when required, to "cut and plash the hedges, and make the ditches, three feet by two feet, or pay or cause to be paid to the landlord, &c. one shilling each rood for such as shall not be done after three months notice has been given, in writing."

ALSO not to lop or top timber trees; NOR to cut hedge thorns, without plashing and ditching.

ALSO not to part with the possession to any person or persons (the wife, child or children of the tenant excepted) without licence and consent; under forfeiture of the lease.

ALSO not to break up certain lands, specified in a schedule annexed, under 20l. an acre.

ALSO not to plow, &c. more than a specified number of acres of the rest of the land "in any one year;" under the same penalty.

ALSO

Also to forfeit the same sum “ for every acre that shall be plowed for any longer time than three crops, successively, without making a clean summer fallow thereof after the third crop.”

Also the like sum “ for every acre over and above ——— acres (clover excepted) that shall be mown in any one year.”

Also that at the time of laying down the arable lands to grass, he shall “ manure them with eight quarters of lime an acre used in tillage, and lay the same down in an husbandlike manner, sown with twelve pounds weight of clover seeds, and one strike (or bushel) of rye-grass seeds upon each acre.”

Also to spend on the premises, in a husbandlike manner, all the hay, straw, and manure; or leave them at the end of the term, for the use of the landlord “ or his next tenant:” the outgoing

TENANT being ALLOWED for the hay left on the premises, “ at the time of quitting.”

Also (provided he quit “ at the request of the landlord (unless for the breaking of these articles) and peaceably and quietly yield and deliver up possession”) “ for all

such clover and rye-grass as shall be sown in any time in the last year."

Also for such lime as he "shall cause to be expended upon the premises, within twelve months before the time he quits."

Also "for all fallows made within that time." These several allowances to be settled by referees.

MUTUALLY AGREE, that, "without any new agreement in writing being made concerning the same, all and every of the covenants, clauses and agreements, herein contained, shall be obligatory on each of the said parties hereto, and their representatives."

REFERENCES TO MINUTES.

For conversation on *tenancy*, see MIN. 24.

For a caution to extraparochial owners and occupiers, see MIN. 33.

For a proposed clause against slovenliness, see MIN. 76.

FARM

3.

F A R M

B U I L D I N G S.

THE FARM BUILDINGS of this district are many of them large, substantial, and commodious; and have several particulars belonging to them, that require attention.

The MATERIALS of the district are these. The WALLING material is almost uniformly brick. The TIMBER mostly oak, of which the builders are still lavish. The COVERING material was formerly thatch; now, principally, in *this* district, knobbed plain tiles; but, in Leicestershire, mostly blue slate*. GROUND FLOORING, mostly paving

* BLUE SLATES. These are raised near Swythland, on the southern skirts of the Charnwood hills; where an immense excavation has, within the last fifty years, been made.

paving bricks. CHAMBER FLOORING, *oak*, *elm*, or *plaster*: the two last are now most common in farm houses: in this, an inland country, *deal* has not hitherto been much in use; but, even here, it is now becoming the fashionable material.

The CEMENT of this district is entitled to particular notice. In COMMON STUCCO, PLAISTER FLOORS, and WATER-TIGHT WALLS the midland counties excel; but in the last most especially. Water cisterns are frequently formed by a nine inch brick wall, standing naked above ground; yet as tight as a stone trough!

Something depends on management, in forming these walls: but much more on the
the

Superficial quarries have been worked, time immemorial; but their produce was of a coarse quality, compared with those which are now raised; some of which are nearly equal to the Westmoreland slates.

They are raised in blocks, blasted from an almost seamless rock. The blocks are first cleft into slabs; and the slabs afterward into slates; or, if too strong and coarse, for this purpose, are thrown aside, as coarse flags, for various uses. Out of the larger blocks, chimney pieces and tombstones are cut.

The same kind of blue rock is found in different parts of the Forest hills; but none, yet, which affords slates equal in quality to "SWIDLAND SLATES."

the nature of the LIME, with which they are built. There is only one sort, with which they can be rendered tight, with certainty. This is the BARROW LIME, which not only sets with extraordinary hardness, but remains invulnerable to the elements; setting water, drought, and frost at defiance*.

The

* BARROW LIME. Barrow, situated on the banks of the Soar, nearly opposite to Mountsoarhill, in Leicestershire, has long been celebrated for its lime.

It is an interesting fact, that the stone, from which the Barrow lime is burnt, is, in color, texture, and quality of component parts, the same as the *Claystone of Gloucestershire*, from which the strong lime of that district is burnt; and what is still more remarkable, it is found in similar situations and deposited in thin strata, divided by thicker seams of calcareous clay, in the very same manner in which the claystone of Gloucestershire is found. See GLOUCESTERSHIRE.

One hundred grains of the *stone* contain eighty-six grains of calcareous matter; affording fourteen grains of an impalpable tenacious silt, which seems to be possessed of some singular properties; forming a subject well entitled to future enquiry.

One hundred grains of the *clay* contain forty-six grains of calcareous matter, leaving fifty-four grains of residuum, a fine clay.

Hence this earth, which, at present, lies an encumbrance in the quarries, is richer in calcareosity than the CLAY MARL of the Fleg hundreds of Norfolk, with which very valuable improvements are made. See NORFOLK.

Since

The only preparation, of this extraordinary cement, is that of washing the sand, and assimilating it intimately with the lime, by beating; and the only judgement requisite, in using it, is to hurry it into the wall, as quickly as possible, from the kiln.

The FARMERIES of this district, as has been intimated, are some of them on a large scale. That of DUNNIMBER, in this neighbourhood, is the most extravagant suite of farm buildings I remember to have seen.

The only thing noticeable, in the BARN of this district, is an improvement, lately introduced I believe, in the means of supporting the roof. Instead of beams and principals, *partial partition walls* are raised, on either side of the floor, and between the bays, to take the purlins; leaving an opening, or large doorway, in the middle of the building, to admit the corn.

In a capital barn, where two pair of purlins were necessary, the cheeks of walling are narrow; not more than five feet wide; receiving

Since writing this article, I have observed, in the VALE of BELVOIR, at the northernmost point of Leicestershire, a similar stone, situated in a similar manner, and producing a similar kind of lime.

receiving the lower purlins only; with short beams and principals, resting on the tops of the cheeks or partial partition walls, to support the upper ones.

This mode of construction is cheaper than using *oak* beams; takes the weight of the roof, in a great measure, off the side walls; and frees the body of the barn from beams (well known nuisances in filling a barn); yet stiffens the building. On each side the floor, these partial partitions are evidently eligible, on these and various other accounts; without any evident disadvantage.

BARN FLOORS. In this district, a peculiar method of *laying wooden barn floors* is in practice. Instead of the planks being nailed down to sleepers, in the ordinary way, the floor is first laid with bricks, and the planks spread over these, with no other confinement than that of being pinned together, and their ends let into fills, or walls, placed in the usual way, on each side of the floor.

By this method of putting down the planks, provided the brickwork be left truly level, vermin cannot have a hiding place, beneath them; and a communication of damp air being effectually prevented, floors thus laid are

are found to wear better, than those laid upon sleepers. It is observable, that the planks, for this method of laying, ought to be thoroughly seasoned.

For the method of laying barn floors with bricks, see MIN. 14.

In this district, I met with a striking instance of the impropriety of laying barn floors, with over-grown oak. A floor laid with plank, cut out of the stem of an *aged* tree but which, at the time of laying, appeared to the eye perfectly *sound*, was beaten to pieces in a few years. Barn floors require youthful, stout, strong-grained wood.

In the STABLES of this district I have seen nothing remarkable; except that the manger is sometimes formed with bricks.

The modern COWSHED of the Midland District, more especially I believe of the District of the Station, is built on an expensive plan; being furnished, not only with a gangway before the heads of the cattle, and mangers for dry meat, but also with water troughs, on a principle similar to that on which the still more extravagant fattening stalls of Gloucestershire are built*. But with
this

* See GLOUCESTERSHIRE: ART. FATTING CATTLE.

this difference, that, instead of each bullock having a separate stall, divided from the rest, by whole partitions reaching across the shed, the cows, here, stand in pairs, with only a partial, but beautifully simple division, provincially a “boosing,” between each pair.

This division consists of an upright post, set in the front of the manger, or between the troughs, with an arm, natural or artificial, springing near the ground, and rising to the same height as the post; forming together the upper part of the letter K, stiffened by slots or bars, running through the two pieces. The cattle are fastened by chains, passing round the necks, and playing, by means of rings, upon “stakes” fixed to the sides of the partition posts.

By this admirable contrivance, the cattle are prevented from goring each other, as effectually as if they were divided by whole partitions; while they have the entire platform, from end to end of the shed, as free to rest on, as if there were no guards between them*.

The

* In the sheds of a superior manager, however, I have seen a different method of constructing these partial partitions; which, instead of the triangular form described above,

The old FARM YARDS of this district are principally open; with mangers round the inside of the fences; and with cribs in the areas: sometimes with hovels, inclosed by slabs *set upright*, or by tall fagots, closely woven together. In the commonfield townships, here, as in the more northern provinces, bean stacks are, still, not unfrequently placed on these hovels, as temporary winter roofs: A species of farm building, this, which I apprehend was formerly most prevalent; but which, in a few years, will probably be forgot.

In an open yard, belonging to one of the first managers of the district, I saw a DRINKING CISTERN, on an admirable plan. It is formed

above, are formed by two posts placed upright, or nearly so; the partitions being nearly the same breadth (about eighteen inches) at top and bottom; having found that the cows, when lying down, are liable to get their heads (frequently turned back in that posture) beneath the common boofings, thereby subjecting themselves to a degree of danger; and finds that a partition, eighteen inches deep, does not prevent them from occupying the whole platform, when lying down. Besides, these upright guards may be beneficial in preventing their encroaching on each other's room, as they are sometimes apt to do, with the triangular guards.

formed by a watertight wall, raised high enough above ground, to prevent the cattle from stepping into it, and low enough, to let them drink freely. The brickwork, which forms a cistern about four feet square, is guarded by a post, at each corner, with rails passing from post to post, over which rails the cattle drink. It is fed by a covered pipe (of pipe bricks) reaching to a large drinking pool, at some distance from the yard; so that while this is full (which it is in winter) the cistern is so likewise, to the brim. If it overflow (which it generally does at that season) a waste-water pipe conveys the surplus out of the yard.

Cisterns of this kind, when they can be formed at an easy expence, are much preferable to pits, in farm yards.

A long TROUGH, by the side of a fence, and guarded by a rail, would, under these circumstances, be still better than a cistern. See WEST OF ENGLAND.

In some few "RICK YARDS" of this district, a STACKGUARD, of a peculiar kind, is noticeable. It simply consists of a circular parapet wall, of brickwork, two to three feet high; with a coping, projecting

on the outside, to prevent vermin from climbing up; and with the area, or floor, on the inside, laid securely with brick (on a level with the ground on the outside) to prevent their undermining; as well as to keep the bottom of the rick perfectly dry.

REFERENCES TO MINUTES.

For an evidence that every *hogsty* should have a rubbing-post, see MIN. 4.

For the operation of laying *barn floors* with bricks, see MIN. 14.

For the improvement of Statfold *farmery*, see MIN. 25.

For observations on *cattle sheds*, see MIN. 28.

For the operation of *charing posts*, see MIN. 29.

For evidences that a *lobby* is requisite to a *farmery*, see MIN. 112.

ROADS.

4.

R O A D S.

IN A DEEPSOILED DISTRICT, destitute, in a manner, of hard materials, as this has been already represented, bad roads are in a degree excusable. Yet there are few districts, perhaps, in which genius and industry might not construct tolerable roads, at a moderate expence.

The roads of *this* district had, it is probable, remained in a state of almost total neglect, from the days of the Mercians, until some twenty years back; when a spirit of improvement went forth. Its principal road, from Tamworth to Ashby, lay in a state almost impassable, several months in the year. Statfold Lane had long been proverbial: In winter it was unfrequented; the riding and driftways, at least, being on trespass, thro the adjoining inclosures. Waggon's were dragged on their bellies through it: to a

coach it was impassable, during the winter months: and might still have lain in that state, had not a material, which is seldom used in this intention, been applied to its amendment: namely, SAND: a material which had been neglected, in this case, though it was lodged, in sufficient abundance, in a part of the very road, which, century after century, had lain in so deplorable a state.

In this instance, the base of the road being levelled, the sand was laid on, eighteen inches to two feet or more thick, according to the nature of the bottom, on which it was laid.

This circumstance I mention for the use of townships that have sand, and no better material, in their neighbourhoods. And, having introduced the subject, it may be proper to make some remarks on the method of making SAND ROADS.

The prevailing error, which has crept into the modern method of forming roads, is that of raising them too high in the middle. (See YORKSHIRE.) But, here, the opposite extreme is prevalent.

The FORM of a made road, here, is that of a *trough*. The site of the road being
marked

marked out, the whole width, a mound of earth, provincially a "butment," is raised on either side ; and, the bottom of the trough being levelled, the hard materials are spread evenly over it ; leaving the surface of the road as flat as a floor *.

The effect of forming a SAND ROAD in this manner, especially where the soil is retentive as in this country, is, the trough retaining the water of heavy rains, the sand, instead of being hardened and rendered firm, as in its nature it is liable to be, by heavy rains, is formed into a grout with the water ; horses wading, perhaps, halfway to their knees in puddle ; as they would in any other large trough filled with sand and water. After a great fall of rain, I have seen the dips of the road covered with large sheets of water, which lay there as they would in the bed of a river, until the roadman came with his hoe and his spade, to open his "lets ;" which, in the dips of a sandy road, are presently

D 3

warped

* A more modern method of forming a road is that of raising two broad banks of earth, within the site of the road ; leaving only a narrow trough, not more than three or four yards wide, between them ; in which narrow trough the hard materials are deposited.

warped up; while the slopes are torn into gullies, down, perhaps, to the base of the road.

A sand road formed as a GRAVEL WALK, with a gentle convexity, and with an open free channel on either side, is subjected to none of these evil effects. Wet weather renders it firm; and the channels on the sides, when the descent is not too great, are rendered firm paths, for saddle horses at least, in dry weather. The SILT ROAD, across the marshlands of Norfolk, between Lynn and Wisbeach, is a proper pattern for sand road makers.

Censurable, however, as the principles of forming roads, in this country, evidently are, it would be improper to condemn them, without examination; as they have their *strenuous* advocates; and these men of the very first abilities.

ROADS incur a heavy tax on the occupiers of lands, and the principles of forming and repairing them, are as fully intitled to examination in a work on RURAL ECONOMY, as are those of FARM BUILDINGS and FENCES. Roads are necessary to the farmer, for conveying his produce to market. And, moreover,
the

the law obliges farmers to make and repair them, for the rest of the community. They have, therefore, a twofold motive for examining, carefully, into the principles of making and repairing them. Yet there is scarcely any branch of rural affairs so little attended to, and of course so little understood, as that of roads.

In the Rural Economy of YORKSHIRE, I threw together such practical ideas, on this subject, as I had, at the time of writing, collected, in various parts of the island*.

At that time, I was fully acquainted with the modern principles of roadmaking, in the Midland Counties; but being, at the same time, fully convinced that they were ill founded, I did not there notice them: nor should I, in this place, have taken up the reader's or my own time, in explaining them, had I not, in going a second time over the district, found the *theory*, instead of being seen through and exploded, actually making its entry into *practice*.

Roads are naturally *flat*, where the site is level, or gently sloping; and naturally wear into *borrow ways*, on the sides of hills. The

D 4.

first

* See YORKSHIRE, Section ROADS.

first retain a principal part of the water which falls upon them, and are rendered liable to be worn into inequalities, by reason of rain water *standing* upon them; while the latter are worn, irregularly, by the water of heavy rains *running* upon them.

To obviate these inconveniences, art and industry have been employed, during the present century, at least, in rounding the former into the BARREL or CONVEX form, that the water, which falls on them, may have an opportunity of escaping; and, of course, that their surfaces may not be injured by *stagnant* water: and in moulding the latter into the same form, that their surfaces may not be partially worn, by *currents* of water.

By adhering uniformly to this selfevident principle, the *sloughs* of the former, and the *gutters* of the latter, are effectually done away, and, with due care, for ever prevented from returning: the entire surface, while this principle is adhered to, being smooth and even, yet free from *hardness*; and is, of course, safe and pleasant to the traveller.

Formerly, in the ruddy roads and hollow ways of our ancestors, it was a week or a fortnight's journey, from York to London;

now,

now, the road being moulded and kept up, agreeably to the foregoing principle, it may be travelled, in a day or two.

Nevertheless, the principle under examination is directly opposite to that described.

By this principle, round roads are reversed, and flat ones scooped into the CONCAVE or HOLLOW form; the hollowness being preserved, as well on level ground, as on the face of the steepest hill; the entire road, from end to end, being formed into a concave hollow, or trough, to catch the water which falls in it: not, however, with any *intention* of impeding the pace of the traveller, or of reducing roads to their antient state, but under an idea of “*washing*” them.

The advantages held out, as arising from this principle of forming roads, are those of freeing them from dirt, in wet weather, and dust, in dry; and one which is still more valuable, that of saving expence in repairing them: these advantages being held out as accruing, in ALL SITUATIONS: the principle being likewise extended to ALL MATERIALS.

1796. In the first edition of this Work, I thought it expedient to examine the principle here asserted; and detected, I believe,
the

the fallacy of its foundation. But as the investigation of a general principle is better adapted to a GENERAL WORK than to a Register of the Practice of any PARTICULAR DISTRICT, I will now confine this Section to the more practical matter of these examinations, and to what more particularly relates to the Midland District.

Admitting, therefore, the impropriety of *generalizing* hollow roads, let us endeavor to ascertain the *particular circumstances* under which they can properly be rendered useful. It is not probable, that men of strong natural abilities, and in a sound state of mind, should attach themselves to error, without some show of truth to lead them to it.

The most striking good effect of washways is that of covering a level road, at the foot of a high hill, with sand and small gravel, brought down the descent by heavy rains; and this, most especially, when a constant rill happens to spread over it, and carry away the soil: leaving nothing but the harder particles *.

Another

* The most *refined* use that road water could, perhaps, be put to, would be that of conveying it down by the *sides* of a round road, and spreading it over a flat at the bottom of a slope.

Another good effect of running water is on a short and gentle slope, where the natural foundation of the road—the natural subsoil—happens to be of gravel, or other hard material. In this case, a current of water, by carrying away the soil which is generally mixed, in greater or less proportions, among such a subsoil,—as it rises to the surface, keeps such a road in perpetual *firmness*, with little assistance of art.

But even these uses of running water, confined as they are to a few situations *, are ill adapted to *public* roads: the flats, during a continuance of drizzling or even moderate

* With respect to the idea held out, that every soil and situation affords “a *something*,” of which running water will *make* a road, it is much too wild to give chase to. That soils, in general, if worn long enough, that is deep enough, would, on a gentle slope, afford a *something* to bear a *horse*, or other animal, may be true;—for although a horse path may be poached, in wet weather; yet, in dry, it is, in the nature of the tread of horses, trodden level, again, to receive, with benefit, the water of heavy showers:—but not one soil and situation, in a hundred, is capable of affording hard materials, sufficient to bear the wheels of *laden carriages*; which, in the action of wheel carriages, tend, not to fill up and level, but to deepen, the holes and gutters, made by running water: and, of course, act in concert with it, to render the road impassable.

moderate rains, are liable to be loaded with dirt; a rill not, once in a thousand instances, being at hand to keep them free; and the slopes are liable to be strewed with loose stones, and worn into inequalities, by the *sport* of running water.

A *public* road; more especially a *toll* road; ought to be free from obstructions, in all seasons: and may, with proper care, be kept in that desirable state.

With respect to *private* and *by* roads, in which carriages never travel abreast and seldom meet each other, and on which the beasts of draft are always drawn single—there appears to be only one right method of forming them; most especially where materials are scarce.

The principle had long struck me forcibly, in theory, before I saw it carried into practice, in the Midland District.

On this principle, three lines of hard materials constitute the road: a middle path for the horses, with one on each side for the wheels.

In forming a road on this principle, the middle path is set out, by a line, or otherwise, as circumstances require, and the sod
being

being removed, a carriage is drawn along, by horses walking in this path; the wheels of course marking out the middle of the two outer paths. Three trenches are then dug, of widths and to depths proportioned to the quantity of materials intended to be expended; leaving the paths, on filling in the materials, an inch or two below the adjoining surface.

This method of forming WAGGON PATHS, aptly suggests a simple HORSE PATH, or bridle road: and the Midland District furnishes instances of horse paths being formed, on this principle: indeed, it appears to have been, formerly, the Leicestershire method of forming horse paths by the side of public roads:—answering the awkward causeways of other districts.

Between Bosworth and Leicester are still the remains of one of these paths; which, in the parts where it is tolerably perfect, is, by much, the safest and most pleasant horse path, by the side of a carriage road, I have travelled upon*. As the lines of turf on the

* How much preferable are these to the high, slippery, *causeways* of other districts.

the sides encroach upon it, they are shaved off, and the path kept free and sufficiently wide.

These paths are less liable to be incommoded with dirt, than theory may suggest. The slopes are washed by heavy rains; and the dips, if proper outlets be opened into the ditches, which generally run by the sides of them, may be kept sufficiently free from water.

Thus, it is more than probable, the good effect of flat horse paths, sunk a few inches below the surface, led to the idea of carriage paths, and these to flat carriage roads, with "butments" on their sides, agreeably to the practice of this district.

This being as it may, flat horse paths are produced, in argument, as evidences in favor of flat carriage roads: a striking evidence, this, of the danger of GENERALIZING IDEAS, without due examination.

The

These CAUSEWAYS, however, which were probably intended to accommodate foot passengers as well as horses, are, or rather were, striking evidences of the efficacy of heavy rains in washing convex surfaces; for being narrow and without ruts to impede the descent, they were, in general, kept perfectly clean: much too clean, either for ease or safety in travelling.

The summer of 1789, being unusually wet, afforded me a favorable opportunity of deciding, by observations, on the effects of round and hollow roads.

In traversing the District, I did not fail to notice these effects; and, in riding from Leicester to London, through Warwickshire, Oxfordshire, &c. &c. after a month or six weeks continuance of rains, of every degree, I was, being then more disengaged, still more attentive to the form and state of the roads.

The road between NOTTINGHAM and LOUGHBOROUGH is held out, by the advocates of hollow ways, as a specimen of their good effect.

This road, however, though much flatter than modern roads in general are, is by no means uniformly reduced to the principle and form contended for: indeed, a part, which has been lately made, is thrown into the barrel form: a strong evidence that the trough principle, in this instance, is growing into disrepute. Taking it altogether, in its present state (rendered more tolerable by parts which lie somewhat round, or which lie shelving on the sides of hills) and considering

sidering the materials, an excellent gravel; and the publicness of the thoroughfare to pay for the forming and repairs,—the part I saw of it, between Trent Bridge and the top of Bunny Hill, may, without prejudice, be deemed one of the worst-kept roads in the kingdom. The *steeps* torn into inequalities, strowed with large loose stones, and set with fast ones,—and the *levels* loaded with mud to the footlocks. The more gentle *slopes*; though uneven, harsh, and unpleasant to travel upon, were certainly not indictable: a proof that on such surfaces; and with such materials, roads may be kept in a travelable state, in defiance of running water.

All that can be said farther of this road is, that had the materials been put into a better form, they would have afforded a better road. In a country where good materials are sufficiently plentiful, a traveller who pays for his road, whether on horseback, or in a carriage, has a right to expect, that it shall be, not only sound, but safe and pleasant, to himself and his horses: and a still greater right has the proprietor of a laden carriage, to expect to find the surface of the road, he pays for, firm and free from obstructions.

Every

Every part of the journey from Leicester to London bore ample testimony of the superiority of the CONVEX PRINCIPLE; and I have no longer any doubt of the propriety of forming a public carriage road, moderately round, with an open channel, on either side, as a horse path; with banks, level on the top, as guards to these paths, and as resources, in wet weather, for foot passengers; and (where the width of the lane will permit) with a side road for summer travelling. See GLOCESTERSHIRE, Article COTSWOLDS.

By giving this form to roads, and by preserving it with due attention, so as to keep their surfaces free as possible, from water, and, in a continuance of wet weather, from a superfluity of reduced materials; and by paying proper attention to the side roads;—I am clearly of opinion, that a very considerable proportion—perhaps one third—perhaps one half—of the money, which is now expended on the roads of this kingdom, might be eventually saved.

And although the whole of the expence of roads does not fall on the farmer; yet, considering the toll he pays, in addition to

the labor, or the rate, he is obliged to furnish, the principal part of it may be said to fall on the occupiers, and of course, eventually, on the owners of lands.

5.

FIELD FENCES.

IN A COUNTRY, which, for some time past, has been changing, from an open to an inclosed state, we may reasonably expect a degree of excellency, in the art of hedge planting. It seldom happens, that, under such circumstances, the art remains in a state of obscurity; but that the prevailing mode of execution is adapted to the given soil and situation.

This, however, is not invariably the case: in similar situations, on similar soils, and under similar circumstances, we find very different modes of performing the same operation: a proof that the rural arts are either very abstruse, or are not universally studied with due attention.

In Norfolk; where a deep free subsoil prevails, we see hedgewood planted by the side of a deep ditch; and perhaps near the top of a high bank; and this notwithstanding the substrata are naturally absorbent or dry: while, in this district, likewise having a deep free soil and subsoil, the plants are laid into a flat broad low bank, with a narrow shallow ditch; a mere trench; and this notwithstanding the substrata are, in a manner invariably, retentive or wet; and the surface waters, of course, have no other way of escaping, than by means of deep ditches. In a recently inclosed common field, I have seen ditches barely a foot deep, with water standing in furrows, hard by, of not less than fifteen or eighteen inches in depth!

This error in practice, however, is rather detrimental to the lands, than to the hedges; which, in this district, are above mediocrity; and their treatment, of course, requires attention.

The useful ideas, collected, in this case, fall under the heads,

Raising new Hedges;
Treatment of grown Hedges.

I. RAISING NEW HEDGES. The SPECIES OF HEDGEWOOD is whitethorn, with some instances of crabtree *. At present, however, "garden quick" may be said to be the universal hedgewood; although there was, within the memory of many men, no such thing in use.

The rejection of nursery plants, however, did not proceed from ignorance, in the method of raising them; but from principle, founded on the false notion that plants, pampered in the rich soil of a garden, were of course improper to be planted, in a ditch bank of common earth. No, no; the planters of those days knew better. "Gather them in woods, where they have been exposed to hardships, and have learnt to live upon coarse fare, and, in that case, when they come to be transplanted into hedges, they *must* thrive again."

A gentleman near Tamworth was the first who ventured to plant garden quick, on a large scale; and his success ruined the *business*,
as

* HOLLY HEDGES. In this district, I observed a natural holly hedge flourishing, as a fence against every thing, under very low-headed spreading oaks: an evidence of what might be expected from holly hedges, under oaks properly trained.

as it had long been, of "quick gathering." The quantity now raised, at Tamworth and its neighbourhood, for the Birmingham and other markets, is extraordinary. It is mostly transplanted. Its price, even at Tamworth, is seven shillings a thousand : at Birmingham, eight to ten shillings : yet, at those prices, one gardener sells, even when no public inclosures are going forward, three or four hundred thousands annually.

The most judicious planter I met with, in the district, and from whom, with the gardener here alluded to, I had these particulars, chuses his plants at four years old, transplanted at two ; and cares not how rich a soil they are raised in.

The TIME OF PLANTING, here, is not unfrequently autumn. I had an opportunity of making a comparative observation, on a neighbour's practice, between plants set in autumn, and others planted, in continuation of the same hedge, in spring. The autumnal planting, *in this case*, had a decided preference. But the situation was somewhat dry ; and the spring and summer proved so, likewise :—under these circumstances, autumnal planting will generally succeed best.

The METHOD OF PLANTING, as has been said, is that of putting the plants into a broad flat mound: generally planting *two rows*, ten or twelve inches apart, and a similar distance from the brink of the trench, by the side of which they are planted.

The reason given for this mode of planting is, that a deep ditch creates a high heavy bank, and this “overloads the roots.”

There is, no doubt, some truth in this reasoning. Plants never thrive so well, as on level ground; provided they are not incommoded by standing water: (see YORKSHIRE:) and the disadvantages of a high heavy bank have been pointed out, in NORFOLK: but it is a fact, evident in various parts of the kingdom, and particularly in my own practice in three different and distant parts of it, that hedges may be raised, with success, in the front of a high bank; and that its disadvantages are by no means equal to the advantage gained, by a deep ditch and high bank, as a defence to the rising hedge.

Two rows of posts and rails are here the common GUARD: incurring an expence equal to twice that of a deep ditch and
banklet,

banklet, on one side, and a high bank and hedge, on the other. If the hedge be planted behind a shelf, of sufficient width, and part of the mold of the ditch be applied, in forming a banklet on its outer brink, the load incurred, by the remainder, causes little, if any, impediment to the progress of the young hedge.

For the method and expence of planting a hedge, in this manner, see MIN. 123.

The nursing of YOUNG HEDGES,—a business, which, in most parts of the kingdom, is in a manner totally neglected,—is, in many cases, well attended to, here. They are pretty generally weeded, and, in some instances, hoed: in others, however, they are, here, as in other places, seen struggling among weeds;—principally of the following species,

I enumerate them, in this Register, as I paid more attention to hedgeweeds, in this, than in any other, district: and though they vary, in some degree, in different places, they are, upon the whole, very much the same, in all.

HEDGEWEEDS OF THE MIDLAND DISTRICT,

Weeds of young Hedges.

- Couch grass and other grasses *.
- The thistles, particularly the spear thistle ;
- The docks ;
- The nettle ;
- Sowthistles ;
- Hawkweeds ; and a variety of small weeds, which rob the plants of their nourishment, and ought to be cut off with the hoe, so often as they rise.
- The convolvuluses ;
- The blue-tufted vetch, and other vetches ; and
- The cleavers, and other climbing plants, are a burden to the taller more upright shoots.
- In low moist situations,
- The meadowsweet ;
- The wild angelica ;
- The willowherbs (*epilobium*) ;

The

* I have seen, in this district, quick planted, across a foul arable inclosure, in a bed of couch ! Nothing can be greater folly. The other grasses may be destroyed with the hoe ; but scarcely any art can free young hedge plants from couch ; which ought, at any cost, to be destroyed before the hedge be planted.

The perſicarias, &c. &c. are almoſt certain ſuffocation, to weak plants, the firſt and ſecond years ; if not repeatedly removed by hand, ſo often as they threaten the injury of the infant hedge.

Weeds of grown Hedges,

The briar ;

The bramble ;

The woodbine ;

The bitterſweet (*ſolanum dulcamara*) ;

Black briony (*tamus communis*) ; and in ſome places, the white briony (*bryonia alba*) ; and the

Traveller's joy (*clematis vitalba*) ; are very destructive to hedges ; eſpecially if ſuffered to grow up with them, either in the firſt inſtance, or after the hedge has been cut down.

They ought, therefore, in both caſes, to be eradicated, or at leaſt cut out, and kept under, until the hedge be free from injury.

II. THE TREATMENT OF GROWN HEDGES. Plashing may be called the univerſal practice of this diſtrict. Nevertheless, I have obſerved, in a few inſtances, a method of cutting hedges, which does not come within the deſcription of plashing.

In

In this practice ; one row of stems (if the hedge be “double quicked”) is cut to the stub, the other, hedge height ; not level, or all of the same height, but in such a manner as to lean back, away from the stubs of the fallen row ; cutting those which stand foremost the lowest, and such as lean or branch away from them, the highest ; leaving the back spray on, to form a blind, and to assist in making a fence.

Under this management, two rows of quick are evidently preferable to a single row ; for although I have seen “single quick” treated somewhat in this manner, especially in Derbyshire, the effect is very different. In this case, the stools and the stems are fed from the same roots ; the same set of fibres ; and the stems, with the spray left upon them, rob the lower shoots, from which the new fence is to rise, of a great part of their sap : while, in the other, the stools not only stand distinct from the stems, but have a distinct set of roots to support them, entirely independent of the stems that are left standing as a temporary fence.

The METHODS OF PLASHING are various : the old and still most prevailing method is

to leave part of the stems standing, as "live stakes"; between which the plashers are interwoven, in the usual manner.

Judicious managers, however, object, and with good reason, to live stakes; which, throwing out spreading heads, in the pollard manner, overhang and destroy the plashers, and prevent the shoots of the stools from rising; consequently, tend to convert the hedge into a row of thorn pollards; in which state, old hedges, that have been thus treated, are too evidently seen. On the contrary, when the entire hedge is cut down (or crippled for laying) to the stub, the plashers have no impediment; and the young shoots are the less incommoded, inasmuch as the plashers shoot less luxuriantly than the stakes. Still, however, the shoots from the stools, the only offspring of the old hedge from which a new one can be expected, are greatly injured, by the plashers overspreading them.

Hence, an improvement has been struck out, in this district, which probably raises the art of plashing to its highest degree of perfection. This is effected, by driving the dead stakes, not in a line with the stubs, but
some

some foot or more behind them; and by winding the plashers among them, and eddering them, according to the custom of this country, with brambles: thus leaving the shoots, from the stubs, the same air and head-room, or nearly the same, as if the whole were cut down, and a dead hedge raised behind them.

The advantage of this method of plashing, compared with the practice of felling the whole to the stub, is, that a live hedge, which improves by age, is raised, instead of a dead one, which grows worse every year; the disadvantage, that of part of the sap (of single hedges) being drawn away from the young shoots; which, in this case, are left less free and open, than when the whole of the stems are cleared away at the stub.

However, where there are a sufficiency of young pliable stems for plashers, and the ditch does not require much repair, the plashing here described may have, upon the whole, the preference; especially if the plashers, when the young hedge has got up, be removed from their interference with the upright shoots.

But, where the hedge has been neglected, the stems are grown few and large, particularly

larly where vacancies require to be filled up, by layers or otherwise, and the ditch requires to be new made,—felling to the stub is indisputably preferable.

It is observable, however, that, in the district under survey, the ditch is rarely remade, and but seldom scoured: even where the soil is retentive; and a ditch, of course, necessary to good management.

The *reasoning*, in this case, is the same, as in that of planting by a narrow ditch: namely, the fear of “overloading the roots!” In that case, there may be some shadow of truth; but in this, in which the roots are feeding several feet from the bank, there is probably no foundation. The practice, doubtless, originates in indolence or an ill-timed saving*.

This censuré, however, is not intended to be passed indiscriminately. There are many individuals, who are aware of the utility of open ditches, in freeing their lands from surface water.

REFE-

* Unless the superincumbent weight, by bearing on the large roots, obstruct the circulation of the sap. But seeing the well known force of these large roots, this idea likewise falls to the ground.

REFERENCES TO MINUTES.

For the principles of *Gatehanging*, see MIN. 36.

For observations on making *Sodbanks*, see MIN. 49.

For further observations on *Hanging gates*, see MIN. 54.

For an instance of *practice*, in *Hedgeplanting*, see MIN. 123.

For a proof of the nuisance of *wide hedges*, see MIN. 131.

For observations on water standing against *live hedges*, see MIN. 132.

For remarks on the *weeding of hedges*, see MIN. 152.

For observations on the nature of the root of the *hawthorn*, and on *lacerating hedge banks*, see MIN. 159.

For a proof of the nuisance of *high hedges*, see MIN. 160.

For further observations on *high hedges*, see MIN. 161.

For the probable origin of *crooked hedges*, see MIN. 162.

6.

HEDGEROW TIMBER.

FEW DISTRICTS are so thin of hedgerow timber as this. The old enclosed townships have a tolerable share, but the new inclosures, which, with the open fields that yet remain, constitute a principal part of the Midland District, are as naked, to the distant eye, as the downs of Surrey, or the wolds of Yorkshire. LEICESTERSHIRE, more particularly, stands in this predicament. There is not, speaking generally, a young oak now growing in the county. If this error should not be rectified, there may not, in half a century, be a tree left in a lordship.

This poverty in hedgerow timber, it is probable, has arisen, partly, in neglect, but much more, in a rooted antipathy, among occupiers, against trees in hedges. The mischiefs of the ash, the elm, and low spreading oaks, having been experienced, all species have been indiscriminately proscribed.

The

The ash, the elm, and lowheaded oaks, are undoubtedly mischievous in hedges; being injurious to the occupier, and destructive to the hedge. But oaks, trained in the manner which I have repeatedly recommended *, while they enhance, in a very high degree, the value of an estate, do, comparatively, little injury to the occupier, and but very little to the hedge.

The DISTRICT of the STATION furnishes an instance of the latter part, at least, of the above assertion. The road through an entire township (I believe) — Grindon — the residence of Lady Robert Bertie — has on each side of it a line of tall-stemmed trees, mostly oaks, rising in a pruned hawthorn hedge; which, far from being destroyed by them, flourishes with extraordinary vigour; closely embracing the stems of the trees; a fence against all kinds of stock.

For an instance of practice in *training* hedge oaklings, see MIN. 155.

DIVISION

* PLANTING and RURAL ORN: also NORFOLK.

DIVISION THE SECOND:

W O O D L A N D S

A N D

P L A N T I N G.

I.

W O O D L A N D S.

VIEWING the Midland Counties, generally, they are still well stocked with wood; although there has, within memory, been an undoubted decrease. Charnwood Forest has not, figuratively speaking, a stick left; — though, within the present century, much of the ancient forest remained. Many smaller plots of woodland, and townships of well wooded hedges, have been cleared away, within the last fifty years.

VOL. I.

F

There

There is little danger, however, of the district suffering through a want of TIMBER. WARWICKSHIRE, STAFFORDSHIRE, and DERBYSHIRE, are still fully wooded; LEICESTERSHIRE, with the private woods scattered round the skirts of the forest, and on the borders of RUTLANDSHIRE, has *yet* a sufficiency left to supply its internal consumption.

But with respect to COPPICE WOOD, many parts of Leicestershire, more particularly, must, even now, feel a want, and experience many inconveniencies, which a distribution of coppices would remove. It is true, that many of these woodless parts are too valuable, as grass or arable land, to be converted, on a large scale, into coppice grounds. Nevertheless, there are, in most townships, cold plots of soil, less productive of corn and grass, and angles in the outline of every estate, which might be profitably planted with coppice woods.

The DISTRICT of the STATION is in a manner surrounded by woodlands; and, during my residence in it, I collected, through this and other circumstances, more information respecting their management, than in any
other

other I have resided in. The subject, therefore, requires, in this place, especial attention.

The information, obtained, classes under the following subdivisions :

- | | |
|-----------------|-------------|
| 1. Raising. | 4. Timber. |
| 2. Selling: | 5. Bark. |
| 3. Taking down. | 6. Coppice. |

I. RAISING. It is more than probable, that most of the private woods, which we see, at present, scattered over the island; have been raised by art; and that they are not, as they are generally supposed to be, remnants of the ancient forests, or native woods.

In the old woods of this quarter of the kingdom, it is pretty generally observable, that the north and eastern margins abound with ash, while the body of the wood is principally oak; and it is believed that the ash, being a quick-mounting tree, was propagated there as a screen to the oaklings*. This is a circumstantial evidence of their being raised by art: while the *evident vestiges of the plow*, in other instances, are proofs of the position; at least as to these instances.

F 2

But

* But see MIN. 166.

But the practice of PROPAGATING WOODLANDS (I mean ordinary woodlands of oak, ash, or other native woods) can be traced, by circumstances only, in every part of this island I have observed in, excepting NORTH WARWICKSHIRE; where the practice may be said to be at present in use. Several young woods are now getting up, from acorns, and other tree seeds, sown by the hands of men now living. Yet their appearance to the eye, on the closest examination, is the same as that which we observe, in cases, where the proof is less positive.

The MODE OF PROPAGATION is that of sowing acorns, keys, &c. with the seeds of corn; or of dibbling them into grass land; as will more fully appear in MIN. 124.

II. SELLING TIMBER TREES. The present mode of disposal is by auction,—as it stands:—a mode always to be recommended, for reasons already given. See YORKSHIRE.

In the method of VALUING timber, the only circumstance which requires to be mentioned, here, is that of valuing the timber and the bark, separately; keeping two distinct accounts. This is done, by the timber merchant, when he sells the bark to the tanner
by

by such valuation: a practice which is not uncommon: the tanner, of course, making his counter valuation of the bark only. Vague as this mode of valuation may seem, and various as the proportions between the timber and the bark of different trees really are, there are men, accustomed to this mode of estimation, who will come sufficiently near the truth.

For instances of the mode of disposal,—conditions of sale, &c. see the MINUTES, hereafter referred to.

III. TAKING DOWN TIMBER TREES.

Three methods of felling are here in use:

Stocking,

Axe-grubbing, and

Axe-felling.

STOCKING (a provincial term for grubbing, or digging with a mattock, &c.) is a kind of partial grubbing. The roots are cut through, a foot or more from the stem; and, again, a foot or more from the inner cutting; taking up a short length of the thickest part of the roots, and digging a trench round the tree, wide enough to come at the downward roots.

AXE-GRUBBING is similar to the Norfolk *grub-felling* (see NORFOLK), except that

the end of the butt is left larger, here, than in Norfolk.

AXE-FALLING is the common method of Yorkshire and other places, of cutting off, aboveground, with the axe: — a method which is seldom practised; except in some few cases, where another crop of timber, or of coppice wood, is intended to be taken.

Stocking is the prevailing method; — the PRICE FOR TAKING DOWN varying with the size of the tree: for a tree of two feet diameter, the price is about a shilling; and about four pence more for cutting off the butt; the stocking and butting being generally let together.

PEELING BARK. The *Peeling Tool* commonly made use of, here, is of *bone*. The thigh and the shin bones of an ass are preferred. The former (a two-handed instrument) for the stem and the larger boughs; the latter, for the smaller branches. The handle is a forked piece of wood, fixed in the end of the bone. The point once given, by the grinding stone, or a rasp, keeps itself sharp, by wear.

The ARMS, or BOUGHS, are cut up into *posts, rails, and cordwood*, for CHARCOAL.

The

The price, for cutting and setting up cordwood, is about two shillings, a cord, of "yardwood." A "statute cord" measures four feet high, four feet wide, and eight feet long. But four feet lengths being inconvenient to the charcoal burners, it is generally cut into lengths of three feet; consequently, a cord of yardwood is only three fourths of a statute cord*.

The SPRAY is generally made up into fagots; the rate of labor being a shilling, a load, of sixty fagots; or, if the workman find bindings, fifteen or sixteen pence, a load.

IV. TIMBER. The consumption of the timber, grown in this central part of the island, (excepting the Banks of the Trent) falls chiefly among inland dealers.

In a maritime country, the trees are carried bodily to the ship yard; here, they are mostly divided, in the places of their growth, into a variety of wares. Hence, the business of cutting up—provincially, and properly, termed "converting" timber, — is, here, conducted in a superior manner; a quick

F 4 judgment

* The STATUTE CORD of this country, therefore, agrees pretty nearly with the STACK of the southern counties; though their dimensions are very different.

judgment of the proper wares, into which a given tree ought to be converted, requiring much practice.

The wares, into which the timber of this neighbourhood are converted, will appear in the MINUTES.

V. BARK. Oak bark is disposed of in two different ways: one of them peculiar, perhaps, to this district; in which, as has been said, it is sometimes valued upon the tree; the wood merchant carrying on two valuations; one of the timber, the other of the bark; felling it to the tanner, who likewise makes his estimate, by the lump.

The other mode of disposal is the common one of felling it, by the top, in the rough: the method of weighing it, or rather of estimating its weight, is, however, noticeable. The bark having been set up, in the usual manner, but with more than common care as to evenness of quantity, against horizontal poles or treffels,—and having stood some nine or ten days, more or less, according to the weather, until it be fit to carry,—the buyer chooses one, two, three, or a greater number of yards, in one place, and the seller a like number, in another. These yards of
bark

bark are weighed, and the rest measured and estimated accordingly*.

VI. COPPICE WOOD. The two principal coppices, of the District of the Station, are those of Seal and Hopwas; the former in Derbyshire; the latter in Staffordshire.

The AGE at which coppice wood is cut, in this part of the kingdom, varies much with the intended ware. For *posts, rails, and coal-wood*, twenty years or more are requisite to bring the wood to sufficient size. But, for the smaller wares, into which the produce of the coppices of this neighbourhood are chiefly converted, they are felled much oftener.

The prevailing WARES are *stakes, edders, burdles, brooms, and craterwood*; the last a species of coppice ware I have not met with, before; but which is, here, a considerable article: the Staffordshire potteries working up no small quantity of wood, in making their various packages.

In this quarter of the island, especially on the Staffordshire side of the district, where iron forges abound, CHARCOAL becomes an
object

* The same estimation being taken by the tanner and the peelers.

object of considerable magnitude to the woodman. I had an opportunity, here, of paying close attention to the process of burning it; as will appear in the MINUTES.

REFERENCES TO MINUTES.

For the practice and profit of *cultivating oak woods*, see MIN. 124.

For instances of *oak woods* being disfoliated by the *chafer*, see MIN. 126.

For the process of making *charcoal*, see MIN. 127.

For remarks on *seedling oaks* rising spontaneously in grass land, see 128.

For further obs. on the *chafer*, 129.

For the consequent *appearance* of the oak, see MIN. 130.

For obs. on the *growth* of the *ash*, 133.

For obs. on the *growth* of the *elm*, 134.

For obs. on the *growth* of the *poplar*, 135.

For an account of the *sale* of Merevale timber, see MIN. 136.

For observations on the *rise of the sap* in old timber oaks, see MIN. 137.

For the *sale* of Weeford Park timber, 138.

For the *sale* of Statfold oak timber, 139.

For

For observations on the time of *felling* oak timber, 140.

For remarks on the "*lag*" in timber, 141.

For further observations on the *rise of the sap* of oaks, see MIN. 142.

For observations on the method and caution in *felling* timber, 143.

For remarks on *tapping* oaks, 143.

For remarks on *training* timber, 143.

For general observations on the *age of timber trees*, see MIN. 144.

For remarks on the timber of *Needwood Forest*, &c. and on the *age* of oak timber, 149.

For a description of the *Swilcar oak*, &c. 149.

For an instance of the *oak* being injured by an *insect*, see MIN. 150.

For farther obs. on *charcoal*, see MIN. 151.

For reflections on the *decline of oak timber*, see MIN. 154.

For farther observations on the *cultivated woodlands* of North Warwickshire, see 156.

For remarks on the propriety of *planting steep*s, see MIN. 157.

For an evidence of the experience requisite in the business of *converting* timber, 158.

For

For remarks on the advantage of woods on *rock*, see MIN. 158.

For the *sale* of Statfold ash and elm, 163.

For remarks on adapting perennial plants to soils and situations, 164.

For observation on practice, in *converting* oak timber, 165.

For remarks on the *age*, &c. of ash and elm, 166.

For a description of the *Middleton oak*, 167.

2.

P L A N T I N G.

THE ART OF PLANTING is separable from that of raising woodlands, in a more natural and simple way, immediately from the seed. This is a summary operation, like that of sowing a crop of corn, or laying down land with grass seeds. The other a progressive work; consisting of various nice and difficult operations; both in the NURSERY
and

and in the PLANTATION. Nevertheless, PLANTING is, at this day, the prevailing mode of propagating trees; whether for USE or for ORNAMENT.

With a view to mere utility, however, PLANTING, except in HEDGEROWS, can rarely be adopted with propriety. But where ornament is a joint or the principal object, planting is in most cases eligible.

It is not my intention to introduce the subject of ORNAMENT, merely, in a work of RURAL ECONOMY. Nevertheless, the ART OF PLANTING, which is applicable, on many occasions, to USE as well as ORNAMENT, is professedly a branch of the present work.

Planting is indeed an art to which I have long been partial, and on which I have, at different times, bestowed considerable attention.

Some years ago, I digested my ideas on the subject, and revised them, in the press, during my residence in this district*.

Warm with the subject, and wishing to extend my practice, I undertook, while I was *improving* this estate, to *ornament* it.

How

* See PLANTING and RURAL ORNAMENT, a Practical Treatise; in two volumes octavo.

How far I have succeeded, the place itself must speak. What I purpose to convey, in these volumes, are some practical observations ON PLANTING: an art which my success has led me to believe I have in some measure advanced.

But these remarks being on my own practice, they will appear with most propriety in the second volume. See the MINUTES referred to below.

The plantations of this district are few, and afford little information on the subject.— Excepting those at FISHERWICK, done under the direction of the late Mr. BROWN, few have succeeded well. But, in every part of the island, we see similar miscarriages in planting: a proof that the art is not generally understood, or not sufficiently attended to.

The only circumstance that requires to be noticed, respecting the practice of planting, in this district, is that of the nurseryman's *injuring* the plants, the first year. That is, if they do not grow, he furnishes his customers with fresh ones in their stead: and this whether he plants them himself, or leaves it to others to put them in; provided that, in the latter case, they follow his directions.

This

This practice, I understand, was first established by a nurseryman of Coventry; but has since, through a kind of necessity, been adopted by other nurserymen.

Where the nurseryman is employed to put in his own plants, this is a *reasonable* practice; but, when we consider how much depends on the operation of planting, it can scarcely be deemed such, to insure the success of others.

REFERENCES TO MINUTES.

For incidents in my own practice, in the spring of 1785, see MIN. 146.

For instances of the want of success in planting, in the dry spring of 1785, see MIN. 148.

For farther remarks on my own practice, in 1785, see 153.

For remarks on the advantage of planting steep slope, see 157.

For farther incidents in my own practice, in the autumn of 1785, and the spring of 1786, see MIN. 168.

DIVISION THE THIRD.

AGRICULTURE.

I.

F A R M S.

THE Sizes of Farms, throughout the MIDLAND DISTRICT, are large, considering the quality of the soil.

The DISTRICT of the STATION contains some capital farms. *Bramcot, Pooley, Alncot, Amington, Sierfcot, Hogshill, Dunnimeer, Statfold, Thorp, Seckington, &c. &c.* lying immediately within *this* neighbourhood, rank in the first class of farms of the kingdom. Most of them three to four or five hundred acres of land, worth twenty to twentyfive shillings, an acre.

These farms are situated in the old inclosed parts of the district. How they have been
been

been aggregated to their present size is not obvious. Probably, they have never been in the state of common field. Formerly, much of them lay in large "feeding pieces," or grazing grounds, of fifty or sixty acres each. This accounts for the present straightness of many of the hedges. Some of them are extraparochial; and they may be subdivisions of townships, that have been given, by the feudal lords, to their dependants. This, however, by the way*.

The CHARACTERISTICS OF FARMS vary, of course, with their state as to inclosure. The open townships, as well as those which have been recently inclosed, are mostly in a state of aration.

The farms of the older inclosures, of which only I shall speak, are much of them in grass; being subjected, in the manner which will be shown, to an alternacy of grass and arable.

VOL. I. G FARMERS.

* 1796. Heretofore, these lands were, doubtless, appendant to the Mercian Court, which resided at Tamworth, round which these Farms are situated.

At present, they resemble, in appearance, as well as in the Plan of Management, the HAMS of Devonshire. See WEST OF ENGLAND, SECTION PLAN OF MANAGEMENT OF FARMS.

2.

F A R M E R S.

EVERY DISTRICT has its leading men; its "capital farmers:" their proportionate number varying, in some degree at least, with the sizes of farms which are prevalent, and with the state of husbandry at which it has arrived.

These men consist either of TENANTS, whose fathers, having profited by their good management, have left their sons sufficient capitals and knowledge, to increase them; or of the superior class of YEOMANRY, cultivating, in continuation, their paternal estates.

This class of occupiers have many advantages, over the lower orders of husbandmen. They travel much about the country; especially those whose principal object is livestock. They are led to distant markets, and perhaps to the metropolis. They see, of course, various modes of management, and

and mix in various companies: consisting not merely of men of their own rank in life: men of fortune and science have, of late years, admitted them into their company; and to their mutual advantage.

Thus; their prejudices are worn off, their knowledge enlarged, and their dispositions rendered liberal and communicative; to a degree which those, who have not mixed and conversed freely with them, are not aware of.

The MIDLAND DISTRICT may boast of a greater number of this description of men, than any other I have yet been over; and we may, I apprehend, venture to add without risque, than any district of equal extent in the kingdom. It is not only a large-farm and grazing country; but the spirit of breeding, which has gone forth of late years, has infused an ardour and exertion among them, unobservable in other districts: Except in Yorkshire, I have found the SPIRIT OF IMPROVEMENT no where so high:

Besides these; many of the MIDLAND FARMERS have had other two great advantages, of which farmers in general are in want.

Formerly, and still in many districts, yeomen and farmers, who were able and willing to educate their sons, did it solely with a view to fit them for trade, or enable them to follow one or other of what are emphatically termed the *professions*. Being educated, they were of course incapacitated for farmers!

Not so, however, in this country. There are men, now at the middle age of life, who have had a regular SCHOOL EDUCATION; and who, instead of being sent out of the country, to a trade, or a "profession," have been placed as PUPILS, with superior farmers, at some distance from their fathers' residences: thus, at once, improving their knowledge, by a double tuition, and breaking off, in their tender state, the attachments to customs, right or wrong, which those, who have seen only one mode of management, are too liable to form.

Hence, we find this description of men, not only ADOPTING such IMPROVEMENTS as have gained a degree of establishment, but striking out others, by EXPERIMENT; and still farther enlarging their ideas, by READING: and this with little danger of being misled.

mised. Their judgements are in a degree formed. They have a basis to build on.

Among the rising generation, and in a very few years, we may expect to find numbers of this class of occupiers. Almost every substantial farmer, now, educates his sons, and brings up one or more to *his own profession*,

If ever agriculture be brought near to perfection, this is the class of men who must raise it. MEN OF FORTUNE may, and ought for their own interest, to *encourage* and *promote*, for with them, eventually, center the profits of improvement. But the SUPERIOR CLASS OF PROFESSIONAL MEN must *suggest* and *execute* *.

With respect to the LOWER CLASSES of HUSBANDMEN, who form the main body of occupiers, their business is to *follow*: and, if

G 3

the

* By PROFESSIONAL MEN, I do not mean those, only, who have been bred up to husbandry, from their youth. There are men, in every quarter of the kingdom, who, having attended *personally*, and *closely*, during a course of years, to the *minutiæ* of husbandry, *as a profession*, are of course become PROFESSIONAL: and many MEN OF FORTUNE, who, having paid a similar kind of attention to PRACTICE, have acquired, of course, a similar kind of PRACTICAL KNOWLEDGE.

the men, whom they are in the habit of looking up to, lead the way, though it may be slowly, they are sure to follow.

Thus improvements, struck out and effected, by the superior class of professional occupiers, are introduced into common practice; while those of unprofessional men, if they merit adoption, die for want of being properly matured; or, if raised into individual practice, seldom become serviceable to the community at large.

The great bulk of occupiers consider every man, who has not been bred up in the habits of husbandry, or enured to them by long practice, as a visionary; and are more inclined to sneer at his plans, than adopt them, though ever so excellent.

Hence, probably, the inefficacy of the numerous SOCIETIES of agriculture, which have been formed, in various parts of the kingdom. There is only one, that of BATH, which, from all the information that has come within my knowledge, has been, in any considerable degree, successful; and the success of this, probably, has been, in some degree at least, owing to the professional men who belong to it.

Societies formed of PROFESSIONAL MEN, encouraged and assisted by the LANDED INTEREST, could not fail of being beneficial, in promoting the rural affairs of these kingdoms; and the MIDLAND COUNTIES, whether from centrality of situation, or from the number of superior managers in it, are singularly eligible for such a society,

But SOCIETIES, on the plan which has hitherto been adopted, though they were to be formed of professional men, under the patronage of the landed interest, would still be, in their nature, little more than *theoretical*. Mere societies want the *subject* before them. Their most probable good effect could be that of assimilating, by frequent meetings, the sentiments of the PROPRIETORS and the OCCUPIERS of lands; thereby increasing the necessary confidence between them; and thus far, of course, becoming essentially serviceable to their common interest. But they fall far short of being the most eligible institutions, for the advancement of rural knowledge.

In the Digest of the MINUTES OF AGRICULTURE, on the subject PUBLIC AGRICULTURE, I proposed an establishment of

AGRICULTURAL COLLEGES, to be distributed in different districts, as SEMINARIES of RURAL KNOWLEDGE.

It is now more than twelve years since that proposal was written, during which time my attention has been bent, unremittingly, on rural subjects; and the result is, that I now see, still more evidently, the want of RURAL SEMINARIES.

The seminaries there proposed are, however, on too large a scale, for any thing less than NATIONAL establishment; and COMMERCE, rather than AGRICULTURE, appears to engage, at present, the more immediate attention of GOVERNMENT; and this, notwithstanding the present scarcity of grain is such, that we are asking, even the AMERICANS, for a supply; and notwithstanding a very considerable part of the CATTLE, which now come to market, are the produce of IRELAND. See MIN. 122.

I have already said, in the course of this work, that it is not my intention to obtrude my sentiments, unseemingly, on NATIONAL CONCERNS; but possessed of the mass of information, which, in the nature of my pursuit, I must necessarily have accumulated,—no
man,

man, *perhaps*, having had a similar opportunity, — I think it a duty I owe to society, and an inseparable part of my present undertaking, to register such ideas, whether political or professional, as result, aptly and fairly, out of the subject before me: and, in this place, I think it right to intimate the probable advantage which might arise, from a BOARD OF AGRICULTURE; — or, more generally, of RURAL AFFAIRS; to take cognizance, not of the state and promotion of AGRICULTURE, merely; but also of the CULTIVATION OF WASTES and the PROPAGATION OF TIMBER: bases, on which, not commerce only, but the political existence of the nation is founded. And when may this country expect a more favorable opportunity, than the present, (1790) of laying a broad and firm basis of its future prosperity?

The ESTABLISHMENTS, I am now about to propose, might be formed by INDIVIDUALS, in various parts of the kingdom; and might readily be raised into PRACTICE.

The SITUATION of an establishment of this nature ought to be (though not necessarily)

family) upon a considerable landed estate; as five thousand acres of tolerable soil.

The immediate SITE might consist of five hundred acres, more or less; laid out into TWO FARMS, or general divisions;—the one PRACTICAL, the other EXPERIMENTAL*.

The PRACTICAL division to be established, in the outset, on the best practice of the district it may lie in; and to be conducted on the most rigid principles of pecuniary advantage.

The EXPERIMENTAL part to be appropriated, chiefly, to HUSBANDRY, with a compartment for PLANTING, and another for BOTANY.

The part appropriated to PLANTING, to consist of a NURSERY GROUND, and such corner or screen PLANTATIONS, as may be wanted for the use of the estate: the intention being that of making experiments on the propagation of WOODLANDS and HEDGES;

as

* If the MANAGEMENT OF ESTATES, including PLANTING, RURAL ARCHITECTURE, &c. &c. should form parts of the establishment, an ESTATE would be in a degree requisite. But, if it were confined to AGRICULTURE, solely, a FARM, only, would be wanted.

as well as that of raising NEW VARIETIES of trees and hedgewoods.

The BOTANIC GARDEN to receive a collection of NATIVE PLANTS, as well as of the several VARIETIES of CULTIVATED PLANTS, whether native or exotic: its intended use being that of a SCHOOL of BOTANY; as well as that of raising NEW VARIETIES of the agricultural plants already cultivated; and of endeavoring to discover, among the uncultivated species, FRESH PLANTS, fit for the purpose of cultivation.

The rest to be appropriated to EXPERIMENTS in HUSBANDRY; on the several departments of the ARABLE and the GRASSLAND management; as well as on LIVESTOCK;—a most interesting subject of experiment.

The use of this compartment requires not to be explained. It may, however, be proper to say, that the general intention proposes, as the main purport of the establishment, that, as an operation, a process, or a general principle, shall be fully *proved*, by experiment (but not before, however *plausible* it may be in theory), it shall be transferred to the part which is purely practical, and
be

be there *registered*, as an IMPROVEMENT of the established practice.

The BUILDINGS of the two farms to be distinct. Those of the practical, the ordinary farm buildings, which may be supposed to be on the premises. Those of the experimental to consist of

A FARMERY, or regular suite of farm buildings, on the best plan, and in the best style of rural architecture, at present known; endeavoring to unite, as far as situation and materials will permit, simplicity and conveniency with cheapness and durability.

A REPOSITORY OF IMPLEMENTS, and MODELS of farm buildings, fences, gates, &c. Not the ingenious fabrics of theory: but such as are admitted into the established practice, of the different districts of the island; or such as have been, otherwise, *fully proved*, by a continued course of practice: in order, that, by bringing the whole under the eye, regularly arranged and duly classed, their comparative merit may be more readily ascertained; and the judgement be, of course, assisted, in selecting such as may be best adapted to a given soil and situation. With
 A MANUFACTORY OF IMPLEMENTS; for
 the

the more easy dissemination of those which are already proved to be superiorly useful ; as well as for the construction of such NEW IMPLEMENTS as invention may suggest. And with a TRIAL GROUND, adjoining ; for the purpose of testing new implements (when no other ground may be at leisure), and for regulating and setting to work, those to be transferred to distant districts ; that less impediment may arise, when they reach the intended places of practice.

AN EXPERIMENTERY, for analyzing SOILS and MANURES, investigating the VEGETABLE and the ANIMAL ECONOMY ; and, generally, for the study of the more abstruse branches of the science.

A LIBRARY, for the reception of books on RURAL SUBJECTS ; as well as of those, on every other subject, which may serve to elucidate RURAL KNOWLEDGE.

A LECTURE ROOM, for the purpose of instructing PUPILS, in the PRINCIPLES of the RURAL SCIENCE ; whether they arise out of NATURAL or SCIENTIFIC KNOWLEDGE.

The PROFESSORS, requisite to such an establishment, would be a PRINCIPAL, to form and conduct, with such ASSISTANTS,

as

as circumstances would readily point out; when the scale and the departments were determined.

But, Who would wish to have such an incumbrance upon his estate? and, What individual would be at the expence of such an establishment?

Such questions would be futile:

Rather let it be asked, Who would not wish to have the rural knowledge of the island collected upon his estate? and, What liberal mind, especially if bent to agricultural pursuits, would not be gratified in seeing improvements, in the first art and science the human mind can be employed upon, growing daily under his eye? and, What man, who regards the interest of his family, would not wish to see the best cultivated farm in the kingdom upon his estate; and, of course, in due time, to be in possession of the best cultivated estate in the kingdom?

This, alone, might be a sufficient recompence for the original expence; which would, in all probability, be repaid, with still greater interest, by the PUPILS which such an establishment would, with a degree of moral certainty, draw together.

The present premium, given with a farm pupil to an *individual*, varies with the ability or character of the tutor, and with the treatment the pupil expects to receive. The usual term is four years, and the premium forty to two hundred pounds. With the first, they are treated as a superior kind of *servants*; with the latter, as *assistants*.

What man, whether of the superior class of yeomanry or tenants, or of the superior class of tradesmen or others, who are now bringing up their sons to husbandry, would not, after his son had gone through a course of private tuition, and received the rudiments of instruction, from himself or some professional friend, wish to perfect his education in a PUBLIC SEMINARY;—where he would have, not only an opportunity of seeing PRACTICE in its highest state of improvement, and of conversing with PROFESSIONAL MEN of the most enlightened understanding; but where he would be duly initiated in the THEORY of rural knowledge: in the method of making, registering, and observing the result of EXPERIMENTS; of ascertaining the natural qualities of SOILS and MANURES; of improving the varieties of CULTIVATED CROPS,

CROPS, as well as of ascertaining the inherent qualities, and improving the various breeds, of LIVESTOCK ; where he would see order and subordination, and learn the proper treatment of SERVANTS ; and among a variety of other branches of useful knowledge, the form and method of keeping farm ACCOUNTS, and of ascertaining, with accuracy, the profit or loss upon the whole and every part of his business ; consequently, of bringing it as nearly, as in its nature it is capable of being brought, to a degree of certainty.

And what possessor of landed property would not wish to have the heir of his estate initiated, at least, not in the management of ESTATES only, but in the proper management of FARMS ; without a knowledge of which, no man can be a judge of the proper management of an estate : a part of education, as essentially requisite to an heir of landed property, as the acquirements of political knowledge are to the heir of a kingdom. Indeed, the more immediate happiness of a principal part of every nation, depends rather on the possessors of estates, than on the possessor of the crown. And it is a fact incontrovertible,

trovertible, that, in either case, the respectability and personal happiness of the possessor will ever be reciprocal with those of *the people*; on which alone they can be built, with firmness and full security. Surely, then, a branch of knowledge, which naturally leads the possessor of a landed estate to live in the hearts of his tenants, can be no mean acquirement.

3.

WORKPEOPLE.

DAY LABORERS may be said to be scarce, in this district.

Nevertheless *wages* are moderate. In regard to dispatch, they are much below mediocrity; and in what may be termed the honest pride of workmen, they are very deficient.

YEARLY SERVANTS are proportioned, of course, to the number of laborers in the given neighbourhood.

Their *wages* are very low. Seven or eight pounds are the ordinary wages of a man servant ; ten pounds the highest. A woman three guineas. Not much more than half the wages given in Yorkshire. - But a want of exertion, and an extravagance in keep, especially in *beer*, more than counterbalance the disparity in wages.

The ridiculous custom of the cider country, in regard to a superfluity of beverage, has been seen, in GLOCESTERSHIRE. A custom, equally absurd, and much more *extravagant*, prevails in the MIDLAND DISTRICTS.

In the cider countries, in a cider year, the actual cost is inconsiderable. But, here, the enormity of extravagance is annual, and in a degree certain. The price of malt is much less fluctuating than that of apples and pears.

The *quantity* of liquor wasted may be somewhat less, here, than in Gloucestershire : but in *quality* and in *cost* of the beverage of farm laborers, this district far excels every other : see MIN. 22.

The TIME OF CHANGING servants, here, is Michaelmas.

The PLACES OF HIRING are the "statutes."

REFERENCES

REFERENCES TO MINUTES.

For a description of *Polesworth statute*, see MIN. 11.

For calculations and remarks on *beer*, see MIN. 22.

For instances of allowing laborers to plant *potatoes*, in the nooks of arable fields, see 44.

For instance of laborers being allowed half the crop of *potatoes*, for cultivating it, see 63.

For an instance of the *hard living* of farm laborers, see MIN. 94.

For the inconveniency of farm laborers living at a distance from the farm, see 101.

For a rare instance of strong natural ability, industry, and honesty, being united in a farm laborer, see 117.

4.

BEASTS OF LABOR.

HEAVY HORSES have been, time immemorial, the beasts of draught of this district.

Of late years, however, some few OXEN have been worked; and a spirit for working

them appears to be gaining ground, apace, among superior managers.

The HORSE TEAM of this district is grown to a shameful height of extravagance. The *pride of show teams*, a folly observable more or less in most districts, is here truly absurd. The first cost, the trappings, and the keep, are all equally out of character, for *farm* horses.

A *fashionable* sixyearold horse cannot be purchased, under thirty or forty guineas. Five horses are considered as a team. A show team, fit to be seen, cannot, therefore, be purchased for less than one hundred and fifty pounds.

The first cost, however, is not more extravagant than the annual expence. A show team is a shame to be seen, unless the horses have three or four inches of fat upon their ribs. To bring them to this exquisite state, they are of course limited in work, and unstinted in provender. "A strike, a meal, for six horses is counted fairish feeding." Two meals, a day : fourteen strike, a week ; near two and a half bushels, a horse, a week !

The harness, too, especially the housing, is truly ridiculous ; at once expensive and unornamental : standing up awkwardly high
above

above the back of the horse; like the sail-fin of the nautilus; as if it were intended to catch the wind, and accelerate or retard the motion of the animal,

With respect to ATTENDANCE, however, the custom of the Midland District is husbandly, compared with that of the southern counties; where a man and a boy are allowed to each team, of four horses. Here, a man alone, usually takes care of six horses (as a team and a saddle horse): a waggoner and his lad, frequently of two teams*.

As a species of PROVENDER, *beans* are still used; though not so liberally, as they were formerly, when the fields were open, and beans of course more plentiful, than they are now. They are pretty generally “kibbled”—that is, crushed in a mill; whether for old or for young horses. *Barley*, which is not maltable, is sometimes given to horses; but it is not a favourite, or rather not a fashionable provender: it is apt to “tan” the horses! This, too, is frequently kibbled; and sometimes *oats* are crushed.

H 3

When

* By the custom of this District, FARRIERS charge a shilling, a journey: thro which means, a waste of drugs, at least, is frequently prevented.

When *chaff* is not in plenty, all horse corn ought, no doubt, in strictness of management, to be *crushed*.

Another provender of horses, which is in use in this district, and in which, only, I have found it in ordinary practice, is “*cut meat* :” that is, oats in straw, cut into very short lengths, in a chaff-box, and in a manner which will be spoken of under BARN MANAGEMENT. This is an excellent horse food, especially when hay is scarce ; being in itself both *hay and corn*. The cutting, it is true, is some expence ; but thrashing and pilfering are thereby avoided.

5.

I M P L E M E N T S.

THE SPECIES OF IMPLEMENTS, requiring notice in this place, are,

The Waggon,

The Plow,

The Harrow.

The

The WAGGON is noticeable on account of its awkwardness, clumsiness, unwieldiness, and, in the present state of roads, its unfitness for a *farmer's* use. Its weight (with narrow wheels) a ton to twentyfive hundredweights. Its height, with the "geering" on, seven or eight feet (*when empty!*). The length of the body fourteen or fifteen feet: from tug to tail, twenty or upward!—The height of the fore wheels is four feet nine or ten inches; without any inflection in the body of the waggon to receive them! No wonder it should require near an acre of ground to turn it on; and a horse or two extraordinary to draw it.

The gawkiness of its construction originated, no doubt, in the depth of the roads, at the time it received its present form: - a tall waggon was drawn on its belly *seldomer* than a low one. But, now, when the roads are rendered more passable, a more convenient carriage ought to be adopted,

If any leading man would introduce the WEST-COUNTRY WAGGON, he might be rendering his country an essential service. The superiority of a waggon which, when loaded with a full harvest load, is not much

higher than the present waggon of this district, when empty, could not fail of being readily seen*.

The old PLOW of this district is similar to that of Gloucestershire: a long heavy unwieldy implement: requiring five or six horses to work it. At present, the prevailing plow is the modern plow of Yorkshire; from whence it has not been many years introduced, into this district: even the steep ridges of some of the common fields are now plowed, in ordinary, with this light short plow and three horses.

But a still more modern invention is the DOUBLE PLOW: an implement which took its rise in this neighbourhood; and which has made the most rapid progress, toward common use, that any implement of husbandry, perhaps, ever did.

Every circumstance that lessens the expence of tillage, without lessening its efficacy, is of the first consideration in husbandry.

In

* In this inland country, where *sail cloths* are not easily had, and where *tilts* are not yet in use, for farmers waggons, *hair cloths* are common, for covering body loads, or for spreading, occasionally, along the middle of a top load. They come high, but are very durable.

In Gloucestershire, we have seen the excessive cost of plowing, with an ill formed plow, and with five, six, or seven horses to this one plow: a mode of tillage which, heretofore, has probably prevailed in most parts of the island.

In Norfolk, and in Yorkshire, we have seen this folly done away, by a better constructed plow, and two horses, without a driver. And, in the MIDLAND COUNTIES, we find the same absurd practice now under eradication, by five, or perhaps only four horses drawing two plows, without a holder.

Double and even triple plows I have seen in use, many years ago, by a most ingenious husbandman, Mr. DUCKET of Surrey. These were formed with a *crooked beam*, and kept in an upright position, so as not to require a holder, by means of an upright spindle, passing through the end of the beam and the bolster, &c. of a pair of common plow wheels: such as are in use, for the Norfolk and the turnwrest plows.

About twenty years ago, a farmer of this neighbourhood fetched a double plow out of WORCESTERSHIRE: but this, as Mr. Ducket's, did not "shift;" the bodies of the plows
being

being fixed, at some certain distance from each other, without any means of regulation.

The "DOUBLE SHIFTING PLOW" appears, evidently, to have been the invention (or rather perhaps an improvement of the Worcestershire plow) of one BUSH, a wheelwright of Hurley, in the north of Warwickshire, about seventeen years ago.

Some fourteen or fifteen years ago, he *advertised* it, and delivered printed directions for using it; but never had, I understand, a *patent* for it.

This BUSH is still (1786) the leading maker; but double plows, of his construction, are now made, by all principal plowwrights; and may be said to be in the hands of every farmer, in the district, who has strength enough to work one.

The great merit of the invention lies, in introducing the ends of the two beams into the axle, or what amounts to the axle, of the wheels: thus giving, at once, firmness, steadiness, and truth to the machine; and, at the same time, admitting of easy means of regulating, at pleasure, the width of the furrows.

Its rapid progress into common use among farmers of every class, who work horses enow

to draw one, is best accounted for, perhaps, in the circumstance of its meeting the approbation of the "waggoners," who, to a man, are partial to it; because it requires their *whole team*, and a long whip to drive it: while they as uniformly disapprove of whip-rein plows; because they break their team; and wrest part of their horses from them; beside subject them, as they conceive, to the disgraceful task of both holding and driving their plow. And the farmers with good reason approve of it; because, in some cases, five horses and one man, with a double plow, will do as much or nearly as much work, as six horses, two plows, two men, and two boys, usually do with single plows.

On straight even ridges, and level ground, the double plow makes very good work; but wherever the lands are crooked, or are wider at one end than the other, or the ground lies in hills and hollows, such work is frequently made, as a good plowman would, and as every farmer ought, to be ashamed of.

However, in level work, *when the land is wet* (and liable to be poached by horses abreast), the double plow gains an advantage over the two-horse plow. Nevertheless, it

is allowed, by men in this district, who work both on a large scale, that though the double plow may, *in some cases*, be used with superior advantage, two horses abreast are, *on the whole*, the most eligible plow team.

The same principle of guiding by wheels, without a holder, has been of late years extended to the single plow. I have observed one man and a boy driving and directing two of these plows, with three horses, at length, in each. The man going first, and having guided his own plow at the end, and entered it securely, drove out the boy's team; and, having seen that fairly entered, stept forward to his own. This method applied to two double plows (to which it is equally applicable) is reducing the *manual labor* of plowing to the lowest degree: one man and a boy to four plows: and, in a clean soil, in good working order, with a level surface and long straight parallel lands, good work may in this way be made.

The HARROW, which requires to be particularly noticed, here, is one of very large dimensions (as six feet by five and a half, with five bulls and twentyfive tines) very heavy, and with the tines very long and strong,—
hung

burg behind a pair of wheels,—with shafts, similar to waggon fore wheels—and with a “*running bull*.”

This, in tearing up to the surface, and exposing there, the buried clods of a fallow, after those on the surface have been reduced, is an excellent implement.

I do not mean to speak of a large single harrow as being peculiar to this district; but I have not elsewhere seen it drawn with WHEELS; which, bearing up the fore part, renders it much more effectual than when it has not this support.

Nor have I seen, in any other district, the “*RUNNING BULL* ;” an admirable part, whether of a single or the double harrow. It consists, in the case under notice, of a string of iron, an inch or more in diameter, fixed on a cross bar, in the front of the harrow, and reaching almost, but not quite, from end to end of the bar (the immediate corner of a harrow being an improper point of draught); On this string of iron, a ring, with a chain passing to the wheels, plays freely from end to end;—consequently, whichever way the team turns, whether to the right or to the left, the harrow, by the point of draught
being

being at liberty to shift from side to side, is not liable to be strained nor overturned; nor is the hind horse subjected to any unnecessary exertion at the ends.

A more simple, and equally effectual, method is to tenon the cross piece, in front, into the two outside bulls, leaving the inner bulls short, so as to admit of a large iron ring, to play upon the cross piece, made round and smooth for that purpose; with an iron pin a few inches from each end, to prevent the ring from running up quite to the corners; thereby giving, as has been said, a more eligible point of draught.

For instances of large farms having each a BLACKSMITH'S SHOP, see MIN. 48.

6.

THE WEATHER.

THE BAROMETER is here in good esteem. I have found it nowhere so well attended to, as in Yorkshire, and this district: and, what is observable, in these districts a
 general .

general spirit of enquiry and improvement is singularly prevalent. For want, however, of paying due attention to *other* circumstances of the atmosphere, than its *weight*, disappointment in the weather must of course frequently occur, in both districts*.

During my two years residence in the MIDLAND DISTRICT, I paid an almost unremitting attention to this subject; especially during the HARVESTING MONTHS of *July*, *August*, and *September*: in which I kept a REGISTER OF THE WEATHER, on the plan of that formerly kept in Surrey †; noting, with sufficient accuracy, the STATE OF THE ATMOSPHERE, with respect to its *weight*, *moisture*, *heat*, *motion*, and *appearances*; with the *quantity of rain*, or, more generally, the STATE OF THE WEATHER, which resulted, each day, from the present and preceding state of the atmosphere; the only philosophical basis on which to found a foreknowledge of the weather.

Beside these registers, in summer, I marked the PROGRESS OF SPRING, and caught the characteristics

* See YORKSHIRE, Art. WEATHER.

† See EXPERIMENTS and OBSERVATIONS ON AGRICULTURE and the WEATHER.

characteristics of SEASONS ; such as, having seldom occurred, require to be registered*.

APRIL 28, 1784. The last month as well as the present have been singularly cold and peevish: this far, it is the backwardest spring I have known. The hazel did not begin to blow, until the second week in March ; and continued to blow, until the middle of April !

It seldom happens, that there are not a few genial days, in February or March, to bring out some of the earlier plants ; but, this year, even the coltsfoot and dwarf deadnettle did not *begin* to blow before 6th April ! nor did the grosberry foliate, until the 13th April ! and the hawthorn hedges are still as naked, as they were at Christmas.

Extraordinary ! the swallow, this year, returned, and the grosberry foliated, the same day !

* 1796. Those Registers of the WEATHER, being elementary, rather than practical, I omit, in this Edition : retaining, however, what relates to the SEASONS ; as well as some Practical Remarks on the HYGROMETER ; and a striking instance of the value of the BAROMETER ; together with some GENERAL OBSERVATIONS on the result of the information gained, by two years attentive experience, in the difficult but useful art of FORESHOWING THE WEATHER.

day! and notwithstanding the backwardness of spring, the cuckoo began to call the 26th April: in a sharp frosty morning!

How various are the circumstances attending the progress of spring, in different years! in 1779, the grosberry foliated the 20th February, and the swallow did not appear until the 8th May*.

PROGRESS OF SPRING 1784 †.

Hazel blowed, March-April!

Grosberry foliated, 18th April!

Swallow returned, 18th April!

Cuckoo began to call, 26th April.

Sallow blowed, 27th April!

Poplar in pride, 7th May.

Hawthorn foliated, 9th May.

Blackthorn blowed, 11th May.

Fine-leaved elm foliated, 13th May.

Oak foliated, 18th May.

Ash foliated, 24th May.

Hawthorn blowed, 31st May.

Wheat shot into ear, 20th June.

VOL. I.

I

JULY

* See NORFOLK, MIN. 125.

† In *this* neighbourhood: an early situation. See CLIMATURE.

JULY 9. The first week in May, summer set in; so that, this year, there was no palpable progression of spring: it might be said to be winter, one day, and summer the next. Vegetation broke forth, at once, with unusual vigor. During the principal part of May, and the first three weeks of June, it was rapid, perhaps, beyond example. But toward the wane of the month, either through too much moisture and coolness, or from the powers of vernal vegetation having exhausted themselves, there was an evident check in vegetation, especially of grass. About the first of July, the rains took up, and dry weather gave, at length, a loose to haymaking.

AUGUST 12. An hygrometer, in the house, is not, invariably, a guide to the moisture of the air, in the field.

Yesterday, two hygrometers, in the house, though exposed to a thorough air, stood at 7 to 8° moist; while hay spread upon the ground, as wet as rain could make it, dried sufficiently to be carried (by the Midland farmers) about three o'clock in the afternoon.

To prove the comparative states of absorbency of the air, within doors, and without,

I placed

I placed one of the instruments, in the open air: it fell 5 or 6°, in about an hour; while that in the house remained unmoved.

In this case, the probable reason of so great a disparity, was the local dampness of the situation, in the house; caused by the unusual dampness of three or four days preceding; and which had not yet had time to escape.

AUGUST 14. The string of a hygrometer should be gently stretched, before the true state of the moisture of the atmosphere can be ascertained by it: more especially after the air has been remarkably moist, and is growing drier.

Notwithstanding the air, to day, is as dry as sun and wind can make it, and, to common appearances, as dry in the house as in the field, the hygrometer, in the former, stood at 3° moist.

Being impatient to see the index fall, I pressed it down gently with the finger, some two or three degrees; and, to my surprize, it stood there. I then forced it down still lower; where it resisted the pressure, and, on being set free, rose deliberately to somewhat above par; where it still remains.

This incident led me to another instrument, placed in the sun and wind; and which stood at 4° dry: but after forcing down the index to the stretch, below the extreme point, it rested, and now stands, at almost extreme dryness.

Excessive moisture, on being dried up, leaves behind it a gumminess (especially perhaps in a linen substance) which the weight of the index is not able to overcome. It is, therefore, as necessary to press down the index of a cord hygrometer, as it is to tap the case of the barometer.

AUGUST 15. The air is at length become thoroughly dry, as well in the house, as in the field.

One hygrometer, placed in the *wind* and *sun* (very warm; 89° in the *sun*; 77° in the *shade*) dropt to 8° dry. Removed it into the *shade*, but full, as before, in the wind, — it remained stationary, for some time: but afterwards sunk $\frac{1}{2}^{\circ}$ still lower. Replaced it in the *sun*: no perceptible variation took place.

A proof that the *sun*, when the *wind* is absorbent, is of little use, in the *drying* of vegetable substances*.

Another,

* Nevertheless, in what is termed the *weathering* of hay, &c. the *sun* may be most effective.

Another, which remained in the house, fell equally low ! and, on returning the portable one to its place in the house, it did not rise even a hair's breadth !

Proofs, that when the *air* is highly absorbent, it has the property of drying quickly and thoroughly, without either *wind* or *sun*.

JUNE 30. The last winter and spring have been strongly marked ; and the summer continues no less extraordinary. The frost, taken altogether, unusually long and severe ; with but little snow ; and this little drank up by the sun, or dissipated by the dryness of the atmosphere ; a very small portion of it penetrated the soil. Yet not one drop of rain (*scarcely* drizzling showers excepted) from November until the latter end of May, when the ground was moistened nearly plow deep. But, from that time to the present, the weather has been uniformly dry, and often excessively hot !

The early part of this spring advanced more slowly, even than that of the last. For although it made an effort about the 20th of March, frost and snow returned the 22d, and continued till the beginning of April. The *coltsfoot* did not shew itself, before the

5th of April; nor the *pillwort* disclose its blossoms, till the 6th. And those of the *hazel* were never conspicuous: it might be said to blow about the first of April. The *grosberry* did not foliate till the 16th; before which I saw two *swallows* nesting!

PROGRESS OF SPRING 1785.

Hazel blowed, about the 1st April.

Fieldfares singing their parting song, 6th April*.

Sand martin (*hirundo riparia*) nesting, 13th April.

Swallows nesting, 14th April.

Grosberry foliated, 16th April!

Sallow blowed (a pale sickly color) 16th April.

Hawthorn foliated, 26th April.

Poplar in pride, 26th April.

Female wasps, 26th April.

Cuckoo—uncertain—

Blackthorn blowed, 5th May.

Oak foliated, 12th May!

Ash foliated, 24th May!

Hawthorn blowed, 1st June!

Wheat shot into ear, 24th June.

The

* But though in full chorus, on that day, they did not take flight, till some time afterwards.

The foliage of trees was, this spring, singularly rapid. The elm, the maple, the fallow, &c. &c. *and the oak!* were all in a state of foliage, at the same time! the 7th May.

But the most observable circumstance, in the progress of vegetation, this spring,—was the early *foliation* of the *oak*, compared with that of the *ash*, and the *blowing* of the *hawthorn*: the ash near a fortnight, and the hawthorn near three weeks, after the oak!

It is likewise remarkable, that the *meadow trefoil* (the wild red clover) blowed, this spring, with the *meadow foxtail* and *vernal!* beginning to blow the 12th of May: actuated, probably, by the same law of nature as the oak: both of them tap-rooted, deep-striking plants: while the ash, the hawthorn, the foxtail, and the vernal are merely fibrous, and feed, comparatively, near the surface. Hence, admitting the principle of vegetation to be merely that of comparative rarefaction, these extraordinary circumstances may be accounted for, in the different states of the earth and the atmosphere, at the times these circumstances took place,

AUGUST 7. On Wednesday last, the 3d of August, ended the DROUGHT OF EIGHTY-FIVE.

Prior to that day, partial thunder showers had quenched particular spots; but no general rain took place, in this part of the island, till that day,—when an inch of rain, at least, fell. This, with some showers, before and since, have moistened the soil to the bottom; and fully satisfied the farmers; who are now calling out for fair weather, to get in their harvest.

A “DRY SUMMER” is a phenomenon to the middleaged men of this country. Old George Barwell * (seventytwo) says no man, who cannot recollect forty years, knows anything of “dry summers:” about forty or fifty years ago, he says, there were three or four dry summers, nearly succeeding each other; and speaks of one, about twenty years ago: adding, that he never knew a dry summer, which was not preceded by a severe winter, and succeeded by great crops. He foretold, with great confidence, early in the spring, the dryness of this summer: saying that he did not remember an instance, before
last

* See MIS. 120.

last year, of a long frost without a dry summer to succeed it *.

The summer after the "nine weeks frost," he says, was dryer than this has been; and the crops of that summer, particularly the wheat, did much worse, than they have done this; owing chiefly to its being more injured by the frost. The price, the ensuing winter, got up to nine shillings a bushel. But the next year's crop was so profuse, it got down to half a crown! and continued low, for several years afterwards; the crops being remarkably good: owing in part, he thinks, to the frost; but still more to the drought. He seems to consider the rays of the sun as a species of manure!

Be

* This year, 1789, is another exception. Last winter was remarkably dry (see GLO. ECON.) with a very long frost; and this summer as remarkably wet. Not more than three weeks or a month's harvest weather, for both hay and corn. The early cut grass, and the late cut corn, were in a manner wasted. Summer floods were perhaps never more mischievous. In going down into Leicestershire, in July, I saw not only hay cocks, but waggons, floating in the meadows. And in returning, in October, by the way of Oxfordshire and Berkshire, the bean crop almost entirely, and much barley were still out. And by authentic information, from Yorkshire, the same crops were then in a similar state, in November! when, on the lower lands, little wheat had been sown; nor any prospect of sowing it.

Be this as it may, his natural understanding is remarkably strong, and his observations, on rural matters, generally clear, and frequently just.

To the DRY SUMMER OF EIGHTY-FIVE I have paid some attention; and it may be right to preserve such particulars, respecting it, as are now fresh in my mind.

It was PRECEDED by a continuance of frost without snow; a remarkably dry winter.

The ATTENDANT CIRCUMSTANCES, beside those of the weather which appear above, were,

An overabundance of *insects*: the oak and the apple have been in a manner disfoliated, by a caterpillar (see MIN. 150.) The turnep, too, beside the beetle and the tenthredo, has been pestered, this year, by a new enemy—an aphid (see MIN. 61 and 84). But, what is observable, the chafer (the common brown beetle) scarcely made its appearance, in this district.

Vegetation, in the early part of the spring, though the ground was sufficiently moist, was in general weak; owing principally, perhaps, to night frosts; and, in the later part

part of spring and in summer, it has been unable to exert itself; the subterraneous moisture being exhausted, without being replaced by a supply from the atmosphere.

Pasture grounds were, of course, bare, and *meadows* short. Nevertheless, it is observable, that

Cattle, were their pasture ever so naked, looked sleek and healthy. But, unless where ground was understocked, cows gave little milk, and grazing cattle gathered little fat.

Even *horses* were distressed for want of water. See MIN. 58.

Sheep alone did well. In a moist country, dry weather is favorable to sheep. It *raises* them to their natural situation.

Wheat, injured by the frost, got thin upon the ground, in the spring: in some places, it was so bare as to be scarcely worth preserving as a crop.

Spring corn, in general, came up partially. Some, however, sown early and immediately after the plow, came up well together, and preserved a pretty good strength of vegetation.

Plantations, and fresh-planted hedges, fared extremely ill. The frosts continued late; and

and were immediately preceded by dry parching winds. See MIN. 148.

Fires were never so frequent: no less than two villages have suffered almost total destruction, in the Midland Counties alone.

No *thunder*, until last month; when it became very frequent: otherwise, in much probability, we should still have had a continuance of drought. For, generally speaking, we have had no rain which has not been accompanied with thunder and lightning.

The *barometer* has been no certain guide to the weather. Thunder, alone, seemed to preside in the atmosphere.

Drinking pits were, of course, dry: many *springs* the same: and *rivers*, in consequence, unusually low. Millers, perhaps, never experienced a greater want of water, than they did, for some time, before the late rains brought a supply to their pools. Even the

Price of wheat was affected by the circumstance: their mills being full, and their purses empty, the markets became crowded with samples, and a fall in price was the natural consequence.

A remarkable *fall in the price of livestock*. In the spring, stock was unusually dear: there

there was not nearly enough in the country, to supply the cravings of the graziers: owing, perhaps, not more to a real scarcity, than to a succession of good grazing years, The rage for stock did not abate, 'until the middle of May, when lean cattle began to drop, and continued falling, in price, until Tamworth fair, 26th July; where store cattle could not be sold, at any price. Even pigs, which, four months ago, were worth fifteen shillings a head, might, a fortnight ago, have been bought for ten. Horses, too, experienced an extraordinary fall. Sheep alone kept up.

The CONSEQUENCES, so far as they are yet unfolded, are—

Fallows appear to have received an extraordinary degree of melioration. The turnep fallow of No. 2. is in a state of tilth (friability, mellowness) in which I have not, I think, seen plowed ground, before; owing, perhaps, not more to the dryness of the summer, than to the frost in winter, when it lay in ribs, or narrow single-furrow trenches. The rootweeds appear to be totally annihilated; and the seeds of weeds, unlocked by the pulverization of the soil, and now sufficiently moistened

moistened by the late rains, are vegetating : the surface is green with seminal weeds.

Fallows that have this summer received tolerably good management, will, it is highly probable, communicate a degree of fertility to the soil, for some years to come ; and it is equally probable, that soils, not in a state of fallow, will receive a similar kind of improvement, from their texture being broken by the frost, and their crudities drawn out, or corrected, to an unusual depth, by the sun. I speak more particularly of strong and middle soils. There is indeed an idea, which is probably of ancient date, as it has grown into a maxim, that “ a dry summer was never bad for England *.”

A failure of the turnep crops : except a few patches which were sown early, when the spring moisture was not yet exhausted, and when their enemies—from what cause is a mystery—perhaps for want of a shower to assist their exclusion—suffered the plants to
rise

* The summer of 1786 I spent in London, and cannot speak, from my own observation, of its crops. The summer of 1787 shewed such a strength of vegetation as I never have, in any other summer, observed. See YORKSHIRE ; Sect. WEATHER.

rife without a check. But the middle and the later ſowings have been cut off, wholly, by the *beetle* and the *aphis*; which would not ſuffer the *caterpillars*, though numbers of flies were among them, to partake of the ſpoil; the plants being commonly devoured before the eggs of the *tenthredo* had time to be matured. I found one nearly ready for excluſion, and another half naked in its nidus; part of which had been devoured by the rapacious beetle.

A ſcarcity of hay. Not one fourth of a common crop; including both meadows and upper lands. See MIN. 56.

An unevenneſs in corn crops: occaſioned by the wheat being injured by the froſts; and the ſpring corn riſing partially; through a want of ſufficient moiſture, at the time of ſowing; appearing, throughout ſummer, in two or perhaps three crops.

A plumpneſs of grain: eſpecially of wheat, and of oats that were ſown early*.

A ſcarcity

* Mr. BAGE, of Elford, on whoſe accuracy I can rely, mentions a remarkable circumſtance reſpecting his wheat; which, this harveſt, is ſo full in the ear, that while the ſtraw was yet underripe, the grain, aſſiſted by the late ſhowers and gleams, burſt its bounds, ſhewing itſelf to the eye, as it ſtood upon the ſtalk; and ſhedding, in the act of reaping, a quantity nearly equal to the ſeed ſown.

A scarcity of cheese. Not more, perhaps, than two thirds of the ordinary produce of factors cheese will go to market.

A scarcity of fat cattle. It is probable, that half of the "feeders," in the district, are not of more value, now, than they were when turned to grass; and still more probable, that not one in ten is what is termed good beef. See MIN. 53.

Upon the whole, this dry summer is likely to produce, in the first instance, *a very bad year for farmers*; and all the consolation they have, at present, is the hope of a succession of better crops, in future *.

AUGUST 30. Yesterday, in much probability, the *barometer* and *hygrometer* were instrumental in saving three times their cost. I had some wheat to carry, and some barley to mow. The wheat was in fine order, except the immediate butts of the sheaves; which, being set up when the ground was moist, the bottoms remained damp; and the straggling ears, which happened to touch the ground, were some of them damaged. It was therefore proper, that the shucks should be

* Great quantities of *mushrooms*, and of *wasps*, were other consequences of the dry summer of Eightyfive.

be laid open, and the butts aired, before they were carried; and my intentions were, to have mown barley, in the early part of the day, and to have carried wheat, in the afternoon; allowing the butts and the inner sides of the sheaves all the forenoon sun and air to dry them.

The three preceding days had been tolerable harvest weather, and the early part of the morning was bright and fine: general appearances, then, bespoke a fine day. But the *barometer*, though high ($3\frac{1}{2}^{\circ}$ heavy), was sinking: the *hygrometer* getting moist. The preceding morning had been marked by a *white frost* (the first this autumn), and the *canopy*, the two preceding days, had been frequently scattered with streamers. The *sun*, too, began, as the day advanced, to lose its splendor, and to be partially hid among the clouds.

It was therefore deemed expedient to lose no time, in airing the sheaves; and to carry them as fast as they were ready.

The last load was barely in the barn, when rain set in: but, thanks to the *barometer*, on which chiefly I rested my judgement, the wheat is secured, and the barley is still standing.

GENERAL OBSERVATIONS. On the whole of this summer's experience, I have been less certain, than on that of the last: owing, principally, to the barometer resting about par: the atmosphere, remaining in equilibrium, was susceptible of the slightest alteration of moisture, wind, lightning, or other impulse.

Considering, however, this circumstance, as well as that of my seldom having an opportunity of seeing the western horizon, during the setting of the sun; and with these, the extreme wetness of the corn harvest; it is not, perhaps, less remarkable that I should have been *caught, only once*, this summer, than that last summer I should escape without an accident.

At present, I am clearly of opinion, that, by attending to the BAROMETER and the SETTING SUN, only, the weather may be foretold, frequently for three or four days, generally for twentyfour hours (a length of time essentially serviceable to a farmer) with a degree of certainty: provided the atmosphere be not, in the mean time, agitated by thunder and lightning; against which there appears to be, at present, no certain guard.

They

They will sometimes foreshow themselves for several hours; in the figure and color of the clouds: but in general, *perhaps*, they are not there to be foreseen: and the grand desideratum, now wanted, is a PROGNOSTIC OF LIGHTNING; as well as a practical test of the presence of the electrical fluid, or the principle of lightning: for it is more than probable, that this has its influence on the atmosphere, though it do not show itself in lightning, or still more forcibly declare itself in thunder.

But supposing that even thunder, the most certain harbinger of rain, cannot be foreknown with any degree of certainty; this, considering its comparative unfrequency, ought to be no discouragement to the farmer.

The sailor, though he cannot calculate the longitude, *with certainty*, is nevertheless assiduous in making and registering his observations.

To pursue the comparison, a farmer without a barometer, in HAYTIME and HARVEST *;

K 2

is

* From general observation, as well as from the incidents registered aforegoing, the weather appears to be influenced, in some degree at least, by different causes, in different

is a sailor, at sea, without a quadrant. And, in the strictness of good management, it is not less requisite to the latter, in that situation, to be attentive to his log-book, than for the former, in those seasons, to pay due attention to his register.

To the student, at least, a REGISTER is indispensibly requisite: it is not merely a stimulus to his attention, but, by preserving what no memory can retain, becomes an authentic document of study; is a record of reference to a combination of facts: the purest fountain from which to draw practical knowledge.

PLAN

different seasons: and although it may not be wrong to *observe* these influences, in AUTUMN, WINTER, and SPRING; yet I am clearly of opinion, that the facts arising from such observations, ought not, in drawing inferences, to be *mixed* with those collected in the SUMMER MONTHS. For other remarks on this subject, see EXP. and OBS. on AGRICULTURE and the WEATHER.

7.

PLAN OF MANAGEMENT

O F

F A R M S.

THE OBJECTS of the Midland husbandry vary, in different quarters of the GENERAL DISTRICT, as has been already intimated, and as will more fully appear, in the course of this volume.

In the DISTRICT of the STATION, the four grand objects are mixed, in a singular manner :

GRAIN of almost every species;
 BREEDING in all its branches ;
 DAIRYING on a large scale ; and
 GRAZING, both cattle and sheep *.

K 3

The

* And to these might be added a fifth,—JOBING ; which is not here, as in other districts, confined to what might be called professional *dealers*, but enters, more or less, into the business of *farmers*; as will appear in MIN. 107.

The OUTLINES of management consist in keeping the land in *grass* and *corn*, alternately, under a singular system of practice; and in applying the grass to the *breeding* of heifers for the dairy, to *dairying*, and to the *grazing* of barren and aged cows; with a mixture of ewes and lambs for the butcher: all together, a beautifully simple system of management; and, being prosecuted on large farms, and by wealthy and spirited farmers, becomes a singularly interesting subject of study.

In giving a detail of the ARABLE MANAGEMENT, I shall attend solely to the INCLOSED TOWNSHIPS; which, whether the inclosures be new or of an older date, are cultivated under the same course of management.

The husbandry of COMMON FIELDS is the same, in many different parts of the island; as if a general order or arret had, at some early period, gone forth for their regulation. In Yorkshire, in Gloucestershire, and in the Midland Counties, one uniform practice prevails: uniform, I mean, in the *outline*: in the *minutiæ* differences are traceable; and as, in a few years, the common field husbandry

bandry of this island will probably be no more, I have endeavoured to catch these minutial differences in the MIDLAND COUNTIES. For which see MIN. 98.

COURSE OF HUSBANDRY. No circumstance, belonging to the provincial practice of this kingdom, has been, to me, a matter of more surprize, than the SUCCESSION OF CROPS, in the prevailing practice of this district.

The GENERAL PRINCIPLE of management is that upon which every middlesoiled district ought to form its practice: namely, that of CHANGING THE PRODUCE, from grass to arable crops, and from grain to herbage.

But whether the MINUTIÆ of practice, established in the district under survey, be eligible, in every other middlesoiled district, I mean not here to say. I will endeavour to give a faithful register of the practice, and leave the reader to adopt the whole, or such part of it, as may be found eligible in his own situation.

In the prevailing practice of the district,—a practice whose origin I have not been able to trace, having been prevalent in the inclosed

townships, I understand, time immemorial,—the course of management is this :

The land having lain, six or seven years, in a state of SWARD, provincially “TURF,” it is broken up, by a single plowing, for OATS; the oat stubble plowed, two or three times, for WHEAT; and the wheat stubble winter-fallowed, for BARLEY and GRASS SEEDS; letting the land lie, during another period of six or seven years, in HERBAGE; and then breaking it up again, for the same singular SUCCESSION OF ARABLE CROPS.

There are men, however, who object to this practice; arguing, that the soil cannot be kept sufficiently clean, under this course of management; and, on the lighter lands, on the forest side of the district, it is become prevalent to clean the soil, for barley and grass seeds, by a TURNIP FALLOW: a practice which has spread itself, more or less, over the whole district. But the turnip crop, as will be shewn under the head TURNEPS, is losing ground, on the stronger soils; on which, nine acres of ten are kept, regularly, under the succession of

Turf,

Oats,

Wheat,

Wheat,
Barley,
Turf,

as the lands of Norfolk are, under the Norfolk system of management,

REFERENCES TO MINUTES.

For conversation, and reflections, on the *arable management* of this district, see MIN. 19.

For a caution to the occupiers of *extra-parochial farms*, 33.

For general reflections on the *business* of farming, 67.

For an instance of unpardonable management, 76.

For observations on *neatness* and *minutial* management, 78.

For an instance of the use of *experiments* to farmers, 89.

For reflections on *jobbing*, 107.

For an instance of the folly of *speculating* in husbandry, 114.

8.

S O I L S
AND THEIR
M A N A G E M E N T.

THE SPECIES OF SOILS have already been mentioned, in describing the district at large. The prevailing species is a DEEP SANDY LOAM; varying, however, in strength and productiveness: but, taken throughout, few districts can equal the district of the present station, in uniformity of soil; the variations in productiveness being frequently occasioned by

The SUBSOIL, which, though likewise remarkably uniform, is not altogether so. Beds of *sand*, and thin seams of *gravel*, are found in different parts of it; and a *red clay*, provincially “marl,” in others; but the prevailing subsoil is a SANDY LOAM, or brick earth; varying, like the soil, somewhat in strength.

This

This variation of subsoil is a natural cause of variation, in the productiveness of the soil: water, imbibed by the absorbent strata, and checked in its course by the retentive, is pent up, and forced toward the surface; rendering the soil cold and ungenial.

Nevertheless, UNDERDRAINING—found its way, late, into this district. Its first appearance in it was upon *this* estate, about thirty years ago; when some men from the Morelands of Staffordshire, into which, it is probable, the art had travelled out of Lancashire, brought it into this country.

Its *establishment*, here, was probably owing to a mere circumstance. A farmer in the neighbourhood, struck with this novel practice, prevailed upon one of his laborers, who was a clever fellow at a ditch, to go and see these “foreigners” at work. He went; caught their art and their tools in his eye; brought them both away with him; got tools made; commenced “sougher;” and still remains the most experienced of the district: though, from him, several others have taken up, and long followed, the business; so that, in the course of a few years, most of the principal farms have been “gone over:”

over:" that is, have received the benefits of this cardinal improvement.

Thus genius and judgement, when happily joined, are valuable, even in a ditch. OLD SAMUEL, who is surnamed CLEVERDYCHE, and from whom I have these particulars, is, in truth, a genius of the first cast. See MIN. 106,

It is observable, however, that, previous to the introduction of the present art, a species of underdraining had been practised in this district,—with THREE ALDER POLES; which have frequently been found, not by old Samuel only, but by other experienced foughers, buried in very wet boggy patches, one upon two, in the triangular manner; forming a kind of pipe in the center.

But it does not appear, by the situations in which these poles are found, that the modern art of "killing springs," as it is termed, was known to the more ancient foughers.

The MATERIAL of foughing, made use of by the Morelanders, was *wood*: and old Samuel continued to drain with this material, for many years. But finding, that, in the course of twelve or fourteen years, the springs broke out again, he has not, for many years, used

used wood ; except in very difficult cases ; and, there, not alone. He reckons twelve or fourteen years to be the longest duration of wood drains ; let them be ever so well made.

The uses of wood were, therefore, superseded by *stone* ; pebbles ; provincially “bowlders ;” picked off the arable land ; the almost only stone the country affords ; and better stones for the purpose need not be desired. With these stones, the principal part of the effective drains, now in the country, have been done. The method of forming these drains will appear in MIN. 106.

Sod or “turf” drains, likewise, have been introduced, into this district ; but thro a different channel ; and in a manner which ought not to be passed unnoticed ; as it shews what may be expected, from the experience and example of the superior class of professional husbandmen, assisted by the spirited encouragement of landed gentlemen.

Some twenty years ago, Mr. William More of Thorpe, in *this* neighbourhood, having observed, in a distant district, this method of draining, mentioned it to his landlord, the late Mr. INGE of Litchfield (whose character, as a landlord, and as a magistrate,

magistrate, was an ornament to his country), and intimated his desire to make a trial of it. The reply was;—"Send for a man, and I will set him to work; and if you think it will answer, you may then employ him; if not, I will allow you his expences." A man was sent for, and the soil being found proper for this mode of draining, he was employed some length of time; the tenant paying his wages; the landlord, the expences of his journey.

From Thorpe this method of underdraining travelled into Leicestershire; where Mr. PAGET, a superior manager of the highest class of yeomanry, made himself master of the art, taught it to his laborers, practised it on an extensive scale, upon his own estate, and has sent young men, of his instructing, into various districts, as turf-drainers: even *this* neighbourhood has, now, its turf-draining done, by men from that quarter.

How fortunate for rural affairs, when superior talents are assisted by science and self-practice. What may not be expected from professional men of this description.

The outline of the method of forming turf-drains, here, is this: The upper part of
the

the trench is opened, with a common spade, nine to twelve inches wide, at the bottom, and to a depth suitable to the given situation; leaving it with a smooth, even bottom: in the middle of which a narrow channel is sunk with a draining tool *, and cleared with a scoop, to a depth proportioned to the firmness of the substratum, in which it is made; leaving a fair even "shoulder" on either side. On these shoulders, the first spit or sod is laid, with the grassside downward, and, being trodden down, firm and close, the trench is filled up with the excavated mold.

If the subsoil be too tender to bear the turf, or of too loose and crumbly a texture to stand firmly, so as not to "run in," the wide trench is sunk down to the required depth, and shoulders formed with sods, cut square, and set firmly, on each side of the bottom of the trench; leaving a channel, three or four inches wide, between them; and laying the inverted sod upon these artificial shoulders.

The *expence*, in either case, is about a penny a yard; which, being the *whole* expence, is very low.

Nevertheless,

* See NORFOLK, MIN. 2.

Nevertheless, the *duration* of sod drains, if the substrata be sufficiently firm, appears to be much longer than those of wood, and, perhaps, equal, in some situations, to those of stone.

Mr. More showed me some, which had been made upwards of twenty years, and which appeared to be quite perfect, acting, in wet weather, as well, now, as they did the first year*. On cutting through some of these old drains, and examining them carefully, he found the sod had united with the mold of the subsoil, into one firm mass; forming a regular arch; the PIPE, so far from being warped up, or even fouled, was wider than when it was made. Polecats and other vermin burrow in these drains:—this, reason suggests, would, in making their inner chambers, be liable to close the pipe. Moles are, in theory, still more formidable enemies. But reason and theory cannot set aside facts.

Mr. Paget, likewise, having occasion to make some additional drains, in a ground which had been pipe-drained, some ten or
twelve

* I had an opportunity, after a heavy fall of rain, to observe their operation. One of them, in particular, afforded a full and impetuous, yet *clear* stream.

twelve years, found, in cutting across the old drains; that they were in a state of high preservation.

FALLOWING: The prevailing fallow of this district is the **PIN-FALLOW**, for barley (see the article **BARLEY**); the **SUMMER FALLOW** is rarely attempted; and the **TURNEP FALLOW**, as has been intimated, is confined, at present, to the practice of a few individuals.

If fallowing can be dispensed with, in any case, it may be under the management of this district, where only three arable crops are taken, before the land be laid down again to grass. But, even under this management, much of the land is foul and unproductive, through the want of proper tillage.

And it is a fact, which ought not to be concealed, that one of the first managers in the district is averse to the pin-fallow practice. His argument is strong. "See what a piece of seeds (raygrass and the clovers) after a turnep fallow will do. It will require a cow and perhaps five or six sheep, an acre, to keep it down; especially in the spring, when grass is valuable. But look into a piece of ten or twelve acres of turf, after

PINFALLOW, and you won't see, perhaps, more than five or six cows and a few straggling sheep in it: with some parts eaten as bare as a common, and others scarcely touched."

REFERENCES TO MINUTES.

For an instance of practice in *summer fallowing*, see MIN. 18.

For a proposed improvement of the *pin-fallow*, see MIN. 19.

For the probable cause of *high ridges*, see MIN. 21.

For an instance of practice in *surface draining*, 32.

For instance of practice in *underdraining*, see 106.

MANURES

6.

M A N U R E S

AND THEIR

M A N A G E M E N T.

THE SPECIES OF MANURE made use of, here, are DUNG, LIME, and what is called "MARL*,"

DUNG is become, in this neighbourhood, an extravagant species of manure. I have found it nowhere else so highly valued. Half a guinea a load is not an uncommon price. The load, however, is large : that of a waggon, with five horses. Nevertheless, the price is a strong evidence of the strength

L 2

and

* The CORES OF HORNS, crushed in a mill, have been used, in this district; but with what success I have not learnt. As an animal production, there can be little doubt of their efficacy: the only objection to them lies in the difficulty of reducing them.

and spirit of the farmers of this district. The garden grounds of Tamworth may, however, be, in some measure, the cause of this extreme dearneſs.

In the MANAGEMENT OF DUNG, one circumſtance, chiefly, requires to be particularized: the method of *ſpreading* it on the land.

In the ordinary practice of the kingdom, dung is ſet upon the land, in hillocks, and ſpread, afterward, by a man ſtanding on the ground. But, here, the prevailing cuſtom is to ſpread it out of the carriage, as it is brought into the field; by a man or men, ſtanding on the carriage.

For the minutia of this practice, ſee MIN. 12.

For farther obſervations on it, ſee MIN. 18.

LIME is, here, in high eſtimation, among farmers in general; though ſome few individuals object to it.

In the ordinary practice of the diſtrict, a fallow is ſeldom made without being dreſſed with lime; under an idea that it “mellows” the ſoil and makes it “work well,” while in tillage; and “ſweetens,” improves the *quality* of the herbage, when laid down to graſs.

Unfortunately, however, for the district of the station, no calcareous substance has yet been discovered within it, to supply it with lime, in quantity as a manure *: for which purpose it is fetched, into *this* neighbourhood, eighteen or twenty miles,

There are two SORTS OF LIME, in use; the one burnt from a stone of peculiar hardness, the other from more common limestones; the first is of singular strength, as a manure, the latter of a more common quality. The one, I believe, is peculiar to some hillocks in Derbyshire, on the northern skirts of the Charnwood hills; the other is common to that quarter and to the west of Staffordshire; the former is called *Breedon* lime, the latter *Ticknall* or *Walsal* lime, from the names of the places, in or near which they are principally burnt,

The nature of the BREEDON-LIME is a fit subject of enquiry.

A general description of it will appear in MIN. 2. and an experiment made with it, in

L 3

MIN.

* Limestone is found on the banks of the Anker, in the neighbourhood of Tamworth; and by a proper search, might perhaps be found in sufficient quantity to be profitably burnt into lime.

MIN. 100. All that require to be given, in this place, are a description, and the analysis, of the stone.

The prevailing variety, that of which the lime may be said to be made, is of this description: The *color* — of the surfaces formed by the natural seams or fissures, is red, or strong fleshcolor, — of that of old fragments, a lighter fleshcolor, — of freshbroken fragments, a still lighter blush. The *texture* is uniform; breaking with rough surfaces; extremely hard, and *close*, resisting acids in an extraordinary manner; the muriatic acid standing some time on its surface, before it take effect! and, when pounded, it dissolves slowly and *quietly*. Nevertheless, under the hammer, it flies as the St. Vincent stone. See GLOCESTERSHIRE*.

One hundred grains contain only three grains of indissoluble matter, — a red, brick-dustlike powder, with a few rustlike fragments. Nevertheless, the tincture of galls produces no sensible effect on the solution: an
alkaline

* It is a noticeable circumstance, however, that notwithstanding the resemblance between these two fossils, the LIME from one is *white* as snow, from the other (now under notice) the color of *wood ashes*.

alkaline solution throws down a purely white, calcareous matter.

Another specimen of a still higher red—a direct rust color—and which is suspected to be a species of iron stone, proves, under analysis, to be of the same quality as the main rock; except that it contains a greater proportion of indissoluble fragments....

Hence, it is more than probable, the idea, that Breedon lime contains something of a chalybeate quality, is void of foundation: an idea, however, which deters some sensible men from using it.

The MANAGEMENT OF LIME, in this district, is entitled to singular praise. In the common practice of the district, the load heaps are generally *watered*, as they are thrown down from the waggon; and always *turned over*, to complete the falling more effectually. See YORKSHIRE, Art. LIMING.

For an instance of this practice, see MIN. 3.

Another judicious practice, in the management of lime, is equally entitled to notice. If a quantity of lime be fetched, in autumn, or the early part of winter, to be used in the spring, when team labor is more valuable, it is thrown up into a regular rooflike heap

or mound, and *thatcht* as a stack: a small trench being cut round the skirts, to receive rain water, with an outlet to convey it away. By this admirable precaution, the surface of the heap, perhaps to a considerable depth, is prevented from being run to a mortarlike consistence, by the snows and rains of winter; and thereby rendered in a manner useless as manure. See YORKSHIRE, as above.

MARL. The red earth which has been set upon the lands of this district, in great abundance, as "marl,"—is much of it in a manner destitute of calcareous matter; and, of course, cannot, with propriety, be classed among MARLS.

Nevertheless, a red fossil is found, in some parts of the district, which contains a proportion of calcareous matter.

The marl of CROXALL (in part, of a stonelike, or slatey contexture, and of a light red color) is the richest in calcareosity: one hundred grains of it afford *thirty grains* of calcareous matter; and seventy grains of fine, impalpable, redbarklike powder*.

And

* This marl is singularly tenacious of its calcareous matter; dissolving remarkably slowly. One hundred grains,

And a marl of ELFORD (in color and texture various, but resembling those of the CROXALL marl) affords near *twenty grains* :

Yet the marl of BARTON, on the opposite side of the Trent—though somewhat of a similar contexture, but of a darker more dusky color—is in a manner destitute of calcareosity! one hundred grains of it yielding little more than one grain—not *two grains* of calcareous matter. Nevertheless, the pit, from which I took the specimen analyzed, is an immense excavation, out of which many thousand loads have been taken.

And the marls of THIS NEIGHBOURHOOD (which mostly differ in appearance from those described, having generally that of a bloodred clay, interlayered, and sometimes intermingled, with a white gritty substance) are equally poor in calcareosity.

One hundred grains of the marl of STATFOLD (which I believe may be taken as a fair

grains, roughly pounded, was twentyfour hours in dissolving; and another hundred, though pulverized to mere dust, continued to effervesce twelve hours; notwithstanding it was first saturated with water, and afterward shook repeatedly. The Breedon stone, roughly pounded, dissolved in half the time; notwithstanding its extreme hardness.

fair specimen of the red clays of this quarter of the district) afford little more than *two grains* of calcareous matter *. Yet this is said to be “famous marl;” and, from the pits which now appear, has been laid on in great abundance.

I do not mean to intimate, that these clays are altogether destitute of fertilizing properties, on their first application. It is not likely that the large pits which abound, in almost every part of the district, and which must have been formed at a very great expence, should have been dug, without their contents being productive of some evidently, or at least apparently, good effect, on the lands on which they have been spread.

I confess, however, that this is but conjecture; and it may be, that the good effect of the marls, first described, being experienced, the *fashion* was set; and, the distinguishing quality being unknown, or not attended to, marls and clays were indiscriminately used.

The most interesting fact that can be brought home, respecting these clay pits is, that

* Lodged, not in the substance of the clay; but in its natural cracks or fissures.

that they were made, chiefly, by the last generation; and that the present generation are experiencing, or believing that they experience, an evil effect arising from their produce: the fertilizing quality of which (if it ever existed) being now spent, the dead clay remains a clog to the native soil; rendering it tenacious, and difficult to work,

This is at least the opinion of intelligent professional men; and the idea, I believe, is founded in fact. LIME is found to do away this evil effect; and this may account for the spirit of liming, in the present generation.

On the southern banks of the Anker, is found a GREY MARL; resembling, in general appearance, the marl of Norfolk, or rather the fullersearth of Surrey. In contexture, it is loose and friable.

This earth is singularly prodigal of its calcareosity. The acid being dropped on its surface, it flies into bubbles as the Norfolk marl. This circumstance, added to that of a striking improvement which I was shown as being effected by this earth (see MIN. 89.) led me to imagine, that it was of a quality similar to the marls of Norfolk.

But,

But, from the results of two experiments—one of them made with granules formed by the weather, and collected on the site of improvement, the other with a specimen taken from the pit—it appears that one hundred grains of this earth contain no more than *six grains* of calcareous matter! the residuum a creamcolored saponaceous clay, with a small proportion of coarse sand.

Hence, it is evident, that the acid applied superficially, as a TEST, is *no guide whatever* to the intrinsic quality of calcareous substances. The marl of Hall End appears, by the acid of sea salt, used as a TEST, to be of tenfold strength to that of Croxall; but, by the same acid, used as a MENSTRUUM, the latter proves to be of fivetimes the strength of the former: while the Breedon stone, which appears to be noncalcareous to the acid, as a TEST, proves, on ANALYSIS, to be almost purely calcareous*.

REFE-

* This by way of caution, to those who may have occasion to search for calcareous substances. The Breedon stone by merely touching its natural surface, in the usual way, with the acid, might be passed as non-calcareous. It is observable, however, that if the surface be scraped, so as to loosen some of the particles into a powder, it instantly yields to the acid.

REFERENCES TO MINUTES.

For an account of the *Breedon lime*, see
MIN. 2.

For an instance of practice in the *manage-
ment of lime*, 3.

For the method of *spreading dung* out of
carts, 12.

For an *experiment with dung*, on fallow, for
barley, 18.

For observations on *spreading dung* out of
carts, 18.

For an incident of *plowing in turneps*, as a
manure, 34.

For an instance of *dung* being *too dry* to
digest, 45.

For an instance of *watering a dung heap*, 47.

For the practice, and the price, of *mixing
manures*, &c. 50.

For reflections on *growing aquatic manure*,
52.

For another instance of *watering dung*, 57.

For an instance of collecting *compost*, 86.

For an account of the *marl* of North War-
wickshire, 89.

For an instance of growing turneps, on a
soil heap, 95.

For

For *experiment* with *lime*, for barley, 100.

For further observations on *Breedon lime*,
103.

For instances of *lime* used as a *topdressing*,
108.

For the effect of *aquatic manure*, on tur-
neps, see MIN. III.

10.

SEMINATION.

IN THE SEED PROCESS of this district, though there is nothing particularly censurable, there is little to praise. BROADCAST may be said to be the universal mode of SOWING: though, of late years, DRILLING, a process new to this quarter of the kingdom, has been tried, by a few individuals. With respect to PLANTING or SETTING, by hand, I met with only one instance, and that with beans.

In finally ADJUSTING the surface after sowing, the Midland farmers are entitled to commendation. Barley lands are *clotted*,
with

with clotting beetles ; which, on strong land, are perhaps much preferable to a roller : and oat lands are “ *turfed* : ” — that is, the fods which have been torn off the plits by the harrows, and lie on the surface, probably with their grass sides upward, and of course in a state of vegetation, are thrown, by hand, or with forks, into hollows, with the grass side inverted : thus tending to neatness, cleanness, and the relief of the infant crop ; while the expence is inconsiderable *.

REFERENCES TO MINUTES.

For an instance of *mice* hoarding up *seed*, 26.

For an evidence of the propriety of *sowing the whole furrow*, the day it is plowed, 40.

For observations on *sowing by the trees*, 82.

For further observations on the *same* subject, 90.

For opinions on the *change of seed*, 91.

THE

* By observation, in my own practice, eleven acres took ten womens' days works, or about sixpence an acre.

II.

THE MANAGEMENT OF
GROWING CROPS.

THE VEGETATING PROCESS of the MIDLAND DISTRICT, consists, merely, in HANDWEEDING; the use of the HOE being in a manner unknown to farm laborers, and never attempted by their wives or children (see GLOUCESTERSHIRE). Turneps are the only crop which is hoed; and these are generally hoed by gardeners, or by men who make a trade and mystery of it: See the art: TURNEPS.

The ARABLE WEEDS most noxious, in this district, are the following. They are divisible into three classes; agreeably to the states of aration, in which they are, respectively, most conspicuous; as those of

Fallow, Corn, New ley.

FALLOW

Provincial. Linnean. English.

Fat-hen, or wild spinage, — *chenopodium viride*,
redjointed goosefoot.

Dead nettle, or wild hemp, — *galeopsis tetrahit*,
wild hemp.

carduus lanceolatus, — spear thistle.

ferratula arvensis, — common thistle.

carduus palustris, — marsh thistle.

rumex crispus, — curled dock.

Dog fennel, — *anthemis cotula*, — maithe weed,
or stinking camomile.

——, *matricaria chamomilla*, — common corn
camomile.

Sow thistle, — *sonchus oleraceus*, — common
fowthistle.

Hard iron, — *ranunculus arvensis*, — corn crow-
foot.

Laplove, — *convolvulus arvensis*, — corn con-
volvulus.

——, *polygonum convolvulus*, — climbing
buckweed.

Corn mint, — *mentha arvensis*, — corn mint.

carduus crispus, — curled thistle.

Tare, — *ervum hirsutum*, — twoseeded tare.

——, — *tetraspermum*, — fourseeded tare.

Hairough, — *galium aparine*, — cleavers.

Willow

Provincial. Linnean. English.

Willow weed, — *polygonum pennsylvanicum*, —
pale persicaria.

Goose tansey, — *potentilla anserina*, — silver-
weed.

tussilago farfara, — coltsfoot.

Nettles, — *urtica dioica*, — common nettle.

Poppy, — *papaver dubium*, — longsmooth-
headed poppy.

Golds, — *chrysanth. segetum*, — corn marigold.

Cockle, — *agrostemma githago*, — cockle.

Mellilot, — *trifolium mellilotus officinalis*, — mel-
lilot.

Groundfil, — *senecio vulgaris*, — groundfil.

thlaspi bursa past. — shepherds purse.

Beggars needle, — *scandix pecten-veneris*, —
shepherds needle.

Chicken weed, — *alsine media*, — chick weed.

euphrasia odontites, — red eyebright.

thlaspi arvensis, — common mithridate.

scabiosa arvensis *, — corn scabious.

M 2

CLOVER

* This inveterate enemy of arable crops is not common to the district. SUTTON AMBION, the bloody scene on which the brunt of the battle of BOSWORTH FIELD was probably fought, is the only spot on which I have found it; and, there, it is singularly prevalent. The wheat crop, in 1785, was in a manner destroyed by this weed, encouraged in its mischiefs by the dryness of the season.

CLOVER WEEDS.

Linnean.

English.

flago germanica,—common cudweed.*cerastium vulgatum*,—common mouse-ear.*geranium dissectum*,—jagged cranesbill.*carduus lanceolatus*,—spear thistle.*rumex crispus*,—curled dock.*sonchus oleraceus*,—common sowthistle.*ferratula arvensis* *,—common thistle.

REFERENCES TO MINUTES.

For an instance of the mischievousness of *black twitch*, see MIN. 59.

For observations on the *couchy softgrass*, 73:

For an instance of the shameful predominancy of *thistles* and *docks*, 76.

For an instance of *weeding* a wheat *stubble*, 77.

HARVEST

* I met with an instance, in this district, and in the practice of the first manager in it, of the COMMON CORN THISTLE being *drawn* out of new leys, with a docking iron, such as docks are usually drawn with; and although this operation is not found to be a *radical* cure, the first drawing, yet it weakens the roots very much; and, by continuing the practice a few years, is said to extirpate the plants. This I mention by way of hint to those who wish to ascertain, on their own particular soils and situations, the most eligible way of overcoming this most formidable enemy.

I 2.

HARVEST MANAGEMENT.

THE CORN HARVEST of this district, (although it cannot be called, emphatically, a *corn country*) is not got in without some foreign assistance. The wheat is much of it cut by itinerants, who are termed “peakrils” and “low country men:” namely, men, and some women, from the Peak of Derbyshire, and the Morelands of Staffordshire.

The ordinary HARVEST LABORERS, of the district, are not hired for the *harvest month*, as in Surrey, &c., nor for the *harvest*, be it short or long, as in Norfolk; but work by the day, as at other seasons of the year; and for the same *wages*; a shilling a day; but with the addition of full *board*, so long as the harvest lasts: and, in addition to this, each laborer who has been constantly employed through the summer, has a right, by custom,

to the *carriage of a load of coals*, in autumn, It is also a pretty common custom, for farmers to let their constant laborers have their bread corn, somewhat below the market price; more especially when corn is dear.

The HOURS OF WORK, too, like the wages, are the same, in harvest, as in less busy seasons; and the same slow pace is too generally observed. No coming at four in the morning; no trotting with empty waggons; nor any personal exertion, whatever, betokening harvest; saying such as are stimulated with ale as strong as brandy.

The method of HARVESTING SHEAF CORN, whether *wheat* or *oats*, is, in this district, above mediocrity. In part, it is new to me: REAPING being generally done, by the "THREAVE:" seldom, by the *acre*.

A threave is twentyfour sheaves; each sheaf measuring a yard round, in the banding place; the string crossing the band in measuring. A better sized sheaf, for seasons and crops in general, could not, *perhaps*, well be fixed upon (see GLOCESTERSHIRE, Sect. WHEAT).

The only difficulty, in reaping by the threave, lies in not being able to get the
sheaves

sheaves made up to the standard. The deviation, however, is on the right side: whereas, in reaping by the acre, it will always be on the wrong. For, in that case, it is the interest of the reapers to make large sheaves; having thereby fewer bands and less binding. On the contrary, in reaping by the threave, it is their interest to make small sheaves.

Another conveniency arises from reaping by the threave: any number of hands may be scattered over a piece of corn, as circumstances may require, without the extraordinary trouble of measuring the land, in this case. Each man sticks to his "throo," whether it consists of one or more lands, and sets up his own sheaves, in one row of shucks, of twelve sheaves each: so that the trouble of ascertaining the number of threaves is inconsiderable.

The *price*, for *wheat*, is fourpence a threave, with beer; provided the crop be tolerably good: if very thin, fivepence or sixpence is sometimes given: or such thin wheat is sometimes reaped, by the acre; at about six or seven shillings, an acre. For *oats*, threepence is the common price.

In CARRYING sheaf corn, the butts are laid outward, all round, as in Surrey and Norfolk; forming the load, not into a long square, but into a figure between that and an oval; binding it across, in three or four places.

The method of HARVESTING LOOSE CORN, whether *oats* or *barley*, is reduced, here, to the lowest degree of simplicity.

In Yorkshire, barley and oats are mown, *inward*, against the standing corn, and harvested in sheaf.

In Surrey, and in some parts of Kent, they are mown, *outward*, with a *cradle*, laying them so straight and neatly, they might be bound after the sith; but are harvested loose. In cocking them, the South-country farmers make use of *corn forks*; laying the ears all one way; preserving the same neatness and regularity, even to the stack; the outside course of which is laid with unbroken pitches, with the butts outward, having thereby a security nearly equal to that of sheaf corn.

In Norfolk, they are mown, *outward*, with *bows*, fixed to the heels of the sithes; which, however, do not lay them so neatly as cradles; but still the heads, if the crop stand
anyway

anyway fair, lie one way, and the tails the other. There, too, the *corn fork* is used.

Here, they are mown, *outward*, with *naked sithes!* and cocked, or rather rolled into rough bundles, with common *hay forks!* and this, generally, two or three days before they be carried!! a crop of clover, a crop of barley, a crop of peas, a crop of oats, and a crop of beans and vetches, being harvested very much in the same manner.

Mowing barley and oats, with naked sithes, and pulling them about, with hay forks, have, to a stranger, a slovenly and wasteful appearance. But with respect to cocking loose corn, before the day of carrying, something, perhaps, may be offered in its favor.

It is true, that, in other districts, it is considered as very bad management, to leave even a few cocks remaining, uncarried, only one night; under an idea that, if loose corn once get wet, in cocks, it is difficult to get it dry again, without a great waste of labor and corn. Nevertheless, experience shows, that even a very heavy shower has not that evil effect, in the practice of this country.

An incident, which fell within my own experience, convinced me of the fact: I had,
through

through neglect, a few oats, in cock left out all night. Next day, much rain fell; but the succeeding day proving fine, they were got into very good order, again, in this manner. The tops were first dried, by raising them up, light and porous, with the tines of a fork; so as to let the sun and air into them; and, when the tops were dry, the bundles were turned over, to air the bottoms.

In this manner, and without greater trouble, corn cocks are generally dried; though sometimes it will happen that they require to be pulled to pieces: in which case, there is, of course, considerable waste.

The Midland farmers have one very good plea, for harvesting *oats* in this manner. For, by cocking them a few days before carrying, the labor and waste of turning is saved: besides, by being cocked, while a portion of the sap remains in them, they are not so liable to be shed in cocking, as when they are disturbed in a dry parched state.

This practice, probably, took its rise in open common fields. Formerly, much of the district lay in that state; the soil being raised into high rooflike ridges. The furrows and skirts of the lands lay, of course, proportionably

portionably low; and the corn being thereby frequently deprived of the benefit of the wind, at least, it was found, by experience, most eligible to gather the corn into heaps, and place them upon the tops of the ridges. And this is the present practice of "field farmers." In a few days after cutting, the whole crop may be seen standing in pitch-cocks, placed in close order, like strings of beads stretched along the ridges.

But notwithstanding this practice may be eligible, where corn is mown with the naked scythe, and rolled up into rough porous bundles, it does not follow that it should be universally adopted. Were a Kentishman to leave his unruffled close piles exposed, even to one heavy shower, he would find some difficulty in getting them thoroughly dry, again, without spreading them abroad.

An evil attendant, of the Midland method of harvesting loose corn, is the increase of bulk, which corn harvested in this way acquires, comparatively with the same quantity of corn, harvested in the Kentish manner. More barnroom is of course wanted, and a greater number of loads are to be carried. Four loads, an acre, is no uncommon crop :

five

five loads are talked of, and are sometimes carried. But the method of *loading*, and that of *barning*, both of them tend to increase this evil.

The method of CARRYING loose corn, here, differs from that of other districts, in having only *one* loader to *two* pitchers; and in loading, not with the *arms*, but with a *fork*; the loader standing in the centre of the load, and piling the corn loose and light around him. Thus the entire process tends to encrease the number of loads.

And the method of HOUSING is not calculated to do away the inconveniency. I never met with an instance, in this district, of a *horse*, or any other *animal*, being used on a mow.

RICKING, however, remedies the evil; and in this district, where barnroom is more contracted than in some other, loose corn is pretty generally put into ricks.

In the *method of ricking loose corn*, nothing is noticeable; excepting the last finish. To endeavour to secure the stems from the pilaging of sparrows, and other small birds, they are, generally, either "tucked" or "pared:" that is, either the loose ears, ex-
posed

posed on the outside, as many unavoidably are, in the method of harvesting above described, are doubled back, and thrust into the stem; or the entire stem is shaved with a sith, laid longway in the handle, or some other similar instrument: in a few instances, I have seen the stems thatched, as the roofs.

On *ricking sheaf corn*, a few particulars may be mentioned. Though built on a square frame, the stem, provincially the "wall," is not carried up square, as in Surrey and Norfolk; nor round, as in Gloucestershire; but in a form between the two; the corners of ricks being rounded off, as those of loads.

Large ricks being fashionable, and it being customary, in carrying up the stems, to *bind* with the ears, instead of the butts of the sheaves, they are of course liable to *slip*. This has taught the Midland rickers an admirable expedient,—when any symptom of slipping, in carrying up the stem, is perceived,—to prevent the mischief; namely, that of laying *long green boughs* across the part affected: an excellent thought.

In setting on the *roof* of a sheaf-corn rick, the Midland rickers are above par: laying
the

the last course of the stem so as to project a few inches, and form a kind of cornice for the eaves of the thatch to rest upon, and to carry the drip clear of the stem. The middle is then filled in, full, and round; so that the butts of the outside sheaves hang downward.

This, though not peculiar to the district, is a rule which ought always to be observed, in forming a roof: for, in this case, if rain should happen to penetrate through the thatch, there is little fear of its doing, even the roof of the rick, much injury: every straw becoming a conductor, to lead it to the surface.

Another commendable practice, in forming the roof of a sheaf corn rick, and which is new to me, is that of carrying it up without a *pitching hole*. A man sticks his heels into the roof, and stands with great ease and safety. This might well be copied by other districts: pitching holes are dangerous; unless care be used in making them up, and in thatching them, securely. For, if water enter, in this part, it finds its way directly into the center of the rick.

The method of *securing corn ricks*, in a catching season, previously to their being
thatched,

thatched, is likewise entitled to notice. It is effected with "battins"—small trusses of straw—which are afterward used as thatch. A row being laid close, and pegged *securely* along the eaves, with their butts downward, others are laid (firmly but without pegs), as tiles or slates are laid on a roof, with their heads downward; spreading the ears (without untying the bands) so as to prevent the rain water from sinking through, between those which lie below: continuing, thus, till the ridge be reached.

Having plenty of these battins, in corn harvest, ready at hand, to cover a rick with, in catching weather, is deemed a great convenience. A rick of eighteen or twenty loads, may be secured, in a few hours: or, with plenty of hands, in half an hour.

The method of *thatching ricks* is also peculiar, in this district, and requires to be mentioned. Instead of thrusting the ears of the straw into the roof, and spreading the butts, outwardly, as a security; the straw, in thatching, is laid on, as the battins, with the ears downward, and of course outward (excepting the first course at the eaves), and is secured
in

in its place, by pegs and hay ropes.*; passing horizontally from end to end of the roof; at the distance of twelve or fourteen inches from each other †.

REFERENCES TO MINUTES.

For observations on *shucking* sheaf corn, 10.

For remarks on *reaping* by the threave, 75.

For reflections on *gleaving*, 80.

FARM-

* Sometimes thatch is bound with *ozier twigs*, which are much more lasting than hay bands (that are only *annuals*), in a simple ingenious manner. The small end is formed into an eye, like that of a withy, and the other end run into the roof, as a peg, thro' the eye of the preceding twig.

† An inconveniency attends this method of thatching. A rick cannot be thatched, with propriety, until the roof has done settling. For, if it settle, after it is thatched, the straw is raised into puckers between the bands, and the water, of course, is let in.

13.

FARMYARD MANAGEMENT.

ON THE BARN MANAGEMENT of this district, little requires to be said. The southern method of THRASHING, and the SAIL FAN, are in universal practice. I have, however, met with some two or three MACHINE FANS; and these, in the practice of the very first managers of the district: nevertheless, even the superior class of farmers, in general, still remain in the old dusty path.

CHAF CUTTING, as it is pretty generally termed, but here provincially "*strawcutting*," is in great use. Not, however, the ordinary practice of cutting *hay* and *straw* into what is, in most places, called *chaf* or *cutchaf*, but, here, more properly "CUTMEAT;" but by reducing *oats*, *in straw*, into this species of fodder; which is given, not to horses only, but to cattle; especially fattening cattle. It

is thought to give, not only fatness, but a fineness of skin, to all sorts of stock.

The CHAFBOX made use of, here, is of a peculiar construction. It unites, in some measure, the old single-hand machine, and the modern one, with a wheel of blades. This, in use here, has a long upright knife; but feeds itself: by which means the cutter has both hands at liberty, for the knife. It is made at or near Birmingham, and is sold at most of the market towns of the district. It is, however, somewhat complex; and fitter for a man who makes a business of "straw cutting," than for a farmer's servant.

The *price* of cutting is three farthings a heaped bushel; but it is cut extraordinarily fine.

The STRAWYARD MANAGEMENT, here, falls between the northern and the southern practices: *cows* are pretty generally *housed*, in the sheds that have been described: but *young stock* still remain in *open yards*; and some are kept out, in the *field*, a principal part of winter.

MARKETS.

14.

M A R K E T S.

THE PRINCIPAL MARKETS of the immediate DISTRICT of the STATION, are *Tamworth, Lichfield, Burton* (on Trent), *Ashby* (De la Zouch), *Atherston, Bosworth*.

The first three are good markets; the last is almost in disuse; though situated in the center of a fertile district; a charming plot of country. But there is no manufactory, no navigation, nor any great road, within several miles of it; its own road very bad; with Ashby and Atherston on either side of it; and LEICESTER within reach.

But the *metropolitan* market of the district is BIRMINGHAM, with the manufacturing towns of its neighbourhood. The produce of *this* district, whether of livestock or grain, may be said to center, eventually, in Birmingham; which bears a similar relation

to the market towns of the country round it, as London does to those in its neighbourhood*.

The more southern parts of LEICESTERSHIRE and WARWICKSHIRE, NORTHAMPTONSHIRE, &c. are influenced by the grand vortex. The fat cattle and sheep of these districts go chiefly to SMITHFIELD.

It may be right, in this place, to notice a dispute, which arose, during my residence in the district, between the townspeople of Tamworth and the hucksters of Birmingham: the dispute arising to a degree of riot: the townspeople driving the hucksters out of the market.

This is an interesting subject. Markets are, or ought to be, adapted to the mutual benefit of the producers, and the consumers, at large; but more particularly to those of the given town, and its neighbourhood. Mere market towns have no hucksters to
supply

* Lately, a weekly market has been established at ROTHERHAM, in Yorkshire, to which fat stock is driven, from the northern parts of LEICESTERSHIRE, &c. The buyers, at this market, are the butchers, not of the manufacturing towns of Yorkshire only, but of Lancashire.

supply them. They depend entirely upon the marketday, for their supply: and if, in times of scarcity, dealers, from large towns, repair to a country market, they may, in a few minutes, clear the market; and leave the townspeople destitute of a week's provisions.

On the other hand, if dealers be wholly precluded, even from buying up the surplus of a country market, the market itself, and of course the townspeople, eventually, will be injured. The producer will, in prudence, endeavour to find out a market, where he can sell his produce, *on a certainty*; without running the risque of having it to bring home, or of selling it, at an under price, to the *monopolizers* of the town. The market of course becomes badly served, and the ware, in consequence, inferior and dear.

The markets of Lichfield and Walsal (with many others in the kingdom) are, therefore, wisely regulated. They *open*, at *eleven o'clock*; but no HUCKSTER is permitted to buy, until *twelve*: so that the TOWNSPEOPLE have an hour to supply their wants. By this judicious regulation, the markets are eventually served; and this, without injuring the town, in the

first instance, by rendering its inhabitants liable to an uncertain supply.

For remarks on Birmingham cattle market, see MARKETS for FAT CATTLE, in this Volume.

REFERENCES TO MINUTES.

For a description of Belton fair, 1.

For a description of Fazeley fair, 13.

For a description of Tamworth fair, 15.

For remarks on the delivery of corn, 31.

For a description of Ashby stallion show, 37.

15.

W H E A T.

I. THE SPECIES prevalent, here, is the "RED LAMMAS;" the ordinary red wheat of the kingdom.

Of late years, the "ESSEX DUN,"—similar to the *Kentish white cosh* of NORFOLK, and the *Hertfordshire brown* of YORKSHIRE,—has been making its way into this district.

Those

Those who have given it a fair trial, like it, on account of its giving a great produce : but the millers are not yet reconciled to it ; though they give no sufficient reason for their dislike. But so it was in Norfolk, on its first introduction, there : see NORFOLK, Sect. WHEAT.

Formerly, CONE WHEAT was grown, in this district ; but it is, at present, out of use.

SPRING WHEAT (*triticum æstivum*) is here cultivated, and with singular success ; owing principally to the *time of sowing* : the wane of April !

This proves, that it is a species, widely distinct, in its nature, from the *winter* wheats.

In the practice of a superior manager * it was discovered, that, by sowing early, as the beginning of March, the grain was liable to be shrivelled, and the straw to be blighted ; while that sown, late, as the middle or latter end of April, or even the beginning of May, produced clean plump corn ! effects directly opposite to those of winter wheat.

However, it appears to be at present (1789) growing into disrepute : the quality of the grain is found to be less valuable, than that

N 4 of

* Mr. PAGET of Ibsstock.

of Lammas wheat. Nevertheless, in some situations, and under some circumstances, I am clearly of opinion, it may be highly eligible: more especially in a *turnep* country. It appears to me to be well entitled to the attention of the farmers of Norfolk.

II. SUCCESSION. In the ordinary practice of the country, wheat succeeds *oats*! Perhaps, nine tenths of the wheat, grown in this district, is what is termed “brush wheat:” is sown, on *oat stubble*, provincially “oat brush;” with a small proportion of “*barley brush*.” A fact which a stranger, riding through the district, and seeing the fine crops of wheat which it produces, would not readily credit.

I met with a few instances of wheat being sown, on *turf*, of six or seven years lying; and with several, on *clover ley*, once plowed: also with some, of wheat after *turneps* *. But the best crops which this, or almost any other district produces, are sown after *summer fallow*. The practice, however, is confined principally to one leading man; — Mr. PRINCEP of Croxall.

Never-

* Westward of the Tame—the soil a light sandy loam,--- it is the prevailing practice to sow wheat after turneps, fed off with sheep in autumn.

Nevertheless, viewing the district generally, the universal matrix of wheat may be said to be OAT STUBBLE; of which, only, I shall speak.

III. TILLAGE. The soil process varies, in the practice of different individuals. Some plow, *once*, lengthway, as the old turf was plowed for oats. Others plow, *once*, across, cutting the plits of the old turf at right angle; afterwards, gathering a bout, that is, laying two plits back to back, in each interfurrow; to drain more effectually the wide ridges, in which the lands of the district are chiefly laid. Others break the ground (provincially “work their brushes”—) by *two* plowings; the first across, the last lengthway: and some few by *three* plowings; lengthway, across, lengthway.

The first is a filthy-looking, slovenly practice; though a common one. The second, with the same labor, is infinitely preferable; and, in a wet autumn, may be more eligible, than breaking the ground, by a greater number of plowings. When the season and other circumstances will permit, the last is, no doubt, to be preferred.

IV. MANURE. The manure process likewise varies. If the turf has been recently manured, previous to the oat crop, or the soil otherwise in good heart, the wheat is frequently sown, without manure. When manure is used, DUNG, provincially "muck," is the prevailing species. If the ground be only once plowed, the muck is generally laid upon the stubble, and plowed under, with the one plowing. If the ground be broken, it is common to lay it on the cross plowing, and plow it under with the seed plowing.

One circumstance, in the manure process for wheat, requires to be noticed. It is common, though not universal, to set the muck upon the land, in a raw long strawy state; carrying it, immediately, from the yard to the field, without having been previously turned up and digested. This is probably a dreg of the common field husbandry; in which the yard muck was, perhaps judiciously, left unmoved; with the intent that its strawiness might prevent the too fallow mold of land, summerfallowed every third year, from being run together, by heavy rains (see MIN. 21). But, in pinfallowed inclosures, the twitch alone is too frequently
more

more than adequate to this intention ; and to throw additional incumbrances in the way of the harrow is certainly reprehensible.

V. SEMINATION. The TIME OF SOWING is October. Little is sown, before new Michaelmas : and, if the season be favorable, little after the close of October.

PREPARING the SEED is not universally attended to. Much seed is sown, without preparation ; which, I understand, is of modern date, as a practice, in this district. The preparation, in the best esteem, is the common one of swimming, in brine, and candy-ing, with lime.

The MODE OF SOWING, broadcast, and generally above furrow ; the soil being seldom got fine enough, to plow in the seed.

The QUANTITY OF SEED, pretty universally, three bushels, an acre ; without much regard to the time of sowing.

VI. The GROWING CROP—is generally HANDWEEDED : NO HOING of wheat, in this district. For opinions on *eating* wheat, with sheep, and on *barrowing* wheat, in the spring, see MIN. 113.

VII. The HARVESTING of wheat has been described. For observations on GLEAN-

ING, and REAPING BY WOMEN, see MIN. 80 and on SHUCKING, 10. and 81.

VIII. YARD MANAGEMENT. The long straw is bound in small trusses,—provincially “battins;” with the heads and the butts separate; for thatch; and for litter for inns, &c.

IX. MARKETS. The MILLERS of the surrounding country; who grind it for Birmingham, and the other manufacturing towns.

X. The PRODUCE is very high. The par produce is full THREE QUARTERS, an acre, nine-gallon measure. Four and even five quarters, an acre, are produced: especially of the *Essex dun* variety: and particularly in the practice of Mr. PRINCEP; who has grown FIVE QUARTERS, *all round*, on his extensive farm; and, in the year 1784, grew, *on fifty acres together*, FORTYFIVE BUSHELS an acre!

REFERENCES TO MINUTES.

For an instance of sowing oats, over a *thin* crop of wheat, see MIN. 5.

For experiments and observations, on the effect of *berbery* on wheat, 7.

For

- For an incident on *smut*, 8.
 For observations on *skucking* wheat, 10.
 For an incident on *sowing* the whole furrow of a *clover ley*, 40.
 For remarks on the nature of *blights*, 65.
 For an instance of *blight*, 74.
 For remarks on *reaping* by the threave, 75.
 For an instance of *weeding* wheat *stubble*, 77.
 For remarks on *gleaning*, 80.

16.

B A R L E Y.

THE SPECIES OF BARLEY in cultivation, here, are

HORDEUM *distichon*; LONGEARED BARLEY.

HORDEUM *zeocriton*; SPRAT BARLEY.

The latter is the old stock of the country; the former being of late introduction; of not more, I understand, than about fifty years standing. The sprat is deemed more hardy, and requires to be sown, more early; the
 long-

longear to be the better yielder. The sprat is thought (by maltsters) to make the best keeping beer; the longear to be “freer”—to operate quicker—both in the malthouse and the cellar.

The longear is not unfrequently procured from Kent, under the name of THANET BARLEY; which, at present, is in the first estimation.

SUCCESSION. In the ordinary practice of the district, barley succeeds WHEAT. Where TURNEPS are grown, it succeeds that crop.

It is observable, however, that on the strong lands of *this* district, the crop, after turneps, is less productive, and much less *certain*, than it is after wheat*. But the same circumstance is observed in Norfolk, where the soil is much lighter: See NORFOLK, SECTION BARLEY.

Barley is likewise sown, and of late years not unfrequently, on TURF; and with good success †.

TIL-

* On the lighter lands, on the skirts of the Forest, it is said to answer perfectly well after turneps. See MIN. 92.

† One superior manager has sown barley on turf, for more than twenty years; getting extraordinary crops from this practice.

TILLAGE. AFTER WHEAT, the soil is winter-fallowed, provincially “pin-fallowed*,” by three plowings: the first, lengthway, in November, &c.; the second, across, in March, &c.; the last, the seed plowing, lengthway. Between the two last plowings, the soil is harrowed, and the twitch shook out with forks, and left, loose and light, on the surface, to die; being seldom, in common practice at least, either burnt or carried off. If the weather prove dry and parching, this may be an easy way of *checking* the foulness.

AFTER TURNEPS, the soil has generally three plowings: for the turneps being mostly folded off with sheep, the soil, naturally of a close texture, is thought to receive a degree of compactness, ill suited to the fibrils of this delicate plant, until it be broken, and rendered porous, by tillage.

SOWING. The TIME OF SOWING, if the *weather* will permit, is the two last weeks in April, and the first in May: the Midland farmers going entirely by the ALMANACK,—if they can; not by the SEASON.

The

* PIN FALLOW. The origin of this term I have not learnt: it appears to be synonymous with WINTER FALLOW, or BARLEY FALLOW.

The QUANTITY OF SEED—two bushels and a half, to three bushels, an acre; and, in the practice of some men, so much as four bushels!

The METHOD OF SOWING is broadcast; mostly above; but sometimes, if the land be got very fine, the seed is plowed under.

ADJUSTING. If the harrow leave any clods, unreduced, on the surface, they are broken with the clotting beetle, by women, &c.; and if any twitch be pulled up, in harrowing, it is shook out loose, with forks, and left on the surface, to wither. Both of them eligible operations—where they are wanted.

The WEEDING,

The HARVESTING, and

The YARD MANAGEMENT of barley appear, aforegoing, under these general heads.

MARKETS. The BURTON breweries; and the MANUFACTURING TOWNS; where incredible quantities of malt are consumed.

PRODUCE—extraordinarily large. *Seven quarters*, an acre, is no unusual crop: *eight quarters* have been grown. One superior manager frequently grows six or seven quarters, round. *Four to four and a half quarters*, an acre, may be taken as the par produce.

REFE-

REFERENCES TO MINUTES.

For an experiment with barley, on *clover ley*, see MIN. 9.

For an incident on *plowing in seed* barley, 41.

For instances of barley badly *harvested*, 83.

For observations on the *time of sowing*, 90.

For instances of barley miscarrying, *after turneps*, 92.

For instance of frost *ripening* barley, 93.

For remarks on my own practice, 102.

For instances of the bad quality of barley, see MIN. 117.

For remarks on the precariousness of the barley crop, 117.

17.

O A T S.

THE SPECIES OF OAT, at present in esteem, is the "DUTCH OAT;" the same, or similar to the *Friezland oat* of Yorkshire. The POLAND OAT, which was the favorite, is going out of repute; on account of the thickness of its skin.

The SUCCESSION, uniformly, TURF,—
OATS.

The TILLAGE,—one plowing in February, March, or April.

SOWING. The TIME OF SOWING is the latter end of March, and beginning of April. The QUANTITY OF SEED—four to five bushels. The same observation, with respect to the seed of oats, has been made, here, as in Yorkshire; the produce being in proportion to the quantity of seed: hence, six or seven bushels are sown, in the practice of some individuals. Sow, broadcast; COVER, with the harrow; ADJUST, by turling. See general head SEMINATION.

FOR WEEDING,--HARVESTING, and YARD MANAGEMENT, see the general heads.

MARKETS. Notwithstanding the quantity of oats grown in the district, a principal part of them is expended on FARM HORSES! others go to the INNS of the district, and the surrounding country.

PRODUCE. Sward being the matrix, no wonder the produce is abundant. Six quarters, an acre, may be considered as the par produce of oats on turf, in the Midland District.

For observations on the *time of sowing*, see MIN. 82.

For remarks on *harvesting*, 82.

PULSE.

18.

P U L S E.

IN THE INCLOSURES of the Midland District, little of this class of grain is cultivated.

BEANS and DILLS (a species of large vetch; the Yorkshire *fitches*—See YORKSHIRE) are the prevailing crop.

The only circumstance of their culture, which is entitled to notice, belongs to the SEED PROCESS.

In every other district, in which I have hitherto observed, BEANS are either sown on the whole plot, and *harrowed in*, or are set or *planted*, by hand: but, here, the prevailing practice; at present, is to *sow them on stubble*—generally wheat stubble—and to *plow them under!* with a thin *flat* furrow: afterwards sowing the DILLS, and harrowing them in.

If beans, alone, be the crop, the surface, in the practice of some, is nevertheless har-

rowed, as fine as if they had been sown abovefurrow; in others, the plits are left whole.

If the ground be broken, as a pin-fallow, the beans and dills are, sometimes, both of them sown *underfurrow*, and plowed in together.

It is observable that beans, plowed under whole furrows, rise principally in the seams; but some of them through the furrows or plits. They have even been observed to force their way through a footpath, though trodden as firm as a plaster floor!

The disadvantage of plowing beans under whole furrows arises, principally, it is understood, in their lying hollow; thereby spending their first and main effort, beneath the furrows; never, in this case, reaching the surface. Hence the use of turning the furrows as *flat* as possible. When the season will permit, *rolling* would, under this idea, be of service.

For HARVESTING beans, see the general article, HARVESTING LOOSE CORN.

POTATOES.

19.

P O T A T O E S.

THE SPECIES, or rather VARIETIES of potatoes have, of late years, undergone a total change, in this district.

The old varieties, formerly in cultivation, dwindling in produce, and being, at length, in a manner destroyed, by the disease of CURLED TOP, two new varieties were introduced, under the names of GOLDFINDERS and GOLDENDABS;—the former, a yellow kidneylike root (but with a scurfy rind, not unlike that of the old russet potatoe); the latter, of a similar color, but of a different form, being somewhat bellshaped. The consequence has been, the disease vanished with the old sorts; and is now (1786) in a manner forgot;—in *this* neighbourhood, where no other sort is in ordinary cultivation.

In 1789, I met with a similar instance, in *Leicestershire*; where the “old red sort” was

entirely worn out, with the disease; while a white sort, now in cultivation, was “*never known to curl.*”

In *Rutlandshire*, I had ocular evidence of the same nature. Observing, in a large piece of potatoes, two stripes which were almost wholly curled, while the rest of the piece appeared to be free from the disease, I enquired into the cause of disparity; and received in answer, without hesitation, that the healthy plants were “*manleys,*” and the diseased stripes “*rednosed kidneys;*” which, heretofore, was the prevailing species; but being no longer to be cultivated, with any degree of success, a *new sort* was, some years ago, introduced, under the name of the “*manley,*” which still remains free from the disease.

These are evidences, and strong ones, that the disease of *CURLED TOP* is *incident to varieties*; and the circumstance of the *old sorts*, which have been in cultivation from the first introduction of potatoes into the island, being now almost wholly cut off by it,—renders it *probable*, that the disease is incident to *declining varieties* of *POTATOES*, as the *canker* is to declining varieties of

FRUITS. See GLOCESTERSHIRE ; Sect. ORCHARDS. Also YORKSHIRE ; Sect. POTATOES.

The CULTIVATION of potatoes, in this district, though it does not require to be given in detail, throughout, is entitled, in several particulars, to notice.

SUCCESSION. Contrary to the practices of most other districts, potatoes, here, succeed TURF : are planted, almost invariably, on GRASSLAND *.

SOIL PROCESS. The PLOW is seldom used, here, in the cultivation of the potatoe crop. The soil is broken up with the SPADE : sometimes, in two shallow spits, throwing the sward and the dung, if any be used, to the bottom ; covering them, in the gardener's manner, with the under spit †.

O 4

But,

* Potatoes are sometimes grown, two years together, on the same land ; and, in this case, *it is said* to have been found, that dibbling in the sets, on the stale surface, as left, on taking up the first crop, or only levelled with the harrow, without a previous plowing or digging, is the most eligible method of putting in the second crop ; this, however, by way of hint.

† In one instance, I observed the surface broken, first, with the plow ; the plits being dug under ; afterward, with the spade.

But, generally, in one full spit; merely inverting the sward; fitting the spits to each other; leaving a smooth even surface of clear free soil.

● **PLANTING.** On this surface, the plants are *dibbled*, very thick, about the middle of April.

The care of the **GROWING CROP** consists in **HONG**, once, twice, or as often as circumstances may require; the crop, throughout, being mostly, though not always, managed in a gardenly manner.

The crop is **TAKEN UP**, with **FORKS**, in the gardener's method, about the **MIDDLE OF OCTOBER**: the **PRICE** of taking up is according to the crop; generally, I believe, from 1d. to 2d. a bushel.

PRESERVING. The method of laying up potatoes, here, is, universally, that of "camping" them: a method which requires to be described.

"**CAMPS**" are shallow pits, filled and ridged up as a roof, with potatoes; which are covered with the excavated mold of the pit.

This is a happy mean between burying them in *deep pits*, and laying them upon the *surface*. See **YORKSHIRE**.

Camps

Camps are of various sizes ; being too frequently made, in a longsquare form, like a corn rick ; and of a size proportioned to the quantity to be laid up. It has, however, been found, by experience, that, when the quantity is large, they are liable to heat and spoil : much damage having sometimes been sustained by this imprudence.

Experienced campers hold, that a camp should not be more than three feet wide, four feet is, perhaps, as *wide* as it can be made with propriety ; proportioning the *length* to the quantity : or, if this be very large, forming a range of short ones, by the side of each other.

The usual *depth* is a foot.

The bottom of the trench being bedded with dry straw, the potatoes are deposited ; ridging them up, as in measuring them with a bushel. On each side of the roof, long wheat straw is laid, neatly and evenly, as thatch ; and, over this, the mold, raised out of the trench, is evenly spread : making the surface firm and smooth, with the back of the spade. A coat of coal ashes is sometimes spread over the mold ; as a still better guard against frost.

It

It is neediefs to obferve, that a camp fhould have a dry fituation ; or that the roots ought to be depofited, in as dry a ftate as poffible.

— Thefe camps are *tapped* at the end ; fome battins, or a quantity of loofe ftraw, being thruft clofe into the opened end, as a *bung* or fafeguard.

— **MARKETS and EXPENDITURE.** Birmingham, the other manufacturing towns, and the collieries, are constant markets for this valuable crop. And befide what go to market, great quantities are expended, in a plentiful year, on the fattening of SWINE ; and fome few have been given to CATTLE.

The PRICE, in a plentiful year, is very low ; feldom more than a fhilling a bufhel : in 1785, they were fold, at the time of taking up, at tenpence : in December, they were fold at a fhilling ; and warranted to weigh 80!b. a bufhel. How cheap, as an article of human food !

PRODUCE. Extraordinary large. By information, that I have no reafon to doubt, and in two or three different instances, fix hundred bufhels, an acre, have been produced ! feven ftrikes, each “ rood ” (of eight
yards

yards square) has, not unfrequently, been grown. Four to five strikes, a rood, or three to four hundred bushels, an acre, is reckoned a medial crop.

For the practice of planting the nooks of corn fields, see MIN. 44.

For an instance of the master and his men going halves, in a potatoe crop, 63.

20.

T U R N E P S.

THE TURNIP CROP, though cultivated in a good manner, by a few superior managers, does not enter into the ordinary practice of *this* district. At present, not one acre in a hundred, taking the district throughout, is subjected to the turnep culture. I have rode through a succession of townships, without seeing an acre of turneps; and, of those that are sown, few are cultivated in a husbandly manner,

Never-

Nevertheless, there are, here and there, on *this* side of the Tame, a patch of turneps to be seen, set out and cleaned in a husband-like style.

West of the Tame, where the soil is light, and the subsoil absorbent, the turnep crop forms the basis of the present husbandry: and this notwithstanding the proper management of the crop may be said to be new, to this quarter of the kingdom. The hoing of turneps has not been established, as a practice in *husbandry*, more, perhaps, than twenty years. To the MARQUIS TOWNSHEND, who sent hoers out of Norfolk, the country, I understand, is indebted for its establishment.

There may be two reasons, why the turnep culture does not become prevalent, in this district.

Grass can be had at will; the whole district being prone to it; while the soil and the subsoil, except in some particular situations, are, *perhaps*, ineligible for this crop. One strong evidence, at least, may be produced in corroboration of this idea. One of the largest farmers in the district grows no turneps; and gives this as a reason for his conduct.

The

The first year, after his father gave up the management of his farm to him,—some twelve or fifteen years ago,—he grew a piece of turneps; the first the farm produced. The crop turned out pretty good; and he began, agreeably to the common practice of the country, to fold them off with sheep. But the piece lying flat, and the weather proving wet, his sheep did “sadly;” and what was worse, to a young farmer, his father laughed at him. He littered them in the close, with straw; but this would not remedy the evil: at last, he drew the turneps; and threw them to the sheep, on an adjoining piece; but even then, they did no good upon them. In short, he speaks of eating turneps upon the ground, with sheep, as a thing impracticable!

I do not mention this circumstance, to throw a damp on the culture of turneps; but to endeavour to assign them their proper soil and situation; by showing, in striking colors, the difficulties to which the crop is liable, on strong retentive land.

The other circumstance, which has tended to check the cultivation of the turnep crop, was the devastation by the turnep caterpillar, in 1782 (see NORFOLK): since which time

its culture has been declining, rather than gaining ground.

On a light dry turnep soil, in an upland situation, this crop is become in a degree *necessary*; and, there, little difficulties are struggled with, and miscarriages soon forgot. Here, on the contrary, where the land will remain in grass, and where other arable crops are more *certain* and more *productive*, the turnep crop is less *essential* to good husbandry: though, in particular situations, even in this district, I am fully persuaded, by my own experience, it may, under proper management, frequently be *useful*.

The only circumstances, in the practice of this district, that require to be registered, fall under the heads SUCCESSION, SEMINATION, HOING, and EXPENDITURE.

SUCCESSION. There is an instance of turneps being sown on OLD SWARD, (a rich bottom) on one plowing, without sodburning; yet with good success.

I have seen a CLOVER LEY, plowed up immediately after the first crop was off, sown with turneps, and with a good appearance of a crop.

But

But the most extraordinary circumstance, I have met with in the turnep culture, is that of sowing them on BARLEY STUBBLE, immediately after the crop was off, *without plowing!*

Some sheepfeed, in the spring, is all that is expected from this practice; and is not, it seems, unfrequently obtained. While the soil is in heart, the crop of barley good, and the surface of course *clean*, that is, free from the *herbage* of weeds, this may, sometimes, on a sheep farm, and under particular circumstances, be a valuable expedient. If the attempt miscarry, the seed, only, is lost. The *thought*, at least, is worth preserving; especially as the instance, which came more particularly to my knowledge, occurred in the practice of a judicious manager.

SEMINATION. The deviation, to be noticed, is in the METHOD OF SOWING. Instead of delivering the seed, from between the two first fingers and the thumb, as is usually done, the seedman (some seedsmen at least) lets it fall back into the palm of his hand, and delivers it from thence, in the manner corn is sown. It is observable, that, in this method of sowing, it is necessary to
keep

keep the fingers close ; otherwise, the seeds of turneps being small, they are liable to fly out between them. I mention this as a deviation, rather than a superior excellency. I have seen turneps come up very evenly from this method of sowing ; but not more evenly, than I have seen them rise, in Norfolk, from the common method.

For observations on HOING, in this district, see MIN. 6.

EXPENDITURE. An expedient, which I have seen practised, in this stage of the turnep culture, is that of drawing the turneps (at the setting in of a frost, or to clear the ground in the spring), and loading them upon waggons ; which are left standing in the piece ; where the turneps are safe, and ready to be drawn to whence they may be wanted.

REFERENCES TO MINUTES.

For obs. on the Midland practice of *hoing*, see MIN. 6.

For the cost of *bandweeding*, 16.

For an instance of *plowing in* turneps, as a manure, 34.

For an instance of young turneps *thriving* in drought, 43.

For

For instances of the *enemies* of turneps, see MIN. 61.

For an instance of *boing* clusters, 79.

For further obs. on turnep *insects*, 84.

For general obs. on the turnep *culture*, 87.

For practical obs. on *boing*, 87.

For instances of turneps being unfriendly to *barley*, 92.

For obs. on *turneping* in frost, 115.

21.

C A B B A G E S.

THE SOILS of this district are better adapted to CABBAGES, than to *turneps*. Considering the facility of the culture of this crop, and the great produce it yields, when a proper sort is planted on a suitable soil, and considering the length of time, which cabbages have now been cultivated as a crop in husbandry,—it is remarkable that they have not entered, more freely, into the general practice of *this* district; to whose soil and situation they are peculiarly well adapted.

At present, the quantity grown is inconsiderable: I have seen, however, several small patches, in different parts of the district; and, from the manner in which the value of these is spoken of, there is some probability of cabbages becoming a prevalent crop.

Among the rambreeders of LEICESTERSHIRE, &c. they may be said to be already established, as such; and there is one man within *this* district, Mr. PAGET of Ibstock, who has grown ten, twelve, or fourteen acres, a year, for many years past.

On the CULTIVATION of this crop, so much has been said, the public could receive little useful information, from a recital of the practice of this district.

Indeed, the art of CULTIVATING cabbages is so extremely simple, and so well understood, by every farmer, gardener, and cottager in the kingdom, it, perhaps, of all other operations in husbandry, requires the least explanation.

Much, however, depends on the VARIETY, or sort, for field culture. Not more on the *size*, than on the *nutritiveness* of quality, and the *hardiness* in resisting the severity of winter.

There

There is, in this country, a valuable sort— a large green cabbage—propagated by Mr. BAKEWELL; who is not more celebrated for his breed of rams, than for his *breed of cabbages*.

Great care is observed, here, in RAISING THE SEED; particularly, in not suffering any other variety of the brassica tribe, to *blow* near seed cabbages; by which means they are kept “true to their kind.” To this end, some, it is said, plant them in a piece of wheat: a good method; provided the seed, in that situation, can be preserved from birds.

The principal advantage of largeness, in field cabbages, is, that of being able to plant them wide enough, from each other, to admit of their being cleaned with the plow; and yet to afford a full crop.

The PROPER DISTANCE, therefore, depends, in some measure, on the natural size of the species, and the strength of the soil. The thinner they stand, the larger, no doubt, they will grow; but the closer, the more numerous: and I am of opinion, that cabbages, as turneps, are frequently set out too thin. Mr. PAGET’S distances

are four feet by two and a half: a full distance, in my opinion, for the largest cabbages, on a rich soil.

The EXPENDITURE of cabbages, here, is chiefly on SHEEP; but CATTLE and SWINE have a proportion. But, what is extraordinary, I have not in this, or any other district, met with an instance of cabbages being given to HORSES: and yet it is more than probable, that, either alone or mixed with chaf, or "cutmeat," they might be rendered a valuable species of horse food.

For ample observations on the culture of this crop, see MINUTES of AGRICULTURE in SURREY.

CULTIVATED

22.

CULTIVATED HERBAGE.

THE PERENNIAL LEY is seldom the object of cultivation, in this district; the culture of grasses being confined to TEMPORARY LEYS, and, chiefly, to one species; which may be said to be peculiar to the district; and which, though of long standing, compared with the temporary leys of other districts, cannot be deemed perennial; its continuance being limited to six or seven years. In distinction, I shall term it SIX-YEARS LEY: beside which, the ANNUAL or CLOVER LEY will require to be noticed.

CLOVER. It appears, by the COURSE OF PRACTICE already given, that growing wheat, on a clover ley, agreeably to the modern practice of the kingdom at large, is not prevalent, here. Nevertheless, the practice is sometimes used; more especially

in the common fields, where it has been introduced, in several instances, as a substitute of the bean crop.

When wheat is sown on the first year's ley, it is usual to mow the clover, twice : under an idea, that a full crop of clover, mown twice in the season, smothered weeds of every kind ; even couch ! It no doubt gives them a great *check*.

It is observable, however, that, in the commonfield practice, by sowing clover every third year, the crop, though abundant for awhile, soon begins to fail : even in so short a time as twelve or fifteen years.

This circumstance is not introduced, here, as an evidence against the cultivation of clover ; which, on a noncalcareous soil, is by much the most valuable leaf herbage agriculture is at present acquainted with ; but to put those, who have fresh ground in their possession, on their guard, in its cultivation.

TURF ; or SIX YEARS LEY. In the inclosed townships, this is the prevailing and almost only ley : furnishing, in its different stages, the two principal crops ; **CLOVER** and **GRASS**.

In the ordinary practice of the country, the method of cultivating it is, merely, that of sowing about ten pounds of RED CLOVER, at the time of sowing the barley.

To the red clover, some judicious managers, in *this* part of the district, add a small quantity of clean RAYGRASS, with a few pounds of WHITE CLOVER.

There are, however, men, and those of the first abilities, on the lighter lands; round the skirts of the Charnwood hills, who, though advocates for raygrafs, think white clover unnecessary; finding, that whether they sow any or none, their leys are equally full of it.

When this is the case, it would, indeed, be folly to throw away the seed: but there are few lands that are blest with so desirable a quality as that of affording, naturally, a turf of white clover. By manuring, highly, this valuable herb; especially on light free lands, may generally be obtained; in sufficient quantity; and it is by those, who generally manure their young leys, on such land, that white clover is omitted to be sown.

In the MANAGEMENT of YOUNG LEYS; it is observable, that, in the common practice of the district, and I understand universally,

they are *eaten off with sheep*, in autumn. This I mention, not as a pattern to be copied implicitly, but as a circumstance in provincial practice. If they be eaten off, in dry weather, and not too closely, the effect, it is possible, may not be so prejudicial as is generally conceived.

The first, and sometimes the second year, the young leys are *mown*, as CLOVER: the last four or five, they are *grazed*, as GRASSLAND.

The CLOVER of young leys is seldom mown, more than once *; but, contrary to the practice of other districts, it is frequently suffered to run up, into head, as if for mowing a second time, before stock be turned upon it!

In

* A very superior manager of this district pastures, in the spring, his clover leys which are intended to be mown for hay;—sometimes so late as the beginning of June: and gives a threefold reason, in support of his practice. The feedage of clover, in May, is valuable: a full crop of clover is made with difficulty and uncertainty: and the hay of such a crop, he conceives to be less valuable, in quality, than what he calls half a crop: and, upon his land, his reasoning may be conclusive: on a rich free loam, in high cultivation, recently inclosed, and the clover crop new to it; the practice may be right. On a less productive soil, however, and this already exhausted by clover, even half a crop could not be obtained, with any degree of certainty, by that management.

In this state, stock of every kind are admitted; particularly rams, as will hereafter appear: but horses *, and even cattle, are turned into clover, belly-deep! and this without apprehension of danger: it being found, by experience, that it is less dangerous to cattle, in this, than in a younger state.

REFERENCES.

For an instance of drawing the common thistle out of young leys, see art. CORNWEEDS:

For the AFTERMAGEMENT of these TEMPORARY LEYS, see the next article; they being, after the second year, considered, in practice, as analogous with older GRASS LANDS.

GRASS

* For an instance of clover, in this state, being affected by and friendly to horses, see MIN. 17.

23.

GRASS LANDS.

THE SPECIES OF GRASS LANDS, in the DISTRICT of the STATION, are, chiefly; LOWLAND GRASS, or "MEADOW;" and MIDDLELAND GRASS, or "TURF:" there being NO UPLAND GRASS, or SHEEPWALK within it; except some heathlets, toward the Derbyshire margin.

TURF. This includes the principal part of the grass lands of the district. It consists, chiefly, of the TEMPORARY LEYS, mentioned in the last article; with a slight intermixture of OLD GRASS LAND, provincially "OLD TURF:" namely, lands that have lain, some centuries perhaps, in a state of grass; many of them being now overrun, as such lands too often are in other districts, with anthills and other encumbrances; some of them are as full of anthills as a forest, and almost as rough.

In soil and situation, these OLD GRASS LANDS are similar to those of the temporary leys, of the arable lands; and their management is the same. All, therefore, that requires to be said of them is, that they ought not to remain, any longer, a disgrace to the husbandry of the district; but ought, either to be subjected to the general management of the country, or to be rendered productive, as grass land, by clearing them from their present encumbrances.

The GENERAL MANAGEMENT, of this class of grass lands, is that of keeping them, constantly, in the state of PASTURAGE; as grazing or dairy grounds.

In the MANAGEMENT of PASTURE GROUNDS, a few *particulars* require to be noticed: though taken *all together*, the practice of this district (nor indeed that of any other *individual* district I have yet seen) cannot be held out as a pattern. See the RURAL ECONOMY OF YORKSHIRE; in which the subject of NATURAL HERBAGE is treated of, analytically, and its several departments explained.

In the SPRING MANAGEMENT OF PASTURES, a practice prevails, in this neighbourhood,

bourhood, which I have not met with, elsewhere.

In grounds, which are fed in winter, cattle are induced to fly to the hedges for shelter, and there to drop their dung. And it is the custom, here, to set women to collect the dung, thus partially and superfluously scattered, into heaps; and to cart it into the area of the piece, there spreading it, upon the parts which most require it: while some individuals pile it, in large heaps, to be set about in winter; objecting to the practice of spreading it over the grass, in the spring, as tending to foul it: and, under the same idea, they object to spreading the dung, dropt in the area of the piece,—late in the spring: esteeming it better management to collect it and carry it off, in order to be set about, in a more suitable season.

The whole of this practice, so far as relates to the collecting of dung on pasture lands, more especially *old* pasture lands, may be eligible. But I am of opinion, that dung thus collected, ought not to be set upon *pasture ground*; especially such as, having been long in a state of pasturage, may be in a degree satiated with this species of manure; but

but should be carted to the dungyard, for the use of the *arable land*; or piled in heaps, for the use of *mowing grounds*: not, however, to be set on, in winter—the worst season possible—but immediately after the hay is off; refreshing the pasture grounds, if they require it, by some *change* of manure*.

For the *stocking* of *pastures*, see the article GRAZING.

In what may be termed the WINTER MANAGEMENT OF PASTURES, this district furnishes an instance of practice, which is well entitled to a place in this register: namely, that

* MOLES. A remarkable circumstance, in the present state of agriculture of this district, is the scarcity of moles. A mole hill is rarely seen. There are, perhaps, entire townships, without a single mole in them.

Two reasons may be assigned, for this circumstance. There are, in this district, few *old hedgemounds*, and still less *woodland*: both of them nurseries of moles. And while they are thus destitute of shelter, it is the practice for townships to join in their destruction.

The price, in a township which has been neglected and the number of moles considerable, is about a penny, an acre, a year: afterwards, not more than a halfpenny, an acre: not more than two guineas, perhaps, for a middle-sized township: and this, under due attention, becomes in a few years a mere sinecure: except near woods; where they can seldom be wholly overcome.

that of shutting up pasture grounds, in autumn, for a supply of SPRING FEED.

Mr. PAGET of Ibstock, in whose superior management I more particularly observed this admirable stroke of practice, shuts up, from the middle of September, to about old Michaelmas, as the age of the grass, the season, and other circumstances suit; making a point of eating the ground level, and bare, previously to its being freed from stock; from which it is kept free, until it be wanted for ewes and lambs; or, if it be intended for cattle, until the first shoot of grass in the spring; which, mingling with the autumnal shoots, the herbage is found to be more nutritious to stock, than either of them are separately. As a *certain* and *wholesome* supply of food, for ewes and lambs, in early spring, this PRESERVED PASTURE is depended upon, as the sheet-anchor; in preference to turneps, cabbages, or any other species, whatever, of what is termed SPRING FEED.

For observations ON PRESERVING AFTER-GRASS, as a supply of spring feed, see YORKSHIRE, Art. AFTERGRASS.

“MEADOW.” The meadow lands, of this district, consist of the banks of rivers, and

and of the bottoms, or dips of vallies, scattered over almost every part of it.

These meadows are, in general, kept as **MOWING GROUNDS**; and the particulars of their **MANAGEMENT**, which will require to be noticed, fall under the heads

Draining,
Watering,
Hay harvest,
Aftergrafs.

DRAINING. This operation, whether with respect to *underdrains*, or *surface drains*, is well attended to, here; better, I think, than in any other district, which has fallen under my observation.

Underdraining has been already mentioned, under the article **SOIL PROCESS**; and all that requires to be said of *surface draining* is, that it is generally done in the proper season,—autumn, or the beginning of winter. See **NORFOLK, MIN. 51.**

For instances of practice in draining meadow lands, see the **MINUTES** referred to below.

WATERING MEADOWS. The watering of meadows cannot be said to have entered, yet, into the common practice of this district.

Never-

Nevertheless, it has made some considerable progress towards it. Many of the superior class of occupiers have, already, evinced their spirit, at least, in prosecuting this **CARDINAL IMPROVEMENT**.

There are, indeed, a few instances, in which the art has reached a degree of excellency, equal, perhaps, to that which it has attained, in any other part of the island. But as I still hope to see this department of rural affairs, on what may be termed its own native soil, the **WESTERN COUNTIES**, where it appears to have been first practised, in this island, and where, only, I believe, it has been received into common practice,—I shall forbear giving a *detail* of it, in this place. Nevertheless, there are *circumstances*, in the practice of this district, which require to be noticed.

The **ORIGIN** of meliorating grass lands, with water, may be traced, pretty evidently, in this district.

The benefit of **NATURAL FLOODS**, to the grass lands they occasionally overflowed, being evident, and in some instances great, the means of producing **ARTIFICIAL FLOODS**, and of spreading them over lands, not liable,

in their natural situation, to be overflowed, would become, of course, a desirable object.

The most *obvious* effect of floods, or overflowings of rivers and brooks, on the lands over which they spread, is that of *depositing their feculent particles*; thereby operating, as a VEHICLE OF MANURE. It is likewise evident, to common observation, that foul waters, as those of floods, let fall their feculencies, most freely, in a *stagnant state*. And it is also equally evident, that the state of stagnation of the waters of floods, or a state that approaches it, is caused by some obstruction of the current, below the place of stagnation.

These circumstances being seen, and they could not well be missed, by any one who gave the subject a second thought, the means of manuring lands with water, artificially, were given: in situations, I mean, which would admit of the requisite obstructions.

The dips or vallies which abound, more or less, in every quarter of the kingdom, and which are mentioned above, were most apt subjects for flooding, artificially, with foul waters, on the principle of MANURING the land with their SEDIMENT.

A bank, or dam, being made across the valley, below the part to be manured, the rivulet, which generally accompanies a valley of this kind, especially after heavy rains, the only time when flooding on this principle could be practised, would of course be obstructed; and its waters, fouled, perhaps, with the richest particles of arable lands, would be spread over the bottom of the valley, to an extent proportioned to the height of the bank, and its own flatness; a valve or floodgate being fixed in the bed of the rivulet, to let off the waters, when the *whole* of their foulness were deposited: thus gaining a principal advantage over natural flooding; in which the grosser particles, only, are let fall; the finer, and perhaps most valuable, escaping to the river, and thence to the sea, before they be precipitated.

On these principles, it is evident, some of the meadow lands of this district have formerly been flooded*: and it is not probable, that so evident a method, of improving meadow lands, should have been confined to this district; but may have been common to other parts of the island.

But

* See MIN. 27.

But the ANTIENT METHOD of meliorating grass lands, by the means of STAGNANT WATER, could no longer prevail, than until the superior effects of RUNNING WATER, on such lands, were discovered and ascertained.

This important discovery must have been made, by *observation*, on the comparative effects of running and standing water, in the natural or artificial flooding, above spoken of; and must have been ascertained, by a long course of *experience*: it is not likely that *reason* should have had any share, in striking out the MODERN METHOD of improving grass lands, by RUNNING WATER. For even now, when the reality of the improvement appears to be fully established, there seems to be no satisfactory *theory* to account for it. The *warmth*, communicated by running water, to the grass it flows over, is the best account, that the most enlightened in the art can give, of the good effect of running water, on grass land.

Even after the discovery was made, and the effect fully established, it would be some length of time, before the art arrived at its present high degree of perfection. It may, in its present state, be safely deemed the most

scientific operation, that has entered into the common practice of husbandry.

To the memory of the inventor, or inventors, be the highest praise !

If the art, as it now stands, were struck out on PRINCIPLE; it must have been on that of ANIMAL CIRCULATION; to which the operation of meliorating grass lands, with water, through the means of FLOATS and DRAINS, is perfectly analogous.

The *floats* are *arteries*, conveying the circulating fluid to every part of the subject; imbuing every atom: the *drains, veins*, collecting the scattered fluid, and conveying it back to its natural channel.

In less figurative language, the FLOATS are trenches, receiving, by the means of floodgates, as occasion requires, the water of a river, brook, or rivulet, and conveying it along the upper margin, and upon the tops of the natural or artificial swells of the field of improvement:—the DRAINS, counter trenches, stretching along the lower margin, and winding in the dips and hollows, to receive the water spread over the surface by the floats.

Each

Each set of trenches, whether of floats or drains, bears more or less resemblance to a tree, with its trunk and branches: the branches of the floats increasing in number, and diminishing in size, as they proceed from the river or other source; those of the drains, on the contrary, diminishing in number and increasing in size, as they approach the receptacle.

When the water is at "work" (as it is properly enough termed) the entire surface (supposing the operation to be *perfect*) is covered with one continued SHEET OF LIVING WATER; purling evenly over every part, some inch or more deep. If the grass be very short, the water is seen; and has a beautiful as well as a profitable effect: if not, it steals, unseen, among the herbage; or shows itself, partially: it being impossible, in practice, to render the sheet, throughout, of a uniform depth or thickness.

From this general idea of the method of watering grass lands, on the modern principle, it is evident, that a *dead flat*, a *perfect level*, is, of all other, the least adapted to the practice.

A perfect level, however, seldom occurs in nature: inequalities, sufficiently to pro-

mote a circulation of water on turf, may generally be discovered, if judiciously sought.

In the MIDLAND COUNTIES, I have seen, in the practice of a superior manager, a beautifully simple expedient practised, to find out the inequalities of a piece of ground, nearly flat : that of covering it with water ; and preserving the level by the means of “ levelling pegs :” stumps or piles driven down, in various parts, to a level with the surface of the water ; so that after the water was let off, the level still remained. The parts last covered were, of course, the proper ground for the floats ; the parts last freed, for the drains : ART being used, where wanted, to give additional advantage to the natural inequalities.

Situations, in general (water-formed lands excepted), abound sufficiently with inequalities of surface : either natural, as the *swells and hollows* of lands, lying out of the way of floods, and having never been plowed : or artificial, as those which have been raised, by the plow, into *ridge and furrow* : in *this* case, the ridges receive the floats, the furrows the drains : in *that*, the plummet is the guide to the floats ; the water they throw out, to the drains.

In this district, I have seen the *side of a hill* watered, with rain water, from a road, running along the top of it: the same trench, in this case, acting as float and drain; running, a zigzag, along the face of the slope; the lower folds catching the water spread out by the upper.

I have likewise observed, in this district, several instances of *ridges and furrows* being watered from similar sources. In these cases, whether the natural descent of the lands were little or great, the floats were opened upon the ridges, with clods of turf, cut out of the trenches, placed, at distances proportioned to the descent, to check the current sufficiently, to force the water out of the trench above, yet leaving it a sufficient passage, to suffer it to carry down a supply to the parts below.

In this district, also, I have met with one or more instances, in which *ridges and furrows* have been *levelled!* at an excessive cost, by paring off the turf, throwing down the ridges, by hand, and replacing the turf! giving the surface one regular gentle descent: and this, notwithstanding it is allowed, by those who may be styled masters in the art, that THE

QUICKER THE CIRCULATION, THE MORE BENEFICIAL THE EFFECT!

Upon the whole, it appears pretty evidently, that the operation, though *scientific*, can seldom be rendered *mechanical*. Straight lines and plain surfaces can seldom be had, but at a great and, frequently, an unnecessary expence. The given situation of the ground should be consulted, and maturely studied, before the work be set about. Every site may be said to require a different arrangement of trenches. Of course, no man ought to set about a work of so difficult a nature, until he has studied its principles, and made himself master of its *theory*: nor, then, without the assistance of *practice*, in himself or others.

To expatiate on the UTILITY of watering grass lands would be a waste of words. In situations where a *sufficient supply* of water, of a FERTILIZING QUALITY, can be commanded, *at all seasons*, it ranks, indubitably, among the highest class of improvements.

Much, however, depends on the QUALITY OF THE WATER: not on its *color*, or *clearness*, but the specific quality of the
suspended

suspended particles. Waters, in their natural state (not purified by distillation), more especially spring waters, though perfectly transparent, and pure to the eye, are various in quality, as soils are: owing to earthy and other particles being suspended in them, imperceptibly to the eye; requiring the aid of chemistry to detect them. Hence, hard water, soft water, wholesome waters, and medicinal waters. For a striking effect of clear spring water, see MIN. 39.

But although very much depends on the quality of water, for the purpose of meliorating grass lands, very much also depends on the QUANTITY: on having a *sufficient supply*, AT ALL SEASONS. With this, there are, perhaps, few waters which might not be rendered beneficial to grass land, if thrown over it, at proper seasons, and in proper quantity: without it, the benefit, it is possible, may not be adequate to the expence. The *most obvious* advantage of watering grass lands arises, *in a dry season*; and if the supply fail, in such seasons, as frequently happens, in many situations, the intention is, in part, frustrated: the winter and early spring waterings being, in this case, all that can be commanded.

This,

This, however, by way of caution: not as a discouragement to the practice. There are, in this island, situations innumerable, in which the advantages arising to the practice, properly conducted, would far exceed the expence of obtaining them: and to ascertain them is an object of the first magnitude, to the owners and occupiers of grass lands.

Having thus endeavored to convey a general idea, to those who are unacquainted with the subject, of the nature, the operation, and the effect of watering grass lands, on the principle of CIRCULATION, I will mention a few interesting circumstances of practice, which occurred to my observation, in the Midland district.

Mr. BAKEWELL of Dishley stands first, in this quarter of the kingdom, as an improver of grass lands, by watering.

Formerly, a suite of meadows, lying by the banks of the Soar, received considerable benefit, from the water of the river being spread over them judiciously, in the times of floods. But, now, not only these meadows, but near a hundred acres, I believe, of higher land, lying entirely out of the way of natural floods, are watered on the modern principle.

Mr. Bake-

Mr. Bakewell, like a man of experience in business, before he set about this great work, studied the art, in the principal scene of practice; the west of England; where he spent some days with the ingenious Mr. BOSWELL, who, not many years ago, published a treatise on the subject*.

The great stroke of management, in this department of Mr. Bakewell's practice, which marks his genius in strong characters, is that of diverting to his purpose a rivulet or small brook, whose natural channel skirts the farthest boundary of his farm; falling, with a considerable descent, down a narrow valley; in which its utility, as a source of improvement to land, was confined.

This rivulet, therefore, is turned, at the highest place that could be commanded, and carried, in the canal manner, round the point of a swell, which lies between its natural bed and the farmery; by the execution of this admirable thought, not only commanding the skirts of the hill, as a site of improvement by watering; but supplying,
by

* MR. BOSWELL'S TREATISE, ON WATERING GRASS LANDS, cannot be too strongly recommended, to those who wish to become acquainted with the practice.

by this ARTIFICIAL BROOK, the house, and farm offices, with water: filling, from it, a drinking pool, for horses and cattle; a wash pool, for sheep; and converting it to a multitude of other purposes*: acquisitions which many other situations in the island are capable of affording.

Mr. B.'s improvements, in this department of rural affairs, are not only extensive, but high; and are rendered the more striking, by "proof pieces" (a good term for experimental patches) left in each site of improvement. Mr. Bakewell is, in truth, a *master* in the art; and Dishley is, at present, a *school*,

* One of which is too valuable to be passed without distinction. Three years ago, Mr. B. I remember, was endeavouring to invent a flatbottomed boat, or barge, to navigate upon this canal; for the purpose, most particularly, of conveying his turneps from the field to the cattle sheds. But finding this not easily practicable, his great mind struck out, or rather *caught*, the beautifully simple idea of launching the turneps themselves into the water; and letting them float down singly with the current! "We throw them in, and bid them meet us at the Barn's End!!!" where he is now (October 1789) contriving a reservoir, or dry dock, for them to sail into: with a grate, at the bottom, to let out the water; and retain the turneps; which will there be laid up, clean washed, and freightfree, as a supply in frosty weather!

school, in which it might be studied, with singular advantage.

Mr. PAGET of Ibstock is also a proficient, in the science and art of watering grass lands, on the modern principle. He cuts a considerable quantity of hay, annually, from lands which have received no other *manure* than *water*, during the last forty years. A striking instance, this, that water is not merely a *stimulus* or *force*, as some men conceive it to be; but communicates some real *nutriment* to the herbage*.

Mr. MOOR of Appleby has executed a considerable work, of this kind, and in a judicious manner; cutting a fresh channel, on one side of the site of improvement, for a rivulet which winded through its middle; in order to prevent its overflowing at an improper season; and converting the old channel (partially filled up) into a main float: an expedient which may frequently be practised with good effect.

And

* One circumstance which occurred in Mr. P.'s practice ought to be mentioned, by way of caution. By watering an ORCHARD with the washings of the street and yards of a neighbouring village (a desirable species of water) the fruit trees were greatly injured: and in Mr. B.'s practice, a similar circumstance took place.

And Mr. WILKS of Meeſham, among his various and extraordinary exertions of genius and ſpirit, has not neglected the watering of graſs lands: a ſpecies of rural improvement which he is proſecuting with, perhaps, unexampled ardor.

In *this* neighbourhood, there are two inſtances of practice, which form a ſtriking conſtrast: one was done at a great expence, with an uncertain ſupply of water: the other at a trifling coſt, with an abundant ſupply, at all ſeaſons. But as the comparative effect, of theſe two incidents of practice, will appear, under ſtriking circumſtances, in the MINUTES, it is unneceſſary to ſay more on the ſubject, here.

HAYING. The harveſting of *herbage* is among the firſt concerns of huſbandry. The quality, and of courſe the value, of hay depends, in a great meaſure, on the ſtate in which it is laid up. *Grain*, though liable to damage, by a long continuance of unfavorable weather, is much leſs hazardous than herbage.

Nevertheless, in many, or moſt, parts of the kingdom, we find HAYMAKING, notwithstanding it is one of the oldeſt operations
in

in husbandry, the least understood, or the most neglected. In this district, it is found in a state of the lowest neglect.

The ordinary practice of the district is this: the swathes are spread, immediately, or presently, after the mowers, with little or no regard to the weather: suffering the grass to lie abroad, no matter how long, until the top be dry. It is then turned; and, the other side being dried, it is raked into rows; and carried, as it becomes dry: beginning the rick, perhaps, as soon as one load is ready; letting it lie abroad; continuing to add load after load, until it be topped up. During the two hay harvests I was in the district, I do not recollect to have seen, in its practice, a HAYCOCK, *of any size or form*; some bundles of clover hay excepted!

But a main stimulus to good management, emulation, appears to be here wanting, in this case. It is no disgrace to make bad hay. Every thing is attributed to the weather. All the praise of haymaking is given to him who has done first; and all its disgrace falls on him who finishes last.

In 1784, a difficult season, a first-rate farmer *bragged* of his having made, that year,
all

all sorts of hay ; as cow hay, stirk hay, and “ pig hay :” namely, some so bad as to be fit for litter, only.

In 1785, when hay was four or five pounds a ton, I have seen a very industrious painstaking farmer tedding his hay, while it actually rained : giving as a reason for his conduct, that it must be spread about, and it might as well be done sooner as later. Yet I had heard this very man offering, only a few days before, a speculative price of four guineas a ton for “ good” hay, to be delivered the ensuing winter, for his own use ! Nevertheless, the hay under notice lay several days, abroad, before it was deemed sufficiently dry, on the top, to be turned !

These circumstances are not mentioned unnecessarily ; but to shew, the last more particularly, which occurred in the practice of one of the shrewdest best managers in his neighbourhood, that the art is not sufficiently understood : though, in the practice of some few individuals, it may be superior to the ordinary practice of the district.

For practice in SURREY, see MIN. of AGRIC.

For the practice of YORKSHIRE, see the Register of the Rural Economy of that County.

For

For the practice of GLOCESTERSHIRE, see GLO. ECON.

AFTERGRASS. The management of aftergrafs, here, is in general judicious. It is mostly suffered to get up to a full bite, before it be broken: not turned in upon, as in GLOCESTERSHIRE, as soon as the hay is off; nor suffered, as in YORKSHIRE, to stand until much of it be wasted. For further remarks on this subject, see MIN. 62.

In the *stocking* of lattermath, likewise, the Midland graziers are judicious: esteeming it bad management to overstock it. A cow, an acre, on well grown aftergrafs, seems to be considered as full stock.

REFERENCES TO MINUTES.

For observations on the ancient method of *flooding* grafs land, by "floating upward," see MIN. 27.

For instance of practice in *surface draining*, see MIN. 32.

For the practice of *burning dead grafs*, and the dangerous consequences, 38.

For the effect of *calcareous water*, on land, see MIN. 39.

For observations on the *water of the Dove*, &c. see MIN. 42.

For an instance of great profit, by *watering*, see MIN. 46.

For the propriety of cutting *surface drains*, where fods are wanted, 49.

For experience and the expence, in mowing off the *weeds of pasture grounds*, 51.

For lists of *grasses* and *weeds*, and observations on *agricultural botany*, 55.

For observations on *haying in drought*, and on the small *produce* of hay in 1785, 56.

For remarks on eating *lattermath*, 62.

For practice in spreading the mold of *surface drains*, 64.

For practice and expence of clearing *drinking pits*, 66.

For practical observations on *watering ridges*, 68.

For farther observations on spreading the mold of *surface drains*, 69

For an opinion that *geese* are eligible in *pasture grounds*, 72.

For observations on the *meadow softgrass*, see MIN. 73.

For obs. on the *creeping crossfoot*, 85.

For instances of *haying*, in September, 88.

LIVESTOCK.

24.

L I V E S T O C K .

A DISTRICT, rich in soil, and much of it in a state of herbage, naturally abounds with LIVESTOCK.

In the MIDLAND DISTRICT, the four principal species are found in peculiar plenty, and in a singular state of improvement. The other three I shall pass over. RABBITS cannot be deemed an object of the rural economy of this district; and with regard to POULTRY and BEES, nothing sufficiently striking has occurred to me, to require particular notice*.

Therefore, this division of the present work will be confined to

Horses,

Sheep,

Cattle,

Swine.

R 2

A country

* Except that GAME FOWLS are, here, in the first estimation, as a species of POULTRY; as producing more eggs, and being, themselves, better *fleshed*, and better *flavored*, than fowls in general.

A country that has deservedly obtained so much credit, by its management of livestock, especially the three species first mentioned, and which has carried on the improvement of the several species, more particularly those of cattle and sheep, with a spirit unknown before, and has raised them to a height unattained, perhaps, in any age or nation, is entitled to every attention. It would, indeed, be unpardonable, and altogether inconsistent with this undertaking, to pass over its practice, in a superficial manner. The spirit of improvement is now in the zenith, and the improvement itself, taken in a general light, is now, probably, at its height. The breed of horses of this district is allowed to be on the decline. Its breed of cattle are probably at its height. And its sheep are, at present, so near perfection, that it is not *probable* they should hereafter receive *much* improvement. Beside, the grand luminary of the art has passed the meridian, and, though at present in full splendor; is verging toward the horizon.

It must not, however, be understood, by those who are not locally acquainted with this district, that Mr. BAKEWELL, though he has been long, and most deservedly, considered

as the principal promoter of the ART OF BREEDING, and has for some length of time taken the lead, is the only man of distinguished merit, in this department of rural affairs, in the district under survey. It abounds, and has, for many years, abounded, with intelligent and spirited breeders. I could mention some fifteen or twenty men of repute, and most of them men of considerable property, who are in the same department, and several of them eminent for their breeds of stock.

Nevertheless, it must be and is acknowledged, that Mr. BAKEWELL is at the head of the department; and, whenever he may drop, it is much to be feared, and highly probable, that another leader, of equal spirit, and equal abilities, will not be found to succeed him.

Having said this, however, it will be proper to apprise my readers, still farther, that the following account must not be understood, as a detail of the practice of Mr. BAKEWELL; but as a more enlarged register of the practice, at present established, in the MIDLAND COUNTIES. For notwithstanding I have been repeatedly favored with opportunities

of making ample observation, on Mr. BAKEWELL's practice ; and have, as repeatedly, been favored with his liberal communications, on rural subjects, it is not my intention to deal out Mr. B.'s *private* opinions, or even to attempt a recital of his *particular* practice ; any other than as it constitutes a valuable part of the practice of the district under survey.

In registering this practice, it will be requisite, beside a separate account of the several BREEDS and their IMPROVEMENT, to describe the methods of BREEDING and REARING, each species, and to detail the business of GRAZING, and the MANAGEMENT of the DAIRY.

To give full scope to the enquiry, it will be necessary to take a separate view of each species of livestock, that are here the objects of attention ; and, previously, to convey some general ideas respecting the PRINCIPLES of IMPROVEMENT, which have, here, been laid down, and the MEANS, by which they have been successfully, and rapidly, raised into practice. The subject is new, at least to this work, and will therefore require a degree of attention adequate to its importance.

The

The most general principle is BEAUTY OF FORM;—a principle which has been applied in common to the four species. It is observable, however, that this principle was more closely attended to, at the outset of improvement (under an idea, in some degree falsely grounded, that BEAUTY OF FORM and UTILITY are inseparable) than at present, when men who have been long conversant in practice, make a distinction between a “useful sort,” and a sort which is merely “handsome.”

The next principle attended to is a PROPORTION OF PARTS, or what may be called UTILITY OF FORM, abstractedly considered from the BEAUTY OF FORM: thus, of the three edible species, the parts which are deemed OFFAL, or which bear an INFERIOR PRICE at market, should be small, in proportion to the better parts. This principle, however, appears to have been differently attended to, in different species; and will require to be re-examined, in taking the separate view of each species,

A third principle of improvement, which has engaged the attention of the Midland breeders, is the texture of the muscular

parts—or what is termed FLESH: a quality of livestock which, familiar as it may long have been to the *butcher* and the *consumer*, has not, perhaps, been attended to by *breeders*; whatever it may have been by *graziers*, until of late years, in this district; where the “FLESH” is now spoken of, with the same familiarity, as the hide or the fleece; and where it is clearly understood, that the grain of the meat depends wholly on the BREED, not, as has been heretofore considered, on the SIZE of the animal*.

But the principle which, at present, engrosses the greatest share of attention, and which, above all others, is entitled to the *grazier's* attention, is FAT,—or rather FAT-TING QUALITY; that is, a natural propensity to acquire a state of fatness, at an early age, and, when at full keep, in a short space of time: another quality which is found to be hereditary;—depending, in some considerable

* It appears, however, in the practice of YORKSHIRE (See CATTLE.), that circumstances led the breeders of that country to pay some attention to the flesh of *cattle*: and I have been informed, by a gentleman conversant in the HEREFORDSHIRE breed of cattle, that similar circumstances took place, and probably about the same time, in that quarter of the island.

considerable degree at least, on BREED, or what is technically termed BLOOD: namely, on the specific quality of the parents.

Thus it appears, that the Midland breeders rest every thing on BREED; under a conviction, that the *beauty* and *utility of form*, the quality of the *flesh*, and its propensity to *fatness*, are, in the offspring, the natural consequence of similar qualities in the parents. And, what is extremely interesting, it is evident from observation, that these four qualities are compatible; being frequently found united, in a remarkable manner, in the same individuals.

Without admitting, or endeavoring to confute, in this place, that the four qualities, here explained, are the only ones necessary to the perfection of the several species of livestock now under review, we pass on to the MEANS, whereby those principles have been applied, in attaining the degree of perfection, which is observable, at present, in the district under survey.

The MEANS OF IMPROVEMENT, in the established practice of the kingdom at large, are those of selecting females, from the native stock of the country, and CROSSING
with

with males of an alien breed; under an opinion, which has been universally received, that continuing to breed from the same line of parentage tends *to weaken the breed*.

Rooted, however, as this opinion has been, and universally as that practice has prevailed, there is little doubt of the fact, that the superior breeds of stock, in this district, have been raised, by a practice directly contrary; namely, that of breeding, not from the same *line*, only, but the same *family*: a practice which has now been so long established, as to have acquired a technical phrase to express it: "BREEDING IN AND IN" is as familiar in the conversation of Midland breeders, as CROSSING is in that of other districts*. The sire and the daughter, the son and the mother, the brother and the sister, are, in the ordinary practice of superior breeders, now permitted to improve their own kind; and through the assistance of this practice, as will appear, the *bold* leader of these improvements produced his celebrated stock.

The

* BREEDING IN AND IN. This term, however, is not, I understand, of Midland origin; claiming *Newmarket* as its birth-place; the idea it represents, being struck out, and the practice in a degree established, by the breeders of race horses.

The argument held out, in its favor, is, that there can be only one *best* breed; and if this be *crossed*, it must necessarily be with an *inferior* breed; the necessary consequence of which must be an *adulteration*, not an *improvement*.

How far this novel practice may, in a general light, be considered as superiorly eligible would be improper to be discussed, in *this* place; in which I mean to convey, only, a general idea of the present practice of the district; in order to save repetition, and to enable the reader to follow me through the several parts of the enquiry, with greater facility. To this intent, it must likewise be understood, that, although much has probably been done, by BREEDING IN AND IN, much also has been done, by CROSSING; not, however, by a mixture of alien breeds, but by uniting the superior branches of the same breed.

The degree of excellency obtained, however, through these means, is not more remarkable, than the rapidity with which the improvement of the several breeds has been carried on, and extended; not over this district, only, but to various parts of the island.

But these circumstances, likewise, have arisen, principally, out of a mere point of practice; which, though not peculiar to this district, is nowhere, I believe, equally prevalent (except in Lincolnshire), and enters not, in any degree, into the practice of the island at large: in which breeders of every class *rear*, or *purchase*, their MALE STOCK.

Here, on the contrary, breeders mostly HIRE THEM BY THE SEASON,—of a few leading men, in the line of breeding males for this purpose; returning them, at the end of the season, to their respective owners; who, during the time of letting, have their shows, or exhibitions, to which dairymen, graziers, and stallion men repair, to choose and hire males for the coming season.

Beside these private exhibitions, there are, annually, PUBLIC SHOWS, in different parts of the district, for the same purpose: thus ASHBY has its *stallion show*; LEICESTER its *show of rams*; and BOSWORTH has its *show of bulls*: not, however, merely for letting, but likewise for sale.

The practice of letting male stock, by the season, is a department of rural affairs

not known to the kingdom at large; forming a *new* subject in the rural science.

In practice, however, it generally happens, that a breeder of male stock, provincially, (for want of a better term) called a "TUPMAN," is likewise a DAIRYMAN, and frequently a GRAZIER; Mr. BAKEWELL being the only man, in this district, who confines his practice, solely, to BREEDING and LETTING.

It must not, however, be understood, that dairymen and graziers, universally, throughout the district, hire their males of these superior breeders. Many of them still go on, in the old track of rearing, or of purchasing of each other, agreeably to the practice of other districts.

The practice of LETTING OUT MALE STOCK, by the season, being a subject new to this undertaking, it will be proper, in this place, to examine it with due attention.

Its ORIGIN does not clearly appear. It has probably arisen in the letting of STALLIONS, for the spring season. A domestic, industrious man has a good horse; but is too attentive to the ordinary business of his farm,

farm, to follow him every week to three or four markets, and too diffident, to set him off to advantage, and to enter into contests, and unavoidable squabbles, with stallion men: while, to a man of more leisure, and less modesty, a loose calling is most agreeable. Thus both parties are served: the letter, by receiving a sum certain, and his horse again; the hirer, by getting a greater number of mares, than the owner could have got. This mode of disposal would, of course, give a loose to the breeding of STALLIONS; for the breeder not only got rid of the disagreeable part of the business; but, if his own neighbourhood were overstocked, he could, by this means; send them to other districts. And similar circumstances may have led to the letting of BULLS and RAMS.

This being as it may, the letting of RAMS has long been the practice of Lincolnshire; and the letting of HORSES has probably been practised, on a small scale, in many districts. But the letting of male stock, viewed in the general light we are now viewing it, was never applied, generally, to the three principal species, until
of

of late years in this district. Mr. BAKEWELL, though he cannot be deemed the projector, has certainly been the principal promoter, of this branch of rural business.

The EFFECT of letting male stock has been greater, probably, than was foreseen. The great improvement which has been made, in the stock of this district (particularly sheep) is striking; but may be accounted for, in this practice. A superior male, the best for instance, instead of being kept confined within the pale of his proprietor, or of being beneficial to a few neighbours only, became, through this practice, a treasure to the whole district: this year, in one part of it, the next, in another. Hence, even one superior male may change, considerably, the breed of a country. But, in a year or two, his offspring are employed, in forwarding the improvement. Such of his sons, as prove of a superior quality, are let out in a similar way; consequently the *blood*, in a short time, circulates through every part, and every man of spirit partakes of the advantage.

The METHOD of conducting this department of rural affairs, and the PRICES given; will appear under each species of stock.

HORSES.

25.

H O R S E S.

THE SPECIES of horse, bred in this district, is the BLACK CARTHORSE; for which the Midland Counties have, for some length of time, been celebrated. - Therefore, notwithstanding a full conviction, in my own mind, of the unprofitableness of this breed of horses, as beasts of draft in husbandry, it is necessary to the due execution of this work, and for other reasons which will appear, to register the leading facts, belonging to the present improved variety of the Midland Counties.

This variety, it is generally and well understood, took its RISE in six ZEALAND MARES, sent over from the Hague, by the late LORD CHESTERFIELD, during his embassy at that court.

These mares finally resting at his lordship's seat at BRETBY, in the Derbyshire
quarter

quarter of this district, the breed of that quarter became improved, and DERBYSHIRE, for some time, took the lead, in this species of stock.

But, in course of time, LEICESTERSHIRE (into which this improved breed had travelled) either through better fortune, or better management, got the lead,—and kept it: Derbyshire having been, for some years, indebted to Leicestershire, for their best stallions: so much depends on fortune, or management, or both, in breeding.

But although this may be deemed the origin of the present breed of Leicestershire, the FORM has been very much altered, since its first establishment. During the last thirty years, the long forend, long back, and long thick hairy legs, have been contracting, into a short thick carcase, a short but upright forend, and short clean legs: it having been at length discovered, by men of superior penetration, that strength and activity, rather than height and weight, are the more essential properties of farm horses: and there appears to be, at present, some hope of men in general gaining their senses, *so far*, as to see them in the same light.

The *handsomest* horse I have seen, of this breed, and perhaps the most *pictureable* horse of this kind, ever bred in the island, was a stallion of Mr. Bakewell, named K. He was, in *reality*, the *fancied* war horse of the German painters; who, in the luxuriance of imagination, never perhaps excelled the natural grandeur of this horse. A man of moderate size seemed to shrink behind his forend, which rose so perfectly upright, his ears stood (as Mr. B. says every horse's ears ought to stand!) perpendicularly over his fore feet. It may be said, with little latitude, that, in grandeur and symmetry of form, viewed as a pictureable object, he exceeded, as far, the horse which this superior breeder had the honor of showing to his majesty, and which was afterwards shown, publickly, some months ago in London, as that horse does the meanest of the breed. Nor was his form deficient in utility. He died, I think in 1785, at the age of nineteen years.

But the most *useful* horse I have seen, of this breed, is a much younger horse of Mr. B. whose *letter* * I do not recollect. His
carcase

* Mr. Bakewell has adopted the simple plan of distinguishing, not his horses only, but his bulls, and rams, by *letters*, instead of less elegant *names*.

carcase thick, his back short and straight, and his legs short and clean: as strong as an ox; yet active as a poney; equally suitable for a cart or a lighter carriage:—a species of animal, which, if it were fashionable as human food, would be full as eligible, for a farmer's use, as an ox, of equal strength and activity.

Another comparative advantage of the present improved variety, over the great loose heavy fluggish sorts of this breed, is its *hardiness*: its thriving quality: its being able to carry flesh, or stand hard work, with comparatively little provender.

Among saddle horses, this distinction, in *individuals* at least, is very observable; and there is no doubt of its belonging to distinct *breeds* of horses; and may, in much probability, belong to *varieties*; may be hereditary; may descend with some degree of certainty from parents to their offspring.

If hardiness of constitution, if the natural propensity of thriving on a comparatively small proportion of food, observable in some individuals, be, in its nature, hereditary,—be attainable with any tolerable degree of certainty, by management in breeding, as

those who have experience assert it is, not in the horse only, but in every other species of farm stock,—it is a most interesting fact, in the NATURAL ECONOMY of DOMESTIC ANIMALS.

BREEDING. To gain a comprehensive idea of this subject, it will be proper to examine the male and the female, separately.

STALLIONS. Viewing the district at large, stallions are bred, and managed, in different ways. Some are bred by *farmers*, who draw them, and cover with them, in the season. Others by *breeders*, who either cover with them, themselves, or let them out to others, for the season, or sell them, altogether, to farmers, or stallionmen, who travel them about the country, as in the practice of other districts.

The *letting* is done, either at the breeder's private shows, previously to the season of covering, or at a public show, where they are sold, as well as let; as will appear in MIN. 37.

The *prices* given for stallions,—*by purchase*, are fifty to two hundred guineas,—*by the season*, forty to eighty or a hundred,—*by the mare*, half a guinea to two guineas.

The

The celebrated horse K. covered, many years, at five guineas, and the horse, mentioned as having been shown in London, is rated at the same price.

The MARES are mostly kept by arable farmers, who work them in their teams, until near their times of foaling; and, moderately, afterward, while they suckle; shutting up the foals, during working hours; giving the mares not more, perhaps, than a month's respite from work.

The best *time of foaling* is thought to be March and April: the *time of weaning*, October or November.

DISPOSAL. In the ordinary practice of the country, the breeders of these horses sell them, while YEARLINGS (provincially "colts"), or perhaps when FOALS: namely, at six or eighteen months old: but most generally the latter.

The FIRST PLACES OF SALE, for YEARLINGS*, are the autumnal fairs of Burton (on Trent), Rugby (in Warwickshire), and Ashburn (in Derbyshire), where they are

S 3

mostly

* The PLACES OF SALE, for FOALS, are the autumnal fairs of Ashby (de la Zouch) and Loughborough (in Leicestershire), where they are taken with the dams, previously to their weaning.

mostly bought up, by graziers of Leicestershire, and the other grazing parts of the Midland District; where they are *grown*, among the grazing stock, until the autumn following; when the graziers take them to

The SECOND PLACES OF SALE,—Stafford and Rugby; where, at two years and a half old, they are bought up, by the arable farmers (or dealers) of Buckinghamshire, Berkshire, Wiltshire, and other western counties; where they are broken into harness, and worked until they be five, or, more generally, six years old; when these farmers, or dealers who buy them up in the country, take them to

The THIRD PLACE OF SALE,—London! where they are finally purchased for drays, carts, waggons, coaches, the army, or any other purpose they turn out to be fit for.

The PRICES, for the last ten years, have been, for foals, five to ten pounds or guineas; for yearlings, ten to fifteen or twenty; for twoyearolds, fifteen to twentyfive or thirty; for sixyearolds, twentyfive to forty guineas.

GENERAL OBSERVATIONS. This breed of horses, viewed abstractedly in the
light

light in which they here appear, are evidently a profitable species of livestock *. The BREEDER has the foals to help to maintain the mares, and to stand, in some degree, against their first cost, their loss of work, and their decline in value, after a certain age. The GRAZIER is well paid for his year's keep. And the ARABLE FARMER has not their improvement in price, only, but their work, to make up, in some measure, for their extraordinary keep. While the BREWER, the CARMAN, the CARRIER, the COACHMAN, and the ARMY CONTRACTOR, are supplied with animals, which they want, and which they cannot breed or rear, with the same conveniency as the farmer.

Therefore, *so far as there is a market*, for sixyearold horses of this breed, *so far*, the breed is profitable to agriculture.

S 4

But

* It must not, however, be understood, that all the horses, bred in the Midland District, pass thro the stages, and fetch the prices, abovementioned. The breeder keeps them on, perhaps to the second stage; perhaps to the third; besides what he keeps for his own use, and brings to a less profitable market. While some going blind, others lame, and others dying of the various diseases, to which this species of animal is liable, are never marketable. What I mean to convey is a general idea of the most prevalent practice of the district.

But viewing the business of agriculture, in general, throughout the island, not one occupier in ten can partake of the profit; and being kept in agriculture, after they have reached that profitable age, they become, indisputably, one of its heaviest burdens. For, beside a cessation of *improvement*, of four or five guineas, a year, a *decline* in value, of as much, yearly, takes place. Even the brood mares, after they have passed that age, may, unless they are of a very superior quality, be deemed unprofitable to the farmer. Nevertheless, we see the majority of farmers, throughout the kingdom, working, even barren mares and geldings, down the stage of decline; though they know it will terminate in a ditch or a dog kennel.

REFERENCES TO MINUTES.

For an instance of their *affecting*, and thriving on, *clover*, see MIN. 17.

For a description of Ashby *stallion show*, 37.

For an instance of horses requiring *water*, at grass, 58.

For instances of the *staggers* in horses, 70.

For further instances of the *staggers*, 104.

For still more instances, see MIN. 116.

26.

C A T T L E.

I. THE BREED of this district is the LONGHORNED: a breed which appears to have occupied, a length of time, the central parts of the island.

In a general view, the old stock of the country, notwithstanding the singular efforts that have been made toward improvement, remains with little alteration. Each division of the district has still its own breed, distinguishable from that of the other divisions. There is a similar distinction, between the breeds of Staffordshire and Derbyshire, for instance, as there is between those of Herefordshire and Gloucestershire (see GLO. ECON.). The breeds of other divisions of the district have characteristics sufficiently strong to show, that the longhorned breed of cattle have, during some length of time, been the prevailing stock of the country; and that, view-
ing

ing the district at large, Leicestershire excepted, no *radical* change, nor any *obvious* improvement or alteration, has yet taken place. A striking instance, this, of the slow progress with which *general* improvements, in this department of rural economy, are made, even when carried on with every advantage.

But, notwithstanding the old stock may still be said to be in possession of the country, every division of it wears, at present, strong marks of improvement. WARWICKSHIRE, STAFFORDSHIRE, and DERBYSHIRE, may contend for some share of this beneficial change; and, in LEICESTERSHIRE, the improved breed may be said to have gained, already, a degree of establishment.

The HISTORY of this extraordinary improvement would be interesting and useful; as it might furnish useful ideas to the improvers of other breeds. All I am able to give is a sketch.

CRAVEN, in YORKSHIRE, has long been celebrated for a superior variety of the longhorned breed of cattle. From this source, it is well known, the LANCASHIRE

cows have been, and, I believe, still are drawn;—the flower of these celebrated cows originating in CRAVEN HEIFERS.

Formerly, the Craven breed seems to have extended, in a similar way, into WESTMORELAND, also an adjoining county. From Westmoreland, bulls and heifers of this breed found their way into the MIDLAND COUNTIES. The present improved breed is traceable, by the indisputable evidence of many persons still living, to what was here called the “true old Westmoreland sort*.”

It

* The district of WESTMORELAND, from whence these cattle were drawn, is its southernmost extremity; about Kirby-Lonsdale, on the borders of Lancashire, and in the immediate neighbourhood of Craven.

It is an interesting fact, that while this breed has been under the most anxious cultivation, in the Midland Counties, it has been declining in Westmoreland; where it is now, I understand, giving way to the TEESWATER BREED. See YORKSHIRE.

How is this to be reconciled? Is the Teeswater breed, for the soil and situation of Westmoreland, evidently superior to the Craven breed? or has the change been wrought, *solely*, by the Craven breed being debased, in Westmoreland, through the circumstances of the best of its bulls and heifers being drawn off, by the Midland breeders, while the best of those of the Teeswater breed have been brought into it?

This,

It is generally understood, here, that through this breed, and some fortuitous circumstances, rather than from any fixed principles of improvement, Mr. WEBSTER of Warwickshire (of Canley near Coventry) became, some forty or fifty years ago, possessed of a superior breed of cattle; and continued, during many years, the leading breeder of the Midland Counties*. I have, indeed, heard

This, among other changes of a similar kind, that have taken place in different parts of the island, form an interesting subject of enquiry.

* Prior to Mr. WEBSTER's day (or rather perhaps to the time Mr. W.'s stock became popular) a superior breed of cattle made its appearance, in *this* neighbourhood; at Linton; where one WELBY, a blacksmith and farmer, is said, by those who remember his day, to have been in possession of a very valuable breed of cows: which were said to have been originally from DRAKELOW on the banks of the Trent. Whatever might have been the quality of this breed, it was unfortunately cut off, by the distemper; or so far reduced by it, as to lose its establishment as a separate breed.

Since this article, and the above note, were written, I have learnt from the best authority (Mr. PALFREY, a near neighbour and intimate acquaintance of Mr. Webster), that Mr. W.'s breed owes its original basis to the same source: having brought with him, from the banks of the Trent, into Warwickshire, when he first settled there, some sixty or seventy years ago, six cows of SIR THOMAS

GRELEY'S

heard it said, by a man who has himself been a breeder of some eminence, “ that Mr. Webster had the best stock, especially of *beace*, that ever were, or (he believed) ever will be, bred in the kingdom.”

To this bold assertion, however, I am not ready to give full credit. I register it merely as an evidence of the high degree of excellency which Mr. Webster acquired. It is *improbable* that, after twenty or thirty years anxious attention, not of *one* man only, but of several, the breed, though excellent then, should not, since, have received some degree of improvement*.

This being as it may, Mr. BAKEWELL is well known to have got the lead, as a breeder of cattle, through the means of the CANLEY stock. His celebrated bull TWO-PENNY, that may be said to have first given the lead to Mr. B. was out of a cow, purchased,

GRESLEY's breed: from which cows, and bulls from Westmoreland and “ Lancashire,” he raised his celebrated stock.

* Another eminent breeder, on whose judgement I can better rely, is of opinion, that in beauty or utility of *form* they have received little, if any, improvement since Mr. Webster's day; but thinks that in *flesh*, the more valuable quality, they have been improved.

chased, when a heifer, of Mr. Webster, and was got by a bull from Westmoreland; a bull purchased in Westmoreland.

Mr. FOWLER of Oxfordshire (of Roll-right on the borders of Warwickshire), whose stock is at present in the first estimation, owes the superiority of his breed to the same source. His cows are of the Canley blood; and his bull SHAKESPEAR, the best stockgetter, I believe, the Midland District ever knew, was got by a grandson of Twopenny (out of a daughter of Twopenny), and a cow of the CANLEY blood.

Mr. PRINCEP of Derbyshire (of Croxall in this district) acknowledges to have raised his present noble herd of cows,—the first dairy of longhorned cows in the kingdom, I believe, for form and size taken jointly,—from a cow by the name of BRIGHT; purchased of the late Mr. Chadwick of Castle Bromwich: which cow was got by Mr. Webster's BLOXEDGE bull, that is spoken of, here, as being the purest fountain of the Canley blood*.

The

* The BLOXEDGE bull was out of a threeyearold heifer of Mr. Webster's best blood, but was got by what was called a "Lancashire" bull, (probably of Westmoreland

The PRESENT STATE of the IMPROVED BREED of the MIDLAND COUNTIES, which might be well distinguished by the CANLEY BREED, is the following.

Mr. BAKEWELL is in possession of many valuable individuals, males and females. His bull D. generally known by the name of the "mad bull," is a fine animal; and is a striking proof of the vulgar error, that breeding inandin, *weakens* the breed. He was got by a son of Twopenny, out of a daughter *and* sister of the same celebrated bull; she being the produce of his own dam. Nevertheless, D. is the sire of Shakespear, by another daughter of the same bull, and is probably the most *robust* individual of the longhorned breed; while D. himself, at the age of twelve or thirteen years, is more active, and higher mettled, than bulls in general are, at three or four years old.

This

or Craven origin) belonging to a neighbour of Mr. Webster. When a yearling, being unpromising, he was sold to a person by the name of BLOXEDGE. But turning out a remarkable good stockgetter, Mr. W. repurchased him, and used him several seasons. He was afterwards sold to Mr. Harrison of Drakenedge (Warwickshire), and Mr. Flavel of Hogshill (in this district), where he died.

This has long been considered as Mr. Bakewell's best bull; and has been kept; principally, for his own use. He was never let, except part of a season to Mr. Fowler; but has had individual cows brought to him, at five guineas a cow.

Mr. Bakewell's cows are of the finest mould, and the highest quality: and his HEIFERS beautiful as taste could well conceive them: clean, and active as does. Mr. B.'s exhibition of cattle would gratify the most indifferent spectator, and could not fail of being highly satisfactory to every lover of the rural science.

Mr. FOWLER's cattle are, at present, in the highest repute. His cows have long been considered as of the first quality:—of the best Canley blood. And his bull SHAKESPEAR, already mentioned, has raised them to a degree of perfection, which, in the opinion of the first judges, the breed of cattle under notice never before attained.

This bull is a striking specimen of what naturalists term ACCIDENTAL VARIETIES. Tho' bred in the manner that has been mentioned, he scarcely inherits a single point of the longhorned breed; his horns excepted.

When

When I saw him in 1784, then six years old, and somewhat below his usual condition; though by no means low in flesh, he was of this description.

His head chap and neck, remarkably fine and clean. His chest extraordinarily deep; his brisket bearing down to his knees. His chine thin; and rising above the shoulder points; leaving a hollow on each side, behind them. His loin, of course, narrow at the chine; but remarkably wide at the hips; which protuberate in a singular manner. His quarters long, in reality; but, in appearance, short; occasioned by a singular formation of the rump. At first sight, it appears as if the tail, which stands *forward*, had been severed from the vertebræ, by the chop of a cleaver, one of the vertebræ extracted, and the tail forced up to make good the joint: an appearance, which is found to be occasioned, by some remarkable wreaths of fat, formed round the setting on of the tail: a circumstance, which, in a *picture*, would be deemed a deformity; but, as a *point*, is in the highest estimation. The roundbones snug; but the thighs rather full, and remarkably let down. The

legs short and their bone fine. The carcase, throughout (the chine excepted), large—roomy—deep and well spread.

His horns apart, he had every point of a Holdernefs or a Teefwater bull. Could his horns have been changed, he would have paffed, in Yorkfhire, as an ordinary bull of either of thefe breeds. His two ends would have been thought tolerably good; but his middle very deficient. And I am of opinion, that had he been put to cows of thefe breeds, his ftock would have been of a moderate quality. But being put to cows, deficient where he was full (the lower part of the thigh excepted), and full where he was deficient, he has raifed the longhorned breed to a degree of perfection which, without fo extraordinary a prodigy, they never might have reached.

No wonder that a form, fo uncommon, fhould ftrike the improvers of this breed of ftock; or that a carcase, they had been fo long ftiving in vain to produce, fhould be rated at a high price. His owner, however, happened to be among the firft of his admirers, and could never be induced to part from him, even for a feafon; except to Mr.

PRINCEP;

PRINCEP; who had him two seasons, at the extraordinary price of eighty guineas, a season. A price at which no other bull has yet been let.

This extraordinary animal is now (1789) eleven years old, and firm in his constitution; but so lame, in his hind quarters, as to render him at present, and during the last season, entirely usefess.

His owner, however, has less to regret, as he is in possession of many valuable females of his produce; and of one male, now three years old, by the name of GARRICK*.

This bull was out of a cow, got by a bull of Mr. Bakewell, called the HAMPSHIRE BULL.

Thus, though we find Mr. Fowler, at present, in possession of the lead, he has evidently obtained it through the assistance of Mr. Bakewell's stock. But whether he has gained the ascendancy, by accident merely, or whether he had the better basis to

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build

* Mr. PAGET of Leicestershire (Ibstock in this district) is likewise in possession of a promising young bull of the purest of the Rollright blood; got by Shakespear, out of one of Mr. Fowler's best blooded cows. He is now a yearling; and leaps at five guineas a cow.

build upon, may be a moot point, difficult to determine.

Mr. Fowler's cows (about five and twenty in number) are many of them of an extraordinary mould; especially in the fineness of the forend, and the width and fatness of the hind quarters. A daughter and sister of Shakespear, being got on his own dam, is among the first of his herd: another evidence of the good effect of breeding from the same family*.

Mr. PRINCEP'S COWS, of his own breed, have been mentioned as being of a very fine quality: nevertheless, his present herd wears evident marks of improvement. Every cow and heifer of the Shakespear blood is distinguishable, at sight;—by the extreme fineness of the forend,—the width of the hips,—and the formation of the rump; an

im-

* Mr. Fowler conducts his business on the old principle of *selling*, not on the modern way of *letting*, his bulls. Such heifers, too, as his own dairy does not require, he sells, and at high prices. Mr. COKE of Norfolk has had all the cow calves, he could spare, during the last three or four years, at, I understand, ten guineas each; taking them while young. Mr. F. has now (October 1789) ten bull calves (all, I believe, by Garrick), for which, *it is said*, he has refused five hundred guineas.

impression which they have received with singular exactness.

Mr. Princep has two valuable bulls, by Shakespear: one of them out of the celebrated BRIGHT.

Beside the three herds that are here particularized, there are many others, in the Midland District, that are entitled to great attention; but which, for various reasons, I think may, with propriety, be omitted in this register. Therefore, what remains to be added to the foregoing account of the present state of the breed, is a GENERAL DESCRIPTION of its higher class of INDIVIDUALS.

The *foreend* long; but light, to a degree of elegance. The neck *thin*; the chap clean; the head fine, but long and tapering*.

The *eye* large, bright, and prominent.

The *horns* vary with the sex, &c. Those of bulls are comparatively short—from fifteen inches to two feet;—those of the few oxen that have been reared, of this breed, are extremely large; as two and a half to three

T 3

and

* A thick short head, with a snub nose, and a hollow face—provincially a “Dutch head”—is condemned, here, as a most hateful point.

and a half feet long:—those of the cows, nearly as long, but much finer; tapering to delicately fine points. Most of them hang downward, by the side of the cheeks, and, if well turned, as many of the cows are, shoot forward at the points*.

The *shoulders* remarkably thin and fine, as to bone, but thickly covered with flesh; not the smallest protuberance of bone discernible †.

The *girt* small, comparatively with the shorthorned and middlehorned breeds ‡.

The

* Too frequently, however, the double bend does not take place; the horns continuing to shoot downward, until they would reach the ground, or point inward, until they would gag the mouth which supports them, were not the points from time to time removed: and, in some individuals, while one horn is pointing to the ground, or winding under the jaw so as to prevent its opening, the other is shooting away from the head, or taking some other awkward direction: thus tending to disfigure, and destroy, the animal which nature ordained them to ornament and defend.

† The Dishley breed, I think, excels in this point: some of the heifers have shoulders, fine as those of race horses.

‡ Nevertheless, there are some individuals, more particularly, perhaps, of Mr. Fowler's breed, that are tolerably well let down in the girt.

The *chine* remarkably full, when fat; but hollow, when low in condition *.

The *loin* broad, and the *hips* remarkably wide, and protuberant †.

The *quarters* long and level; the *nache* of a middle width; with the *tail* set on variously, even in individuals of the highest repute ‡.

T 4

The

* This is considered, by accurate judges, as a criterion of good flesh; as the large, hard, ligatures, which in some individuals, when low in condition, we see tightly stretched along the chine, from the setting on of the neck to the fore part of the loins, is a mark of the flesh being of a bad quality.

† The protuberance of the *bones* of the hips, is a point, at present, in the first fashion; but is always, I observe, mentioned in the language of enthusiasm, not of reason. A wide loin, with the hips protuberating in *fat*, is certainly a most desirable thing. But what use, or even ornament, two *knobs of bone* can produce, is not so evident. In some individuals, they give an *artificial* appearance; as if the loin were a lid, and the hips handles to remove it. I can admire a *full* hip, and conceive its utility; but I am clearly of opinion, that there are many points of a bullock, better entitled to the breeder's attention, than a *protuberant* one; yet, it is more than probable, that, in the improvement, both of this and the shorthorned breed, points of real importance have been given up for these fashionable knobs of bone.

‡ The quarters of Shakespear have been described; those of the bull D. are not less remarkable: his tail appearing

The *roundbones* small; but the *thighs*, in general, fleshy; tapering, however, when in the best form, toward the gambrels.

The *legs* small and clean, but comparatively long*. The *feet* in general neat, and of the middle size.

The *carcase* as nearly a cylinder, as the natural form of this animal will allow: the *ribs* standing out full from the spine; receiving the entrails *within* them. The *belly*, of course, appears small †.

The

pearing to grow out of the top of his spine, rather than to be a continuation of the vertebræ; the upper part of the tail forming an *arch* which rises some inches above the general level of the back. This, viewing him as a picture, has a good effect; but, as a point, has a very bad one to the grazier: as tending to *hide* the fatness of the rump. It is remarkable, that in this, and many other points, the son and the sire are as dissimilar as if they had no consanguinity.

* More owing, however, to the gauntness of the carcase, than the positive length of the legs.

† The smallness of the belly is held out as a superior excellency. The viscera being lodged within the ribs is certainly such. But I cannot believe that a paucity of intestines is a valuable property of cattle: intestines are to them what roots are to trees. The ideas of *ossal*, and largeness of *bone*, have, *perhaps*, in more points than one, led the improvers away from perfection. This, however, by the way.

The *flesh*, of the superior class I am describing, seldom fails of being of the first quality.

The *hide* of a middle thickness.

The *color* is various: the brindle, the finchback, and the pye, are common: the *lighter* they are, the better they seem to be in esteem*.

The *fatting quality* of this improved breed, in a state of maturity, is indubitably good.

AS GRAZIERS' STOCK, they undoubtedly rank high.

AS DAIRY STOCK, however, their merit is less evident: dairywomen, here, and elsewhere, bear witness against them: nevertheless, the advocates for the breed assert their eligibility, in this character: some, indeed, go so far as to say, that a cow which
is

* This color, however, appears to be merely a matter of fashion. Nevertheless, it strikes me, that a *light* color of cattle is advantageous to the *grazier*. It is a fact, in the nature of vision, that *white* objects appear to the eye larger, than *black* ones, of the same size; and a light-colored bullock, no doubt, appears larger in a market, than a darker-colored one, of the same weight.

It may be remarked, in this place, that the six cows which formed the basis of Mr. Webster's breed, were *red*, and it is observable that some of Mr. Fowler's best cows are of that color,

is profitable, to the graziers, is likewise so, to the dairyman: a position that might be contradicted by a thousand evidences.

Nevertheless, it appears to me probable, that a cow may be so constitutioned, as to convert her aliment into milk, while milk is continued to be drawn from her, and, when the draught is stopt, *but not till then*, to convert the same current of chyle into fat: a versatility of constitution, however, which, *I believe*, does not belong to the breed under notice; whose propensity to fatness appears to be too great, to permit their lactescent powers to preserve the ascendancy, *long enough*, for the purposes of the dairyman.

AS BEASTS OF DRAFT, the carcase of the longhorned breed, viewed generally, renders them unfit: nevertheless, the carcase, of some of the best of the variety under notice, is sufficiently powerful, for the purpose of draft; while their natural activity, and cleanness of limbs, are very favorable to this purpose.

But the enormous size of the horns, of the oxen of this variety, would invalidate all their qualifications, were they greater than they really are. If they happen to take

a convenient form, they may be dispensed with; but standing out awkwardly, as they frequently do, they become an insuperable objection.

A method of preventing their growth, or even of checking their exuberance, would be a most valuable discovery; to those, especially, who are in possession of the breed, and wish to make them useful as beasts of draft*.

From this description, of the improved breed of cattle of the Midland Counties, it appears very evidently, that the PRINCIPLES OF IMPROVEMENT, laid down aforesaid, have, to this species of livestock, been judiciously applied. The UTILITY OF FORM has been strictly attended to: the bone and other offal are small; and the fore-end is light; while the chine, the loin, the rump, and the ribs are heavily loaded; and with flesh of the finest quality.

II. BREEDING. The males and females require to be treated of separately.

BULLS. Viewing the district, at large, its economy, with regard to male cattle, is the

* Perhaps, applying a cauterizing, to the buds of the horns, on their first breaking, might prevent their farther progress.

the same as that of other places. Dairy-men, in general, use their own bulls, generally of their own rearing; and smaller cowkeepers employ those of their neighbors. But dairymen, who pay a closer attention to their stock, purchase their bulls, or hire them by the season, of bullbreeders; of men who rear, perhaps, five to ten bulls, yearly: the superior breeders, for letting; the inferior, for sale.

The practice of *letting*, this species of male stock, originated, probably, in this country, and in the practice of Mr. Bakewell, about twentyfive years ago.

In the spring, previously to the season of business, the breeders have their private *shows*; and beside these, as has been intimated aforegoing, there are public shows; more, however, for the purpose of sale, than of letting.

The *prices* given for bulls, *by purchase*, run from five to a hundred pounds; *by the season*, from ten to fifty or sixty; *by the cow*, from half a crown to five guineas.

The let bulls are *sent out*, in April, or the beginning of May; being generally led in halters; or driven singly; and are *re-*
turned,

turned, at the end of the season, generally in August, in the same manner.

With respect to the *age*, at which bulls are suffered to leap, the practice of this district differs from that of most others; where from two to four years old; namely three seasons, is the ordinary period of employment. But, here, they are pretty commonly allowed to leap, while yearlings; and, if good stockgetters, are kept on so long as they are effective; perhaps till they are ten or twelve years old. If they grow vicious, they are kept wholly in the house; if they throw gates or break pasture, they are humbled by a "bull chain," fastened ingeniously to the nostrils.

It is observable, that the bulls of this improved breed are not unfrequently, even while youthful, deficient in vigor: the hired bulls being sometimes returned, prematurely, on this account.

This might be laid hold of as an argument against the practice of breeding, inandin. It is, however, more probably owing to a different cause.

A handsome bull,—a bull nearly perfect in all his points,—is most difficult to be bred:

yet

yet the breeder's object is to render him, to the eye at least, as near perfection as possible. He is, therefore, made up for the show, by forcing food; as well to evince his propensity to fatness, as to hide his defects; thereby showing him off, to the best advantage: the consequence of which is, being taken from this high fare, and lowered, at once, to a common cow pasture, he flags.

Hence, it is become a practice of judicious breeders, when their bulls are let early enough, to lower them down, by degrees, to ordinary keep, previously to the season of employment.

BREEDING COWS. There is only *one* instance, I believe, of cows being kept solely for the purpose of *breeding*: the *dairy* being here, as every where else, a joint intention.

Such as are not employed in the rearing of calves, ought certainly, in common good management, to be made to pay for their maintenance, by *milking*, or by *working*: the last a use to which Mr. Bakewell alone, perhaps, has put them.

One circumstance in the management of breeding cows, practised by leading breeders at least, is noticeable. In the practice of less spirited and less judicious breeders, a cow or heifer, if she happen to miss the bull, is proscribed, let her form and blood be what they may; and, as soon as her milk is obtained, is condemned, even for the first offence.

This, when dairying alone is the object of cowkeeping, is undoubtedly judicious; but, when breeding is a principal or even a joint object, as it is in the practice of most dairymen, such a conduct may be highly blameable. For though it may be easier to breed handsome good cows, than bulls of that description; yet, when we consider, how much of the success of breeding depends on the female, it is evidently a want of common policy, to cut off a valuable cow, for one miscarriage.

If she do not breed this season, let her maintain herself by working, until the next. Mares are kept, year after year, without breeding. And if mares are found nearly equal to geldings, in work; why should not cows be nearly equal to oxen, in the same intention?

DAIRY COWS. Under this head, I shall consider cows, abstractedly, as they relate to the DAIRY.

In the CHOICE OF COWS, *dairy farmers* are guided by criterions, different from those which have been enumerated, as the favorite points of *graziers*, and *modern breeders*.

The DERBYSHIRE COW remains the favorite of the old "dairiers." They argue, that the grazier and the dairyman, distinctly considered, require different animals, to suit their respective purposes. The dairier's object is *milk*; the grazier's *beef*; and it is a trite remark, among dairymen in different districts, that a cow which "runs to beef" is unprofitable to the dairy: for, notwithstanding the excellency of her bag, and the plentifulness of her milk, presently after calving, her natural inclination to *fleshiness* draws off her *milk*: while a cow that is, by breed, or natural constitution, prone to *milk*, will supply this, at the expence of her *carcase*, let her pasture be ever so plentiful.

These popular opinions, however, though they contain much truth, are not altogether
well

well founded. They hinge on a false principle. Cows are useful, and in a great degree necessary, in a twofold capacity: as dairy cows, and as grazing stock. The dairyman and the grazier *cannot* have distinct animals: one and the same individual *must* serve both their purposes. And a breed of cows fit for the grazier only, is, in a general light, not less eligible, than a breed which is fit only for the dairyman.

The Derbyshire cows are unprofitable, as grazing stock. They have neither beauty nor utility of form; being loaded with offal of every kind. The head thick, the chap and neck foul; the bone proportionably large, the hide heavy, and the hair long: even the bag is not unfrequently so overgrown, as to be almost hid in hair; a point of milking cows, to which dairymen, of most districts, have an objection: this however only serves to show, that popular criterions are seldom to be depended upon. Were the flesh and fatting quality, of the Derbyshire cows, equal to their quality, as dairy cows, the hairiness of their bags might well be overlooked.

The STAFFORDSHIRE COWS bear a different characteristic. Taking them together, they are rather adapted to grazing, than the dairy; most of them being tolerably clean. But, in general, they are too light in their carcases, to be eligible, either as dairy or as grazing stock.

Nevertheless, there are individuals of this breed; or rather, perhaps, of a breed between this and the Derbyshire; that may be said to be at once eligible, as dairy cows and grazing stock. At least, they come nearer my idea of what a cow ought to be, than any other breed or variety of the *longhorned* cattle, I have yet had an opportunity of observing.

Whether the individuals, now under notice, have or have not been produced, by a mixture of the Staffordshire and the Derbyshire blood, they are the most prevalent on the BANKS OF THE TRENT, which divides the two counties: it is, indeed, the breed which is there found, more particularly on the Derbyshire side, from Walton towards Stanton, which falls under this description.

The

The following are accurate dimensions of a middleaged cow of this kind; somewhat low in flesh, and young in calf.

Height at the withers, four feet two inches and a quarter.

———— of the brisket, nineteen inches.

Smallest girt, six feet five inches.

Largest girt, seven feet eight inches and a half.

Length from forehead to nache, seven feet three inches.

———— from shoulder-knob to the center of the hip, three feet eight inches.

———— from the center of the hip to the out of the nache, twentyone inches.

Width at the shoulders, twenty inches.

———— at the hips, twentytwo inches.

———— at the nache, thirteen inches.

Length of the horns, twentyfour inches; their width from point to point, three feet four inches.

The forend fine, long, and standing low.

The head small, and the neck thin, but deep, according with the depth of her bosom.

The shoulders fine; the ribs full; and the loin broad.

The thighs remarkably thin below, as if to give room to her bag,—large, clean, and bladder-like; with long teats, and remarkably large elastic milk veins; furnishing an ample supply of milk.

The legs short, with the bone fine ($7\frac{1}{2}$ inches girt).

The flesh good, and the hide of a middle thickness.

The color a “brinded mottle,” with a “finch back,” and white legs.

In temper remarkably calm, “gentle;” a quality of considerable value, in a cow intended for the pail.

The principal distinction, which is observable, between the form of what is here spoken of as a *dairy* cow, and that of a cow of the modern breed, or what is more generally understood by a “good grazier’s cow,” is, the former is more roomy and better let down in the chest; the latter, better topped; fuller on the chine and loin; and, generally, fuller in the thigh. Both of them are clean, in the forend, and shoulder; the bone, in both, is fine; the flesh of both good (but that of the modern breed indisputably better); and their hides of a middle thickness.

But

But the most material difference, and that which determines the *dairyman* in his choice, is, the one loses her milk, a few months after calving; the other, if required, will milk the year round.

The PLACES OF PURCHASE, for dairy cows, are the fairs of the district, and, during the spring months, a weekly market at Derby; to which cows, fresh in milk, are brought, chiefly by drovers, and, mostly, *without their calves*.

At the fairs, and in the ordinary practice of this district, cows are almost invariably sold as *incalvers*; frequently at the point of calving; sometimes dropping their calves on the road. I recollect few if any instances, of seeing cows at market, with *calves at their feet*; agreeably to the ordinary practice of most other districts.

The *price* of an incalver of the description last recited, has been, on a par of the last ten years, about ten pounds, or guineas.

The MANAGEMENT OF DAIRY COWS. In their *summer* management, I have met with nothing of superior excellence, in this district. They are turned to grass, about

Mayday ; allowing from an acre and half, to two acres, to a cow ; being generally kept in one and the same pasture, until aftergrafs be ready to receive them ; and have turneps thrown to them (by those who grow turneps) on grafs land, in autumn.

In this district, one instance of practice occurred to me, which requires to be registered ; namely, that of a dairy, of fourteen or fifteen cows, being principally *dried off together*, on one day ! (in the middle of December ;) preserving two or three, only, in milk, for the family, during the winter months ; keeping these at hay ; putting the dried cows to straw ; for which purpose, only, they were dried off, in this remarkable manner.

It is observable, however, that this practice can be eligible, only, when “ cows come well in together : ” to effect which they are “ bulled as fast,” that is to say as near together, “ as possible.”

Unnatural as this expedient will no doubt be deemed, by many, it may, nevertheless, in some cases, be eligible : all I shall say farther of it is, that had I not observed it, in the practice of one of the oldest and best managers

managers in the district, I should not have registered it*.

In the *winter* management of dairy cows, one circumstance may be noticed: that of their being frequently kept (in conformity to a modern practice adopted by some leading men) in sheds, which have been described under the head BUILDINGS, continually throughout winter, from the time of their being taken up, in autumn, to that of their being turned to grass, in the spring, generally four months,—*without any exercise!*

Some discerning individuals, however, have already discovered the inconveniencies of this practice,—especially that of their hoofs cracking,—let them loose in a yard, a few hours every day, to moisten their feet, as well as to exercise their legs, and clean their coats.

The DISPOSAL OF COWS. In what might be called the natural practice of the district, dairy farmers not only *rear* but *fat* their own cows. One of the largest farmers in the district told me, that “he never bought a cow in his life”! he rears fifteen, eighteen,

* Mr. LAKING, of Hall End, Warwickshire.

or twenty calves, yearly, and fats his own stock; or, for want of room, sells them to graziers.

This forms a beautifully simple plan of management; well adapted to a middlefoil farm; and especially eligible for gentlemen, and others, who are deficient in judgement, and unacquainted with markets. The proportion of grass and arable being determined upon, and the quantity of stock ascertained, the machine is regulated; and nothing but a due attention to the number of heifers, annually reared, is wanted, to keep it in continual and uniform motion. A certain number of dairy cows, with a lot of fatting cattle, and another of young stock to follow them, in summer, and to eat straw, in winter. No going to market, but with corn, dairy produce, and cullen cows. A plan of general management, beautiful in theory; and, if one may judge from the comfortable independency, which the person above alluded to is possessed of, through a perseverance, by his father and himself, in this course of management, it is eligible in practice.

III. REARING CATTLE. The rearing of cattle is confined, here, to BULLS and HEIFERS, for breeding and the dairy: there is not, in ordinary practice, a STEER reared in the district; excepting some few, of late years, for the purpose of draft.

The METHOD of rearing, here, differs little from that of other districts; except in the rearing of BULL CALVES, and sometimes high-bred heifers, by suffering them to remain at the teat, until they be six, nine, or perhaps twelve months old; letting them run, either with their dams, or, more frequently, (especially where the dairy is an object,) with less valuable cows or heifers (bought in for the purpose, and, when the intention is fulfilled, sold, or fatted): each cow being generally allowed one male calf, or two females.

The effect of this practice is a quick growth; and, perhaps, like rearing vegetables, in a rich soil, the practice may assist in meliorating the constitution, and enlarging the frame. Be this as it may, the growth of calves, reared in this way, is strikingly rapid.

The

The best method of dairymen is this; The calves suck, a week or a fortnight, *according to their strength* (a good rule): new milk, in the pail; a few meals; next, new milk and skim milk mixt, a few meals more: then, skim milk alone; or porridge, made with milk, water, ground oats, &c. and sometimes oilcake; — until cheefemaking commence: after which, they have whey porridge, or sweet whey, in the field; being careful to house them, in the night, until warm weather be confirmed.

Turneps are not thought of, as a food of calves; nor, in the ordinary practice of the district, is either corn, oilcake, or linseed in use; milk, whey, hay, and grafs, being the sole food of rearing calves*.

The *time of rearing* extends, in this district, through the winter months; but is confined, in a great degree, between the beginning of December, and the latter end of March.

In the treatment of YOUNG STOCK, I find little, in the practice of this district, that requires particular notice.

The

* Until autumn, when turneps are sometimes given.

The bulls, in the common practice of dairymen, are suffered to leap, while yearlings; namely, at fifteen to eighteen months old; and the heifers to admit them, while two years old; bringing them into the dairy, at three years old: generally, keeping them from the bull, until late in the summer,—as the latter end of July, or the beginning of August;—it being a pretty general opinion, that heifers should come in, at grass. Beside, by this practice, one bull serves both the dairy cows and the heifers. I have known a dairy of twenty or thirty cows, and ten or twelve heifers, served by a “calf;” a yearling bull.

In the practice of superior breeders, heifers are sometimes kept from the bull, until they be three years old; bringing them in, at four: especially in that of their enterprizing leader; in whose superior practice, maiden heifers, as well as dry and barren cows, are occasionally enured to harness: a laudable example, that might be profitably followed by every other breeder of cattle.

IV. FATTING CATTLE. The Midland District, viewed collectively, is a GRAZING: COUNTRY.

COUNTRY. South and East LEICESTERSHIRE, and much of NORTHAMPTONSHIRE, fall entirely under this description. WARWICKSHIRE inclines more to the dairy.

The DISTRICT of the STATION contains a mixture of the two. There is one man, in this neighbourhood, who fats not less than two hundred head, annually. Most large farmers, beside the cullings of their own dairies, purchase cattle, for the sole purpose of fattening:—several of them grazing fifty head.

The SPECIES of grazing, which is here practised, is, in a manner solely, SUMMER FATTING, ON GRASS. A small number are finished, with HAY and KEPT PASTURE: and a few individuals practise STALLFATTING,—with HAY, and what is called “CUTMEAT;” namely, cats in straw, cut in a chaff machine; and some, but very few, with OILCAKES*,

The

* FATTING CATTLE ON GRAINS. At Burton, in this district, several hundred head of cattle, mostly cows, are annually fatted with HAY and GRAINS; the produce of the breweries of BURTON ALE; which being brewed of singular strength, and, in the ordinary practice, little small-beer

The practice of SUMMER GRAZING is, alone, entitled to particular notice: and this requires to be registered in detail.

The SITUATION and SOIL have been described, as forming a rich middleland district: a description of country which is common to every quarter of the kingdom.

The HERBAGE, too, appears foregoing: mostly a kind of temporary sward, which has been described; with a small proportion of old rough grassland.

The descriptions of CATTLE, are *cows*, old or barren, and *beifers*, which have
missed

beer being made after it, the grains are of a very superior quality. They are mostly used, fresh, from the vats—sometimes warm—but never hot. When a redundancy happens, the overflowings are laid up, in casks and bins, covered up with mold. With these stale grains, malt dust is generally mixed. The usual quantity of fresh grains is a bushel, a day; with about half a hundredweight of hay, a week. From five to six months is reckoned a moderate time, for lean cows, to get good meat, with this keep. The price of grains threepence to fourpence a bushel.

In the winter of 1785-6, when hay, at Burton, was excessively dear—5s. a cwt. ! a principal part of the produce of these breweries was bought up, by cowkeepers, and others in the neighbourhood,—at fourpence a bushel.

mised the bull: all of them of the long-horned breed of the district, or from the more northern counties of Cheshire, Lancashire, &c. There are not, in the practice of *this* district, any oxen fatted; except some few *Welsh runts*; and except, of late years, some *Irish bullocks*; and these, by a few individuals, only.

PLACES OF PURCHASE, in *this* district, are the spring fairs of the neighbourhood; to which they are brought, by dairymen, who do not “graze,” or by drovers,—who pick them up in the district, thereby robbing the dairymen, or the graziers, of part of their profit,—or who bring them from a distance, performing, in this case, the office of useful men.

In South *Leicestershire*, and the more grazing parts of the district, where a sufficient supply of cows cannot be had to stock their “feeding picces,” the graziers draw cattle from almost all quarters of the kingdom, sometimes going, in a scarce time, as 1786, to the very seacoast of Wales, to buy them; posting, from fair to fair, for a week or a fortnight, without returning home; riding many hundred miles, perhaps, at a journey:
a toil

a toil which nothing but the hope of “ buying bargains ” could enable them to go through. In general, however, they are brought, by drovers, into the markets of the district*.

The POINTS most observed, by the Midland graziers, would be difficult to define, in detail. Those already held out, as the desirable points of a modern breeder, may be taken as those which are desirable to a modern grazier; the modern breed being, indubitably, eligible, in a superior degree, as grazing stock. Nevertheless, there still remain some few oldfashioned graziers, who prefer, or affect to prefer, *bone to blood*.

GENERAL REMARK. It may be said, however, of the graziers of this district, as of those of every other, that they are led to their choice, not by any fixed principles, or defined points, but by INTUITIVE IMPRESSIONS, received from GENERAL APPEARANCES.

An

* At present (1789) the markets, and the grounds of the more *grazing* parts of the district, are filled chiefly with IRISH CATTLE, of all sizes; from thinfleshed lathy steers, of forty to fifty stone, to large heavyfleshed oxen, of seventy or eighty.

An experienced grazier,—one who has been accustomed to attend fairs and markets;—knows, at sight, (or by the assistance of the slightest touch), whether a cow or a heifer will suit him. Her general form and “looks” please him. She is everywhere clean; has little offal about her. Her eye is full and vivid; her countenance brisk; her skin alive; and her flesh mellow. All together, she resembles many which he has grazed, with success. While he rejects another; because he recollects no instance of her likeness having done well; but, on the contrary, many which she resembles, having turned out unprofitably.

The art of purchasing is principally acquired, by practice. The judgement is formed, not altogether by a scientific analysis, in detail; but extempore; being assisted, in great part, by the memory. And we may venture to say, that no man can acquire an accurate and quick judgement, such as is requisite in purchasing cattle in a market, without some considerable share of practice.

Nevertheless, I may repeat, here, what I have said in another place, on the same subject,

subject*, — that the groundwork of this art, like that of every other, is reducible to science; and that the principles being ascertained, the student will be enabled to acquire the requisite judgment, *much sooner*, than he could without such assistance.

The MANAGEMENT of grazing stock is the same, or nearly the same, here, as in other districts. Each ground, provincially “feeding piece,” has such a number of *cattle and sheep* turned into it, as, from experience, it is known it will carry; allowing about one cow and two sheep, to two acres; more or fewer according to the quality of the land; or its state of productiveness †.

The *shifting* of stock does not enter into the practice of this district: consequently, the practice of grazing, by headstock and followers, is not here in use. The stock is turned in, at Mayday, or the individuals as they are purchased, and remain, probably in the same piece, until disposed of: the only attentions bestowed, upon this class of stock, being those of giving an eye to the fences,

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the

* GLOUCESTERSHIRE.

† From ten to fifteen cows, and fifteen to twenty sheep, to twenty acres.

the pasture, and the water,—of having a bull in the piece among cows*,—and of attending to the health of the individuals.

One circumstance, in the treatment of grazing stock, in the Midland District, requires to be noticed. This is a want of RUBBING POSTS; especially in the more grazing parts of the district; where, to speak with little latitude, there are townships without a tree in them, or a post, of any kind, for the cattle to rub against. In *this* district, hawthorns, and other single trees, are common in most large pieces †.

Another circumstance, however, and which is common to the district, reflects credit on the Midland graziers. This is the number of
of

* To induce them to rest more quietly; and not under the generally received idea, that cows feed better—fat faster—for being in calf. Mr. Princep's cow (see MIN. 119.), though she fattened extremely fast, and to an extreme degree of fatness, was not with calf.

† RUBBING POSTS. In Northamptonshire, they are pretty common; but there, as in most other places, they are merely a straight naked post. Whereas a rubbing post cannot be too rugged: a large bough, with the branches left two or three feet long, is more natural, and affords the cattle more *amusement*, than a smooth hewn-post. See NORFOLK. MIN. 66.

of PENS observable in the grazing grounds : for almost every considerable feeding piece has a pen ; either exclusively, or jointly with adjoining pieces ; the same pen sometimes serving three or four pieces. These pens, which are made high and stout enough for cattle, and close enough at the bottom for sheep, are not only useful, on many occasions, as receptacles of stock ; but likewise are convenient as places of communication, between field and field*.

X 2

MARKETS

* GRAZING IN A WET SEASON. I cannot with propriety omit mentioning, in this place, an incident of practice ; which has occurred to me, this autumn, 1789,—a very wet year.

The general complaint is, that grazing stock ; though they have this year rolled in grass, have not done well ; Mr. HENTON of Hoby (in Leicestershire) being singular in saying, that his feeders have done tolerably. Indeed, his stock corroborate his assertion. He had a lot of cows at Loughborough, the 12th of August, the fattest in the show.

But his management is more remarkable than his success. He “ foddered them with hay all the wet weather :” that is, HE MOWED THE BROKEN GRASS FOR THEM ! beginning under the hedges and continuing to mow the coarsest patches, throughout the piece.

The first day (the day it was mown) the cattle seldom touched it ; but the second or third day, they fell to it freely ;

MARKETS FOR FAT CATTLE. On the subject MARKETS, it has been said, that the southern parts of the district send their fat stock to *Smithfield*; the northern, to *Rotherham*; this quarter of it, to *Birmingham*, and the other *manufacturing towns*. Of the last I shall principally speak.

It is observable, that the grazed cattle of this district are sold, much underfat; unfinished: mostly in that state, in which cattle, in Norfolk and Herefordshire, are put to fattening.

This, however, is not intended as an argument against the Midland practice of grazing: the practices may be said to originate in the markets, for which the stock is intended.

freely; eating it, "between whiles," in preference to grass. "In the morning it was always the first thing they filled their bellies with"!

The cattle having eaten up the more palatable parts of the herbage, the thistles and other offal were raked up, and carried off the ground: most excellent management!

His stock consisted of about sixty head. At first, one man, only, was employed in mowing, &c. But, before the rainy weather ceased, he set on another man.

What an admirable thought! that which other men suffered to stand waste in itself, an encumbrance to the ground, and a nursery of weeds, was converted to a food, more nutritious, in a wet season, than the best of the standing herbage.

intended. In Smithfield, cattle sell at prices proportioned to their degrees of fatness. While in the markets of this district, even in that of Birmingham, where the manufacturers live in a style of extravagance, scarcely any difference is made, between beef that has been highly finished, and that which is in a state of forwardness—fleshy—“meaty.” This being the case, the butcher will give as much, or nearly as much, by the pound, or any other weight, for what are called “meaty things,” as for those which are fat.

The *places of sale* are the grazing grounds, and the fairs of the neighbourhood; where they are bought, chiefly, by butchers from Birmingham, with a proportion from Wolverhampton, Walsal, &c. and, sometimes, from Manchester; and some few are driven out of this district, to London. Birmingham may, however, be considered as the grand mart of the district*.

X 3

In

* Yet, extraordinary as it really is, the fairs of BIRMINGHAM are among the worst in the country, for fat stock! the butchers giving the graziers no encouragement to bring their stock home to them: rather preferring the toil of riding twenty, thirty, or perhaps forty miles, from home

In regard to the art of SELLING fat cattle, though it is not, perhaps, equally difficult as that of buying, it requires, nevertheless, great judgment, and of course great or long practice, to conduct it with propriety. Not the weight of the quarters, only, but the quantity of tallow, ought to be accurately estimated.

In judging this, the grazier has one advantage over the butcher: he knows the time which his cattle have had, and how they have *done*, during the time they have been at full keep; and another, he sees them, from time to time, himself, and perhaps takes the opinion of his friends. The butcher, however, must, in the nature of his employment,

home to seek it! spending a principal part of their time, and their profits, in an employment, truly ridiculous.

How convenient it would be to the grazier, as well as to the butcher, to have a WEEKLY MARKET, a *Smithfield*, at or near Birmingham! To the grazier, in thereby having a constant and certain market, whenever he wanted either keep or money: and to the butcher, in saving time and travelling expences. Yet the few which are taken there, at present, are frequently drove out unfold!

But, at present, the day, Thursday, the ordinary market day, is improper: Monday or Tuesday would be a more suitable day: and SUTTON, perhaps, the most suitable place.

employment, acquire a kind of judgment, which the grazier cannot readily arrive at. Nevertheless, there are graziers will judge, with great accuracy, both as to weight and tallow; while, incredible as it may appear, there are few butchers who are accurate judges.

On the whole, we may venture to say, that THE ART OF GRAZING rests, principally, on JUDGMENT IN BUYING AND SELLING: not in this district, only, but in the other districts I have examined. The mysteries of *management* are few. Nevertheless, it is the most dangerous department of rural affairs, the INEXPERIENCED can embark in. Jobbers and butchers are equally hackneyed, in the ways of dealing; and it requires some practice, to be a match for them. Nevertheless, by attention and perseverance, a sufficient judgment may, in no great length of time, be acquired, to rise to a par, with the generality of graziers. For, although there are some few, who are deeply versed in the profession, the bulk of graziers are by no means proficient in the art.

PRODUCE OF FATTING CATTLE. There are, not unfrequently, instances of *heifers* doubling their first cost, by the summer's grafs. I have known an instance of two heifers doing this. But they were bought under particular circumstances: namely, of a grazier, who, through want of judgment, thought them "weak constitutioned:" he, therefore, sold them to another grazier, better versed in the art of purchase, for eleven pounds; and, the same day, bought four cows, at ten pounds each. The former were sold, in October, for twentytwo pounds; the latter, at the same time, for thirteen pounds each. I mention this circumstance (of a thousand others that might be adduced), to show how much of the profits of grazing depends on judgment, in buying-in stock.

To speak generally of the ordinary produce of the district;—five to eight pounds is the par price of lean barren cows, in the spring; and nine to twelve pounds, a good price for a fat cow, in autumn: thus leaving four or five pounds for the summer's grafs, interest of money, hazard, market expences, and attention. This, however, is reckoned

oned great profit. Fifty shillings, or three pounds, is a more ordinary profit of "common graziers:" that is, of men whose practice is confined, and whose judgment is secondary: THE PROFITS OF GRAZING RESTING, PRINCIPALLY, ON JUDGMENT IN BUYING AND SELLING.

REFERENCES TO MINUTES.

For an instance of the high price of *lean cattle*, with reflections, see MIN. I.

For an instance of a *bad year*, for graziers, 53.

For opinion on the present *scarcity* of stock, 110.

For observations on bullocks at turneps, 118.

For an account of an extraordinary *fat cow*, 119.

For an instance of practice, in grazing *Scotch runts*, 121.

For further observations on the *scarcity* of stock, and on *Irish cattle*, see MIN. 122.

27.

DAIRY MANAGEMENT.

WARWICKSHIRE, almost throughout, comes under the description of a dairy country; and, in the DISTRICT of the STATION, the dairy forms a considerable branch of the business of almost every farm. The outlines of practice, therefore, are requisite to be traced.

The SIZES of dairies, here, are seldom large: fifty cows form the largest in the district: thirty are considered as a large-sized dairy: twenty a middling size.

In taking a view of the dairy of this district, it will be necessary to separate the three principal branches:

Calves;

Butter;

Cheese.

I. FATTING CALVES. The male calves, except such as are reared for breeding,

ing, are, as has been intimated, almost invariably fattened.

Calves are, here, fattened at the TREAT; and, in the early part of the season, are kept to a good age. But cheefmaking once begun, they are butchered as they drop: at not more, perhaps, than three or four days old; nor at more, perhaps, than three or four shillings price. The market for them is the manufacturing towns, and the collieries, of Staffordshire.

The only circumstance relative to the MANAGEMENT OF FATTING CALVES, which requires notice, is an expedient used, by some individuals, but not, I believe, in universal practice, to make them "lie quiet:" more especially during a temporary scarcity of milk; which will sometimes take place. In this case, balls, made of wheat flour, and a sufficient quantity of gin to form it into a paste, are given them; three balls, about the size of walnuts, being given, a quarter of an hour after each meal. The effect is, that instead of wasting themselves by incessant "bawling," they rest quietly; sleeping a principal part of their time. By a little custom, the calves get fond of these

PASTE BALLS; eating them freely out of the hand; a proof of their being acceptable to their stomachs. As an *expedient*, they are evidently eligible; and may be of service to a restless calf; even when milk is plentiful. This, however, by way of intimation.

II. BUTTER. The only idea, which I met with respecting MILK BUTTER, and which is entitled to a place, here, is that of doing away the *rancidness of turnep butter*, and the *bitterness of barley straw butter*, by a most simple and very *rational* mean. Instead of putting the cream, immediately as it is skimmed off the milk, into the jar or other retaining vessel, it is first poured upon *hot water*, and, having stood till cool, is skimmed off the water! a new idea: but I will venture to repeat, a most rational one; though I have not myself had an opportunity of proving it.

In the same dairy, in which the above expedient is used, a method of improving the quality of WHEY BUTTER is practised. This improvement is effected, by *scalding* each meal of cream, as it is taken off the whey; by hanging it over the fire until

“scalding

“scalding hot;” being careful not to let it boil. This too, I register as a simple and rational process, and not as one whose efficacy I have proved by my own experience. I register them, however, on an authority which I have no reason to doubt.

III. CHEESE. This is the grand object of the Midland dairy. Very considerable quantities are annually made; particularly, as has been observed, in Warwickshire, and in this neighbourhood,—where cheese of a very fine quality is not unfrequently produced.

It will, therefore, be proper to take a general view of the subject: for although, after the recital of the practices of Gloucestershire and Wiltshire, much important information cannot be expected; yet, it is more than probable, some interesting circumstances will arise.

The particulars which, in this case, require to be noticed, are

Soil,	Rennet,
Herbage,	Running,
Managers,	Curd,
Species of cheese,	Cheese,
Time of making,	Markets,
Quality of milk,	Produce.
Coloring,	SOILS.

SOILS. For an account of the soils of the best dairy parts of *this* district, see MIN. 55, in which it appears that a *cool* soil is favorable to cheese.

Nevertheless, I received an idea, here, from a most experienced and intelligent manager *, that a very cold “weak” soil is improper for the dairy: that is to say, a soil may be *too cool* for the purpose. The cheese it affords, though good in quality, is found deficient in quantity. His own farm being principally of that description of land, he has, during the latter part of his life, made *rearing* his principal object; considering his dairy merely as being subordinate to that end.

HERBAGE. An account of the herbage of the cheese farms of this district will likewise appear in MIN. 55.

What remains to be registered, here, is the circumstance of cheese being, not unfrequently, made from *new leys*; even of the first or second year; while they consist chiefly of *red clover*, with, perhaps, a mixture of *raygrass*; yet from this cultivated herbage, provided *trefoil* make no part of it,

* Mr. LAKING, of Hall End.

it, good cheefe is made. A fact which dairy farmers, in some districts, would not readily credit.

MANAGERS. A striking instance, of the folly of dairymen being inattentive to the business of cheefemaking, occurs in this district; where a dairy farmer declares, that, one year, he lost forty pounds, by the mismanagement of his dairywoman. This led him to an investigation of the business, himself, and this to a sufficient degree of superintendance, to prevent, in future, a similar loss. See GLOUCESTERSHIRE, &c. on this subject.

SPECIES OF CHEESE. The only "*factor's* cheese," made in this district, is *thin cheese*, from *new milk*. The size, that of single Gloucestershire, or somewhat thicker*.

For

* The CHEESE VATS of this district are merely "hoops" of ash, with a boarden bottom. I do not recollect to have seen one instance of "turned vats" being in use. The diameter about fifteen inches. The depth two inches more or less.

The "FILLET" of this district is of wood: a long shaving or splint of ash; an inch or more wide, and an eighth of an inch or more thick; not formed into a hoop, but left open, with the ends tapering thin, and overlapping several inches. The part of the cheese, which rises above
the

For “*family cheese*,” more or less *skim milk* is used; and sometimes, I understand, *all* skim milk. But *this* not being conformable to the prevailing custom of the country, the practice is looked upon as *fordid*, and waste becomes the necessary consequence.

LEICESTERSHIRE is, at present, celebrated for its “*cream cheese*,” which is generally known by the name of STILTON CHEESE.

This species of cheese may be said to be a modern produce of the Midland District. Mrs. Paulet of Wimondham, in the Melton quarter of Leicestershire, the first maker of Stilton cheese, is still living.

Mrs. P. being a relation, or an acquaintance, of the well known Cooper Thornhill, who kept the Bell Inn, at Stilton (in Huntingdonshire, on the great north road from London to Edinburgh), furnished his house

with

the vat, being tightly embraced with the fillet, its lower edge is entered within the vat; and, a broad cheese board put over the whole: the fillet and the upper part of the cheese sinking down together, into the vat.

1789. *Tin fillets* are now become prevalent: an admirable improvement. Some care, however, is requisite, it seems, to prevent their rusting.

with cream cheese; which, being of a singularly fine quality, was coveted by his customers; and, through the assistance of Mr. P. his customers were gratified, at the expence of half a crown a pound, with cream cheese of a superior quality; but of what country was not publicly known: hence it obtained, of course, the name of Stilton cheese.

At length, however, the place of produce was discovered, and the art of producing it learnt, by other dairywomen of the neighbourhood. Dalby first took the lead; but it is now made in almost every village, in that quarter of Leicestershire, as well as in the neighbouring villages of Rutlandshire. Many tons are made, every year: Dalby is said to pay its rent with this produce, only.

Thus, from a mere circumstance, the produce of an extent of country is changed; and, in this case, very profitably.

The sale is no longer confined to Stilton; every innkeeper, within fifteen or twenty miles of the district of manufacture, is a dealer in Stilton cheese. The price, at present, tenpence a pound, to the maker; and

a shilling to the consumer; who takes it at the maker's weight.

Cream cheese being an article of luxury, merely, and a species of produce which cannot become of general utility to agriculture, the art of making it does not come within the plan of this work; I therefore proceed to the manufacturing of milk cheese, agreeably to the practice of the district of the station.

SEASON OF MAKING. Where the family is large, it is customary to begin, as soon as the cows afford milk enough for a cheese; continuing to make "family cheese," until the cows go to graze. From the beginning of May to the beginning of August, is the time of making what is termed "year's cheese:" continuing, from that time, to the latter end of October, to make what is called the "latter weigh;" likewise for the factor: and from that time, until the cows go off their milk, to make "family cheese."

QUALITY OF THE MILK. It is not so customary, here, as in the other cheese countries, to skim a part of the milk, from which factor's cheese is made: nevertheless, in

in some dairies it is practised: the proportion skimmed varying in different dairies.

COLORING. In the ordinary practice of the district, cheese is *not* colored. Nevertheless, some few individuals use coloring; and find their advantage in doing it. The produce of one passés, at market, for WARWICKSHIRE, that of the other for GLOUCESTERSHIRE cheese: the factors, of course, will give more for the latter than the former. To the *consumers*, therefore, this filthy practice owes its prevalency.

CORRECTING. In this district, an instance is mentioned, in which a large lump of *alum*, kept in the cowl during the time of coagulation, was *believed* to be efficacious, in preventing the cheese from heaving. This, however, by way of hint.

RENNET. No established mode of preparation.

RUNNING. The ordinary *heat of the milk* is 85° to 90° . The *time in coagulating*, which is held out as proper, is about an hour; but, in practice, I have seldom or ever found so slow a coagulation.

In a considerable dairy, where tolerable cheese was made, the practice was to *bring*

the curd in about a quarter of an hour ! but not to *break it up*, in less than three quarters ! I mention this to show how many different ways there are of producing cheese of a moderate quality.

CURD. In some large dairies, more particularly, perhaps, under the practice last mentioned, the *breaking* is done, not with a knife or the hand, but with the “churn dash” ! an admirable thought, so far as expedition is thereby promoted. But, in a cowl of delicate curd, this coarse tool would no doubt be improper.

The *gathering* is done, in the usual manner, with the hands and the dish, the whey poured off thro a sieve, and the curd re-broken.

Scalding. In the present established practice, the *curd* is not scalded ; except in the practice of a few individuals ; but generally the *cheese*. It is observable, however, and to me is very interesting, that the finest dairy of cheeses I saw in the district, was *not scalded*, either in the curd, or in the cheese.

CHEESE, in the press. Having been vat-
ted hard with the *hands* (or, in some few in-
stances, previously squeezed in the *press*),
and

and having stood about an hour, it is taken out of the press, and *scalded*,—by immersing it in *water*, heated to about 150° , letting the evening's cheeses remain in the scalding liquor, all night; and the morning's cheeses, until the water be cold; when they are placed again in the press: in which having remained a few hours, they are (in common practice) taken out; the cloth finally taken off; the cheeflings *salted*; replaced in the press; and, having stood another meal (in the whole two meals), are finally taken out of the press.

On the shelves,—the cheeses remain only a few days, with no peculiarity of treatment.

On the floor,—the year's cheese, or first weigh, is seldom or never cleaned. The edges of the latter weigh are sometimes scraped; and sometimes only rubbed with a HAIR CLOTH; an admirable utensil in a cheese chamber.

MARKETS FOR CHEESE. *London*, the *manufacturing towns*, and the *north of England*, to which great quantities of cheese are sent from this district.

PRODUCE. I met with a well authenticated instance, in this district, of the produce of cheese being materially influenced by the *season*.

One year, twentyone cows produced four tons of factor's cheese, beside the expenditure of the family; together, upwards of four hundredweights, a cow; yet, next year, the same cows, with the addition of four or five more to the dairy, did not produce so much cheese.

The first summer was warm, and moderately wet; neither too wet nor too dry; a happy mixture of warmth and moisture; the pastures were eaten level, even to a degree of bareness, yet they always wore a freshness, and the cows, throughout the summer, looked sleek and healthy. The next was a wet summer.

The medium *produce of a cow* is three hundredweights, and upward.

The *produce of the district* would be difficult to ascertain; as it has not, with respect to the dairy, any determinate bounds. WARWICKSHIRE, and the DISTRICT of the STATION send a quantity of cheese to market, nearly equal, perhaps, to NORTHWILTSHIRE and the VALES of GLOCESTERSHIRE.

SWINE.

28.

S W I N E.

THE NUMBER of swine kept, in this district, is above par. The farms, of some of the more modern farmers, are mere hog warrens. But in what may be called the established practice of the district, the number kept is few; the size, however, is extraordinarily large; thirty to forty stones (of 14 lb.).

With respect to the PROPORTION OF SWINE TO COWS, I found, in the practice of one superior manager, only eight hogs, to twenty cows, though no calves were reared. And, in that of another, in which calves are reared, only four or five to twenty cows. See GLOCESTERSHIRE, sect. SWINE.

The BREEDS of swine, in this district, are various. The large black-and-white *Berkshire* breed is the favorite, among the

orthodox of *this* district. But in the yards of modern farmers, the “tonkey,” or half bred *Chinese*, are more commonly seen*.

Of swine, as of every other species of stock, Mr. BAKEWELL possesses a superior breed; a mixbreed sort; which I mention the rather, as it furnishes the only instance, I have met with, of this species of stock being improved, by *breeding inandin*; a practice which, though it is admitted as applicable to the three superior species of livestock, is considered by intelligent men, even of this district, as unfriendly to the species under notice.

One superior breeder *believes*, that he pursued the practice, until all his pigs became “ricketty; another, until they were all “fools”! and even Mr. Bakewell had a want of success, at the outset of improvement. He persevered, however. He continued to send his sows, year after year, to the same celebrated boar (belonging to a gentleman in his neighbourhood), which boar is the father of the entire family: his daughters, and

* There is, in this district, a very extraordinary variety of the black breed of hogs: a “whole-footed sort:” the hoof being entire, like that of the ass, not cloven, as that of hogs in general.

and his daughters' daughters, having been regularly sent to him ! The consequence is, the breed, so far from being worn out or weakened, has been highly improved, by this incestuous intercourse.

The LETTING of MALE SWINE has not, I believe, yet been introduced into practice. But the price of the leap is properly raised with the quality of the boar ; as from one to five shillings, a sow.

In the MANAGEMENT of STORE SWINE, I met with only one idea, that requires registering : namely, that of *oats*, being, in the opinion of professional men, preferable to *barley*, as a food, not of young pigs only, but of breeding sows.

Another opinion, however, may be mentioned : namely, that young pigs require *warm* meat, to make them *grow*. Corn and cold water will make them sleek and healthy ; but warm beverage is considered as requisite to a quick growth. This, however, is registered as matter of *opinion*.

The FOOD of FATTING SWINE is chiefly *barley meal*. Sometimes *potatoes* are mixed with it. Few *beans* or *peas* are now used in fattening swine.

In

In the MANAGEMENT of FATTING SWINE, I met, in this district, with a minutia of practice, which well deserves a place in this register: namely, that of keeping two or three little store pigs in the fattening sty; for a purpose which theory would not readily suggest.

While the fattening hogs are taking their repast, the little ones wait behind them; and as soon as their betters are served, lick out the troughs!

Beside the advantage of having, by this expedient, no waste nor foul troughs, there is another. The large pigs rise alertly to their food, lest the small ones should forestall them; and fill themselves the fuller, knowing that they have it not again to go to!

The disadvantage of this practice is, I understand, the large ones are apt to lord it, too much, over the little ones; especially in a confined sty. If, however, they had a separate apartment assigned them, with an entrance too small for the fattening swine to follow them, this disadvantage would be in a great measure remedied.

In this district*, I saw a FATTING STY, in a most admirable situation: by the brink
of

* At FISHERWICK, the seat of the EARL OF DONEGAL.

of a stream; which runs, on the dog-kennel plan, through the yard of the sty.

The sty is a separate building, substantial and commodious; the entire site shelving, from the gangway behind the troughs, down to the brook; in which the hogs, in warm weather, delight to bathe themselves: cleanliness is a necessary consequence. A disadvantage is that of some part of the fulliage being carried away by the stream*.

29.

S H E E P.

THE MIDLAND DISTRICT abounds with SHEEP,—notwithstanding the nature of the soil; which, in general, may be said to be better adapted to cattle, than to sheep.

The situation and the nature of the soil, however, are such as render it, in general, a district

* In a situation, however, like this, where the stream empties into *fish pools*, no eventual loss may ensue.

district in which sheep may be kept, with a degree of safety.

The INCLOSURES, that are properly freed from surface waters, and are underdrained where requisite, may be deemed *sound* sheep pasture.

On the contrary, the COMMONS and COMMON FIELDS are most of them dangerous to this species of stock. In 1783, a memorable year for the *rot*, the stock of some of the fields were swept away, entirely, by this fatal disease.

I. The BREEDS of this neighbourhood are various. They may, however, be reduced to two classes :

Shortwooled sheep—inhabitants of the commons and fields—provincially “field sheep ;” and

Longwooled sheep—principally confined to the inclosures—provincially “pasture sheep.”

FIELD SHEEP are, in some part, reared in the district. But the principal part of the sheep, seen on the commons, and in the common fields, are ewes, brought from the hills of Shropshire, Staffordshire, and Derbyshire ; but chiefly from the first ; and, hav-
ing

ing *reared* their lambs, are either fattened in autumn, in the inclosures, or sold fleshy out of the fields, to the Walsal and colliery butchers, or are kept over winter, for another stock of lambs:—which, in autumn, are driven into Worcestershire, and the lower lands of Shropshire; where they are fattened either on the autumnal grass, or are kept over winter, and finished in early spring;—the dealers bringing back a supply of ewes from the Shropshire fairs.

This machine has been going round,—this circulation has been kept up,—time immemorial; and, on reflection, appears to be a traffic founded on rational principles.

Beside the dangerous quality of the commons and fields, to a perennial flock, the feedage they afford is not good enough for the “pasture sheep” of this country; but is sufficient for the maintenance of the small hardy mountaineers. It is not, however, sufficiently good to *fat* the lambs, even of this breed; but is equal to the purpose of *rearing* them; though produced by a cross with a longwooled ram. On the other hand, the Shropshire hills are able to maintain their own breed, as breeding stock; but not to fat them: the old ewes are therefore sent, lean,

to the open fields of this district; by which means the Worcestershire farmers are supplied with strong lambs, suited to the rich lands of that country.

This is a remarkable specimen of the INTERCOURSE OF DISTRICTS; which, while much of the kingdom lay in an open state, was probably more observable, and much more considerable, than it is at present.

PASTURE SHEEP. Formerly, there appears to have been only one breed of long-wooled sheep, in the MIDLAND DISTRICT: a strong largeboned sort; which is still common to WARWICKSHIRE, and to much of the counties of LEICESTER and RUTLAND; and may, indeed, be still found, in every quarter of the district.

In Warwickshire, and Staffordshire, this old breed of the country is distinguished by the name of the "WARWICKSHIRE" breed; in Leicestershire, Rutlandshire, Northamptonshire, and Nottinghamshire, by that of the "OLD LEICESTERSHIRE" breed.

Of this breed, or rather of these two varieties, for they have their distinguishing characteristics, there may, no doubt, be many valuable individuals; and a few flocks,
that

that have been attended to, are of a tolerable quality.

In general, however, they may, without risque, be said to be an unprofitable species of stock; and, in many instances, intolerably bad. I was led to the sight of a "true old Warwickshire" ram, the most completely ugly, and altogether, I think, the worst sheep I ever saw*. His frame large, and remarkably loose. His bone, throughout, heavy. His legs long and thick, terminating in large splaw feet. His chine, as well as his rump, as sharp as a hatchet. As to fat, he had none; nor flesh enough to ascertain its quality; though his pasture was good: his skin might be said to rattle upon his ribs, and his handle be conceived to resemble that of a skeleton wrapped in parchment. Yet the proprietor of this creature has rode his ewes with him, for several seasons; giving for a reason, that "he always finds his

* Excepting one of the "true old Leicestershire sort," which was shown, *to be let by the season*, at Leicester ram show, in 1789. This creature might be said to be in the lowest state of degeneracy. A naturalist would have found some difficulty in classing him; and, seeing him on a mountain, might have deemed him a nondescript: or a something between a sheep and a goat.

his sheep fat enough at the time he wants to sell them:" a time, however, which, I understand, does not arrive, until they be some three or four years old.

It must not, however, be conceived that all the rams of the "old sorts" bear the above description; or that all the old-fashioned breeders are equally inattentive to their flocks: nevertheless, we may safely say, that, upon the whole, the breeders are unpardonably remiss, and their flocks, in general, in a state of shameful neglect.

All that is required to be said, farther, of the old stock of the country is, that it still has its warm advocates, and its leading breeders.

Mr. PALFREY of Fenham, near Coventry, takes the lead, in the Warwickshire breed *; and

Mr. FRIZBY of Waltham, near Melton Mowbray, in the old Leicestershire.

During

* In justice, however, to the good sense and discernment of Mr. PALFREY, he appears to have persevered the longer in the old breed, not under the dictates of his own judgement, but in compliance with the prejudices of his customers.

Mr. BARNARD, near Warwick, may perhaps be said to be, at present, the most zealous supporter of the Warwickshire breed.

During the last thirty or forty years, the old stock has been giving way to a MODERN BREED—a NEW VARIETY—which may be said to be a *creation* of the Midland Counties; in some parts of which it has already obtained a degree of establishment, under the distinction of the “NEW LEICESTERSHIRE.”

This being, at present, the most *fashionable* breed of the island, and, to the GRAZIER, one of the most *profitable*, its history is an interesting subject, and its merits an object of enquiry*:

The ORIGIN of this breed appears to have taken place, in *this* neighbourhood. JOSEPH ALLOM of Clifton, who had raised himself, by dint of industry, from a plowboy, seems to be acknowledged, on all hands, as the first who *distinguished* himself, in the Midland District, for a superior breed of sheep.

VOL. I.

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* The TEESWATER BREED has been already noticed (see YORKSHIRE): the NEW VARIETY OF LINCOLNSHIRE *I have not yet seen*. Nothing, therefore, contained in these remarks, must be considered as having any allusion to that variety; which, I believe, is the only distinguishable variety of this kingdom, that has not already fallen under my observation.

He was known to buy his ewes at a distant market; and was in his neighbourhood, *supposed* to buy them in LINCOLNSHIRE; but, on better information, it appears, that he had them, principally, of Mr. STONE of Godeby, in the Melton quarter of LEICESTERSHIRE.

In whatever manner he raised his breed, it is certain, that, in his day, it was the fashion, among superior farmers, to go to Clifton, in the summer season, to choose and *purchase* ram lambs; giving, as I have been informed, by cotemporaries of Allom, from two to three guineas, apiece.

This seems to be the only man who became *distinguishable* as a breeder of sheep, in this part of the island, previously to Mr. BAKEWELL: and, it may be reasonably supposed, the breed, through the means of Allom's stock, had passed the first stage of improvement, before Mr. Bakewell's day.

We may nevertheless advance, and without risque, I think, that to the ability and perseverance of Mr. BAKEWELL, the Leicestershire breed of sheep owes the present high state of improvement.

The

The MANNER in which Mr. Bakewell raised his sheep, to the degree of celebrity in which they deservedly stand, is, notwithstanding the recentness of the improvement, and its being done in the day of thousands now living, a thing in dispute; even among men high in the profession, and living in the very district, in which the improvement has been carried on!

Some are of opinion, that he effected it, by a *cross*, with the *Wiltshire* breed; an improbable idea; as their form, altogether, contradicts it: others, that the *Ryeland* breed (see GLOCESTERSHIRE) were used in this purpose; and with some show of probability. If any *cross*, whatever, was used, the *Ryeland* breed, whether we view the form, the size, the wool, the flesh, or the fatting quality, is the most *probable* instrument of improvement.

These ideas, however, are registered, merely, as matters of *opinion*. It is more than probable, that Mr. Bakewell, alone, is in possession of the several MINUTIÆ of improvement; and the public can only hope, that he will, at a proper time, communicate

the *facts*, for the government of future improvers.

Whenever this shall take place, it will most probably come out, that no CROSS, with any *alien* breed whatever, has been used; but that the improvement has been effected, by selecting individuals from *kindred* breeds;—from the several breeds or varieties of long-wooled sheep, with which Mr. B. was surrounded, on almost every side;—and by breeding, INANDIN, with this selection: solicitously seizing the superior accidental varieties produced; associating these varieties; and still continuing to select, with judgement, the superior individuals.

The practicableness of this method of improvement will appear in MIN. 60; where we find an individual of a very inferior kind of sheep, nearly approaching the best of the improved breed. Had this individual been preserved, by good fortune, or superior judgement, for the purpose of breeding,—from him, alone, a variety, much superior to the breed that produced him, might without doubt have been raised.

Let the means of improvement have been what they may, the improvement itself, viewed

viewed in its proper light. is evident and great ; evincing in a striking manner, the genius and perseverance of its promoter. In the improvement of HORSES and CATTLE, Mr. BAKEWELL appears to have acted, in competition, with other enterprizing breeders : but the improvement which has been effected, in the Midland breed of SHEEP, may be said to be ALL HIS OWN.

Mr. BAKEWELL, however (as other great men have had) has his DISCIPLES, who have assisted him, very essentially, in establishing and disseminating the “ new Leicestershire ” breed of sheep ; or, as it might well be named, from the place of its rise, the DISHLEY BREED.

To enumerate the whole of Mr. Bakewell’s followers would be difficult and superfluous : nevertheless, it appears to be necessary, to the due execution of this work, to register such individuals, as come within the limitation of PRINCIPAL RAM-BREEDERS, of the MIDLAND DISTRICT : a task whose only difficulty will be that of avoiding offence, by a misclassification. The best title to precedence appears to be, the

length of time, which each has been in what is termed the "Dishley blood."

Mr. Stubbins of Holm, near Nottingham.

Mr. Paget of Ibstock, in this district.

Mr. Breedon of Ruddington, Nottinghamshire.

Mr. Stone, Quarndon, near Loughborough.

Mr. Buckley, Normanton, Nottinghamshire.

Mr. Walker, Wolfsthorp, on the borders of Lincolnshire.

Mr. Bettison, Holm, near Nottingham.

Mr. White, Hoton, Nottinghamshire.

Mr. Knowles, Nailston, in this district.

Mr. Deverel, Clapton, Nottinghamshire.

Mr. Princep, Croxall, in this district.

Mr. Burgess, Hucklefcot, _____.

Mr. Green, Normanton, _____.

Mr. Robinsen, near Welford, Northamptonshire.

Mr. Moor, Thorp, in this district.

Mr. Atley, Odston, _____.

Mr. Henton, Hoby, Leicestershire.

Beside these leading men, there are many of less repute, in the Midland District, and many others, scattered over almost every part of

of the island, particularly in Lincolnshire, Yorkshire, and so far north as Northumberland; also in Worcestershire, and Gloucestershire.

It is observable, however, and appears to me an extraordinary circumstance, evincing, in a remarkable manner, the weakness of men's judgements, or the strength of their prejudices, that, notwithstanding the rapid progress this breed of sheep are making in distant parts of the kingdom, and notwithstanding the decided preference given to them, by those who have had experience of them in this district, the majority of the breeders and graziers, not of Warwickshire only, but of Northamptonshire, Rutlandshire, and Leicestershire, even within sight of Dishley, are inveterately against the breed! and this notwithstanding many of their charming grounds, at present, are stocked with creatures that would disgrace the meanest lands in the kingdom*.

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This

* NOTTINGHAMSHIRE takes the lead, in this improvement. In the country between Nottingham and Dishley, the modern breed may be said to have gained, already, a degree of establishment.

This seeming paradox can be explained in no other way, perhaps, than in the improper manner in which the improved breed have been promulgated.

Had the Dishley sheep, twenty years ago, been judiciously distributed over the district, and had been, on all occasions, *permitted to speak for themselves*, it appears to me probable, that there would scarcely have been a sheep, of any other breed, now left in the Midland district.

No professional man, whose judgement was not biased, or entirely carried away, by the spirit of opposition, could hesitate a moment in his choice. But so long as the fire is fanned, and the cauldron is kept boiling, so long the advocates of the breed must expect to be in hot water; and, in the nature of men's passions, so long the new Leicestershire breed of sheep must have its powerful opponents.

It now remains to give a DESCRIPTION of the superior class of individuals of this breed; especially EWES and WEDDERS; in full condition, but not immoderately fat. The RAMS will require to be distinguished, in the next article.

The *head* long, small, and hornless, with ears somewhat long, and standing backward, and with the nose shooting out horizontally forward.

The *neck* thin, and clean toward the head: but standing low, and enlarging every way at the base; the *foreend*, altogether, short.

The *bosom* broad, with the *shoulders*, *ribs*, and *chine* extraordinarily full.

The *loin* broad, and the *back* level.

The *haunches* comparatively full, toward the hips, but light downward; being altogether small, in proportion to the fore parts.

The *legs*, at present, of a moderate length; with the bone extremely fine.

The *bone*, throughout, remarkably light.

The *carcàse*, when fully fat, takes a remarkable form: much wider than it is deep; and almost as broad as it is long. Full on the shoulder, widest on the ribs, narrowing with a regular curve towards the tail.

The *pelt* thin; and the *tail* small.

The *wool*, shorter than long wools in general; but much longer, than the middle wools;

wools; the ordinary length of staple, five to seven inches: varying much in fineness and weight.

The COMPARATIVE MERIT of this breed will best appear, by placing it, in its present state, in the several lights in which it may be viewed, comparatively with other breeds: thereby, at the same time, ascertaining how far the PRINCIPLES OF IMPROVEMENT have, in this case, been judiciously applied.

IN BEAUTY OF FORM, the breed under notice surpasses every other breed I have seen. I speak not of *picturesque*, but of *positive* beauty. Viewed as distinct objects, the individuals of it are peculiarly pleasing to the eye.

I do not, however, mention this as an evidence of their superiority. There are men of the first abilities, and of great knowledge and experience in sheep, who, as has been before mentioned, prefer what is called a *useful* to a *handsome* sort; a rise in the back, or a fall in the shoulders, to a want of flesh and fattening quality. If, however, beauty and utility can be united, which they evidently are in some instances, per-
fection.

fection may be said to be more nearly approached.

UTILITY OF FORM. The most distinguishing characteristic of this breed,—that which might be considered as its specific character,—is the fulness, and comparative weight, of its fore quarters.

This, however, seems to be contrary to the general principle of improvement, and affords matter of argument to the advocates of the old stock; who contend, that this form throws the meat upon the least valuable parts; legs and saddles, not shoulders and breasts, being the favorite joints.

The advocates for the new breed *argue*, in return, that the majority of the eaters of mutton are of the poorer class, and that the grand object of the improvement is their supply; *arguing* farther, that upon a given set of bones, and with a given quantity of other offal, a greater weight of meat may be laid on the fore quarters, than on the hind ones.

PROPORTION OF OFFAL. Another distinguishing character, of the modern breed, is the smallness of their *bone*, comparatively with that of the old stock, and most other breeds;

breeds; not of the legs only, but of the ribs and other parts. I have seen a rib of a sheep, of this breed, contrasted with one, of a Norfolk sheep: the disparity was striking; the latter nearly twice the size; while the meat which covered the former was three times the thickness: consequently *the proportion of meat to bone* was, in the one, incomparably greater than in the other.

Therefore, in this point of view, the improved breed has a decided preference. For, surely, while mankind continue to eat flesh, and throw away bone, the former must be, to the *consumer* at least, the more valuable.

The *other offal* is also light. The pelt thin, and the head small; and, *it is said*, the intestines, and even the blood, are small in a similar proportion.

That the last two are comparatively small, in proportion to the carcase, when this is loaded with fat, in a manner that the carcase of no other breed of sheep, probably, is capable of laying on, will be readily granted. But that they bear a smaller proportion to the carcase, in this breed, than they do in
others

others of the same natural size, in the same condition, and going in the same pasture, remains, I believe, among many other particulars relating to livestock, to be proved, by a series of accurate experiments.

QUALITY of the FLESH. The *criteria* of good and bad flesh, *while the animal is living*, differ in different species of animals; and to ascertain them, with sufficient accuracy, to render them safe guides in every stage of poverty and fatness, and to render definitions of them, in the several stages, intelligible, would require a course of experiments and observations, on a variety of individuals of each species; attending them, through every stage of fleshiness, to that of finished fatness; following them from the grazing ground to the slaughter house, and from thence to the table; and this with an accuracy of attention that has probably never been given; nor will, in all probability, ever take place, so as to become of PUBLIC UTILITY, without the patronage of a PUBLIC INSTITUTION.

Nevertheless, in this district, there are men, who, from a long course of attentive practice, though not, perhaps, scientifically pursued,

pursued, have acquired a sufficient degree of knowledge of this subject, to enable them to judge, by the touch, while the animal is alive, and low in condition, what the quality of the meat will be, when fat, and the animal is slaughtered; and this with some degree of accuracy: adequate, at least, to our present purpose; which is that of giving the student a general idea of the subject; as well as that of registering, for the use of future improvers, the ideas respecting it, at present known.

The quality of the *flesh of cattle* is best ascertained, when the animal is in a state of fleshiness,—full of condition, but not fat. In this state, if the flesh be bad, it handles *hard*, with a degree of *barshness*; if good, it is *soft* and *mellow*, with a degree of “*looseness*,” or rather *suppleness*, or *flexibility*; which, as the animal acquires a state of fatness, gives place to a degree of *firmness*—*fastness*;—a quality so nearly allied to hardness, that, without attending to the general state and condition of the animal, they might, by the inexperienced at least, be mistaken for each other.

But

But the *flesh of sheep* is to be judged, by somewhat different criterions. These criterions, however, are not yet fixed. Professional men—breeders even of the first class—differ in their ideas of the subject: a proof that it has not yet been sufficiently studied.

It is, nevertheless, allowed, by all superior breeders, that *looseness* is a *bad* quality of the flesh of *sheep*, when *living*; as being the criterion of coarse-grained, spongy mutton.

But the criterions of *good* flesh are not yet settled. One superior breeder is of opinion, that if the flesh is not loose, it is of course good; holding, that the flesh of sheep is never found in a state of hardness, like that of ill fleshed cattle:—while others make a fourfold distinction of the flesh of sheep; as *looseness*, *mellowness*, *firmness*, *hardness*: considering the first and the last equally exceptionable, and the second and third equally desirable; a happy mixture of the two being deemed the point of perfection.

The flesh of sheep, *when slaughtered*, is well known to be of various qualities. Some is composed of large coarse grains, inter
spered

ſperſed with wide empty pores, like a ſponge : others, of large grains, with wide pores filled with fat : others, of fine cloſe grains, with ſmaller pores filled with fat : and a fourth, of cloſe grains, without any intermixture of fatneſs.

The fleſh of ſheep, *when dreſſed*, is equally well known to poſſeſs a variety of qualities : ſome mutton is coarſe, dry, and inſipid ; a dry ſponge ; affording little or no gravy of any color. Another ſort is ſomewhat firmer ; imparting a light-colored gravy, only. A third, plump, *ſhort*, and palatable ; affording a mixture of white and red gravy. A fourth, likewiſe plump and well flavored ; but diſcharging red gravy, only ; and this in various quantities.

It is likewiſe obſervable, that ſome mutton, when dreſſed, appears covered with a thick, tough, parchmentlike integument ; other, with a membrane comparatively fine and flexible.

But theſe, and ſome of the other qualities of mutton, may not be wholly owing to *breed* ; but, in part, to the *age*, and the *ſtate of fatneſs*, at the time of ſlaughter ; and I wiſh to have it underſtood, that what is here
offered

offered, is intended to agitate, rather than to define with sufficient accuracy, a subject which is well entitled to a scientific discussion:

FATTING QUALITY. Examined in this light, whether we consider the *degree* of fatness, or their *natural propensity* to a state of fatness, even at an *early age*, the improved breed of Leicestershire sheep appear with superior advantage.

I have known an instance, (in the ordinary practice of a minor breeder) of “lamb-hogs” (yearling wedders,—barely a year old), being sold, in April (1786, a dear time) for 27s. to 28s. a head; while the common run of ill bred things were not worth more than 18s. each. There has, I am told, and by indisputable authority, been an instance of yearlings of the best blood being sold, in August (about a year and a half old), at 35s. a head! and other instances of their profitableness, to the *grazier*, will appear in the MINUTES.

The GRAZIER’S object, undoubtedly, is to get sheep that will fat, *quickly*: for even supposing them to eat more food, than sheep which fat more slowly, there is a material

advantage accruing from their reaching market, a fortnight or three weeks sooner, than other sheep: grafs mutton, for instance, bears a better price, at its first coming in, than it does a few weeks afterward; when a glut seldom fails of being poured into market. So far, however, from these sheep consuming more food than others, it seems *probable* at least, that sheep which are, in their nature, disposed to a state of fatness, become marketable, at a smaller expence of food, than sheep which are, naturally, of a leaner constitution.

This is among the first of the many things desirable, that remain to be *proved*. Some attempts have been made, in this district. But experiments, of a complex nature, require a degree of leisure, a minuteness of attention, a fund of patience and perseverance, and, above all, a habit of experimenting, that few men of business possess.

The *degree of fatness*, to which the individuals of this breed are capable of being raised, will, I am afraid, appear incredible, to those who have not had an opportunity of being convinced, by their own observation.

observation. I have seen widders, of only "two shear" (two to three years old) so loaded with fat, as to be scarcely able to run; and whose fat lay so much without the bone, that it seemed ready to be shook from the ribs, on the smallest agitation.

It is common for the sheep of this breed to have such a projection of fat, upon the ribs, immediately behind the shoulder, that it may be easily gathered up in the hand, as the flank of a fat bullock. Hence it has gained, in technical language, the name of the FOREFLANK; a *point* which a modern breeder never fails to touch, in judging of the quality of this breed of sheep.

What is, perhaps, still more extraordinary, it is not rare for the rams, at least, of this breed to be "CRACKED ON THE BACK;" that is, to be cloven along the top of the chine, in the manner fat sheep generally are, upon the rump. This mark is considered as an evidence of the best blood.

Extraordinary, however, as are these appearances, while the animals are living, the facts are still more striking after they are *slaughtered*. At Litchfield, in February 1785, I saw a fore quarter of mutton, fatted by

Mr. Princep of Croxall, and which *measured* upon the ribs *four* inches of *fat*!

But this I saw far exceeded in the mutton whose bone has been mentioned, and which, notwithstanding its extreme fineness, was covered with about an inch of muscular flesh, interlarded, and *five* inches of fat!

Since then (1786) several sheep of this breed have laid six inches of meat on their ribs.

It is observable, that in sheep of this extreme degree of fatness, the muscular parts decrease in thickness as the fatness increases, and are so intermingled with fat, as to give the whole a fatty appearance; and this most especially in aged sheep; which, as aged cattle, have more fat in proportion to lean, than younger carcases. A loin of mutton of a sheep (ten shear) of twenty-six pounds a quarter, weighed, when the fat was taken off, only two pounds and a half!

These are certainly interesting facts. But reflection aptly suggests the question, to what stomach can mutton like this be grateful?

The answer held out is, "fat mutton is the poor man's mutton: it goes farther than lean;

lean; and has, of course, a smaller proportion of bone, than lean mutton. A poor man gives eightpence, a pound, for bacon, but only fivepence for fat mutton."

This semblance between fat mutton and bacon, is not altogether fanciful. When salted, and kept some time in pickle, even the palate perceives a strong resemblance. The advocates for growing bacon on sheep's bones, instead of producing it, as heretofore, upon those of swine, will say, that the art of preparing it has already been carried so far, as to deceive the palates, even of connoisseurs in eating. If they can really supply the markets with good bacon, at fourpence or fivepence a pound, their country will certainly have some reason to thank them. But this by the way.

It is also observable, in this place, that the breed of sheep under consideration, though they lay so great a quantity of fat upon the bones, seldom, in the butcher's phrase, "*die well*:" while the Norfolk sheep, for instance, as seldom "*deceive the butcher*." This accounts, in some measure, for the preference given to the latter, by the butchers in Smithfield. Tallow is a kind of boon which,

if not forthcoming, incurs a disappointment the butcher cannot brook*.

The Leicestershire sheep, however, appear to me to possess a quality, which more than counterbalances that deficiency. They weigh above their appearance. They have, likewise, less offal (head feet and pelt); and, when fully fat, *proportionably* less "inside," than sheep in general. When highly finished, they appear as a solid lump of flesh. Though small to the eye, they will weigh thirty, or perhaps, forty pounds, a quarter. Their flesh is, in reality, firmer than that of sheep which collect or lay up their fat within, while their muscles and their adipous membranes are left porous and spongy.

On the whole, we may venture to say, that, in respect to CARCASS, viewed in the aggregate, the NEW LEICESTERSHIRE sheep have a decided preference, to most, if not all, other breeds; and that the PRINCIPLE

OF

* With respect to TALLOW, however, much depends on the AGE at which the animal is butchered; much, also, on BREED. Thus, were the new Leicestershire sheep to be kept on, to three years old, their produce of tallow would be increased: and the Norfolk breed, though mostly butchered at two years old, are remarkable for their produce of tallow.

OF IMPROVEMENT is, *this far*, well founded.

WOOL. Viewing the coat, abstractedly from the carcase, the Leicestershire sheep, compared with most other longwooled sheep, appear to disadvantage; and the Leicestershire breeders, perhaps, may seem liable to a degree of censure. Indeed, the coat, throughout the improvement, appears to have been set at nought; the carcase, alone, having engrossed the whole attention of the improvers.

But this is conformable with the general principle of improvement. *Flesh—human food*—is the object the improvers have had in view; and it is highly probable, that the more sustenance there is expended on the wool, the less there will remain for the carcase; beside a heavy fleece being, at certain seasons, inconvenient, and not unfrequently fatal, to the sheep.

Nevertheless, it appears, evidently, that a deficiency in the coat has, more than any other circumstance, hurt this breed of sheep, in the eyes of the old graziers; and has, beyond dispute, greatly retarded their adoption.

It is a circumstance somewhat extraordinary, however, and which, in justice to the breed, ought to be made public, that the deficiency of coat, which has done them so much injury, has scarcely any other existence than in the *arguments* of their own advocates! who absurdly affect to prize them, for a poverty of wool: holding out, in the *wildness of argument*, that a breed of sheep *without wool* would be the most desirable! No wonder that *such arguments* should produce in the minds of men, who know the value of a fleece of wool, and who, perhaps, have only seen the sheep *in argument*, should conceive unfavorable ideas of them, and consider the stir that has been made about them, as a visionary flight, which is above their comprehension.

I mention these ridiculous arguments, the rather, and with greater freedom, as they not only retard the progress of this improvement, but militate against its leading principle; that of laying weight on the most valuable parts: for supposing an increase of wool incurs, necessarily, a decrease of carcase; yet, surely, wool at eightpence a pound (the medium price it has now been at, some years)

is

is more valuable, to the grazier, than mutton at fourpence.

The *fact* is, this breed of sheep, when *seen* and *examined*, are *not greatly* deficient in wool. The widders generally run about four to the tod (of 28 lb.); the ewes about four and a half; the fleeces, of the former, weighing six to eight, of the latter, five to seven pounds each.

Indeed, their cooler advocates *argue*, and with some show of *reason* on their side, that they not only produce more mutton, but more wool, *by the acre*, than any other breed of sheep.

This however remains, with the other desiderata relating to livestock, to be *proved*, by a series of accurate experiments.

GENERAL OBSERVATIONS ON SHEEP, AS A SPECIES OF DOMESTIC ANIMALS.

From this comparative view, it evidently appears, that the modern breed, of Leicestershire, are a valuable variety of longwooled sheep.

In CARCASE, they may be said to be nearly perfect*: superior, at least, to any other

* Viewing this as a distinct breed, the disproportionate weight of the forequarters appears, to me, an imperfection.

other breed of longwooled sheep I have seen.

In wool, however, they fall short, I believe, of every other longwooled breed: owing principally, it would seem, to a false principle of improvement.

Nevertheless, taking them as they are, at present, they are, to the *grazier*, professionally and distinctly considered, a very profitable breed of sheep.

It now remains to place them among the other breeds of sheep in the island, and consider the whole, collectively, as a species of domestic animals.

The use and value of the CARCASE, as a species of animal food, being obvious, we proceed to examine the uses and value of the WOOL.

In the warmer climates, savages go naked, and civilized societies may dispense with vegetable coverings. Flax and cotton may screen the body from the sun, and give it, occasionally, the requisite degree of warmth.

But

But considering the present form of these sheep, as being capable of correcting the imperfections of almost every other breed of longwooled sheep, it might, in figurative language, be said to be *more than perfect*.

But in more frigid climes, the natural nakedness of the human body requires a warmer covering: animal productions are in a degree necessary. In the savage state, the entire skins of animals are transferred from brutes to the human body. But, in a state of civil society and cultivation, the native animals are no longer adequate to the supply. It has, therefore, been found requisite, to domesticate an animal, for the purpose of furnishing a substitute.

In the choice of this animal, there appears to have been no alternative. Indeed, when we consider the natural defencelessness of the sheep, among other animals, in a state of nature, human vanity is ready to suggest, that it was formed for the benign purpose of furnishing mankind, in a state of civil society, and in a situation of inclemency, with covering, of which they are naturally destitute. The quantity and quality of their fur, and the circumstance of its being easily collected, year after year, renders it, indisputably, in the present state of society, and in the climature of this island, the most valuable of animal productions. There are many animals capable of affording us food,

●qually

equally wholesome; but no one, in nature, able to furnish us with clothing, equally comfortable.

Hence, even as a source of happiness to individuals, the coat of the sheep is an object of attention. But when we view it, at the same time, as the encourager of industry, and the main support of commerce, it becomes, in this country, an object of still higher importance.

This nation, in particular, might be happy within itself, and respectable among other nations, without the carcase, but not without the coat; which is well known to be the grand basis of our commercial, if not our political consequence. Beside, it is an indigenous produce of the island, which can always be had at will, and is not, like many other materials of manufacture, liable to the fate of conquest, or dependant on those who shall hold the empire of the sea.

Therefore, as an object of NATIONAL ATTENTION, the coat of the sheep is of the first importance; and every wilful attempt to supplant or debase it, is an act of treason against the state.

Extending

Extending this enlarged view, of the useful purposes of sheep, to the several branches of RURAL ECONOMY, a third valuable property appears: Sheep, viewed collectively, beside affording food and covering to the human body, are applicable to the valuable purpose of MELIORATING THE SOIL. And a fourth is equally evident. Sheep, if properly chosen, render productive a class of country, which makes no inconsiderable part of the surface of this island; and which, without them, would, while it remains in its present state, lie entirely waste to the community. The description of country here meant is HEATHY MOUNTAIN.

In this general view of the INTENTIONS for which sheep are propagated in this island, the *form* and *disposition* become entitled to no inconsiderable share of attention.

To the mere GRAZIER, it is true, it matters not how short the legs, how compact the carcase, or how sluggish the disposition; provided his sheep will travel to market: quietness is, to him, a desirable quality. It is immaterial to him, whether the face be black or white, whether the head has horns or knots, whether the wool and the
legs

legs be short or long, or whether the bones lie in this or that form,—any farther than as such points are characteristic, or not, of a profitable animal, *to him*. The shambles must determine the value of the carcase, and the woolsorter's warehouse the quality of the coat. The butcher and woolstapler, *jointly*, are the men whom the grazier has to look up to; and that sheep which will fat the soonest, on a given quantity of food, and whose carcase and wool, *jointly*, will fetch the most money when the animal is fat, is the most profitable sheep to the grazier; no matter as to size or form, the length or lightness of wool, or the color or length of leg. These, to a mere grazier, in a well soiled inclosed country, are not objects of attention; provided a disposition to wildness, and a desire for rambling, are not thereby encouraged*.

But

* It has been observed, foregoing, that the legs of the improved breed have been considerably lengthened, since their first stage of improvement; and with good effect: they are now better nurses, and better able to travel to market, than they were before. But it appears to me that the improvement, in this respect, has reached the degree of perfection; and, perhaps in some individuals, has already overtopped it: I have seen strong symptoms of wild-

ness

But, to a MOUNTAIN SHEPHERD, activity is an essential property of his flock. There are many thousand acres of heathy mountains, on which the breed of sheep under notice could not exist. The same beds of heath, which afford the deerlike inhabitants of those wilds a principal part of their sustenance, would *smother* a shortlegged longwooled sheep. A furze cover, or a thicket of thorns and briars, would be, for this, as eligible a pasture.

For the ARABLE FARMER, who keeps sheep for the purpose of the FOLD, the longwooled breeds are equally improper. He, likewise, wants an active, cleanlimbed, longlegged, shortwooled sheep, that can travel, in all seasons, without fatigue. In open barren countries, where sheep have half a mile, or perhaps a mile, to go to fold; and, when they return to their walk, have a great space of ground to go over, before their hunger be satisfied, remaining upon their legs almost the day through, shortlegged long-
ness in this breed: a property of sheep, adapted solely to the grazier, which is among the first of bad properties to be avoided: and domestic animals, in general, appear to be in a considerable degree wild, or cadish, according to their respective powers of flight.

longwooled sheep are useless in this intention. I tried them in Norfolk, on a clean sandy soil, with a good walk, and an easy drift. They sunk under what heath sheep would have got fat upon; and on which the larger breed of Norfolk thrive, as store sheep.

It is, however, held out by the advocates of this breed, that they are, now, since their legs have been lengthened, calculated for the fold; having been proved in this purpose.

It is readily granted, that, for a few weeks, or a few months of fine weather, immediately after they have been shorn, they may be well enough adapted to folding. But, whoever has seen "*longwooled sheep*" (no matter as to any nice distinction of sorts) waddling to and from the fold, in any other season, with loads of mud and water hanging to them, equal perhaps to twice the weight of their natural coats, would never think of spoiling a valuable species of *grassland* sheep, under an idea so truly visionary; while we have other breeds, I mean, which are, already, adapted to the purpose.

Nevertheless, it is much to be feared, that their legs have been lengthened, and their coats shortened, under the *extravagant* idea
of

of rendering them fit for *all* the purposes of Rural Economy, thereby qualifying them to fill *every* useful purpose of sheep, in order that they may become the *sole* breed of the Island!!!

Viewing sheep, generally, and in their various capacities and intentions, as well NATIONAL as ECONOMICAL, it appears demonstrably, that, of the numerous breeds and varieties, at present in this island; some *three, four, or five* DISTINCT BREEDS are, indisputably, and indispensably, necessary to its present state of prosperity:

A very longwooled sheep, as the Lincolnshire *, or the old Teeswater, for the richest of sound grass lands; and for the finest worsted manufactures.

A second, as the new Leicestershire, for less fertile grass land, as well as for rich inclosed arable lands, on which the fold is not used; and for the coarser worsteds, stockings, bays, coarse cloths, blankets, carpets, &c.

A third, a middlewooled breed, as the Wiltshire, the Norfolk, or the Southdown (of Suffex), or the three, for well soiled

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B b

arable

* I speak of the old Lincolnshire: the new variety, I understand, are equally well, or still better, wooled. §

arable lands, on which folding is practised ; and for cloths of the middle qualities *.

A fourth, a finewoolled sort, as the Ryeland, for the finest cloths †.

And a fifth, as the Shropshire, or a still more hardy race, for heathy mountain.

.. This general view, of the useful purposes to which sheep are applicable, in this island, has not been taken with the intention of depreciating the breed under consideration ; but with the design of placing them in their true light, and of assigning them their proper soil and situation.

Nor can it be published with a view to censure the spirited improvers of this breed, while the result of it reflects on them so much credit : they have evidently raised into existence a breed of sheep, which is peculiarly well adapted to their own soil and situation ; and, in doing this, have infinite merit ; as
having

* By cloths of the MIDDLE QUALITIES, I mean narrow cloths, of three or four, to broad cloths, of twelve or fourteen, snillings a yard : a latitude of quality which no one of the three breeds, here particularized, can, I believe, fill up ; the three, or other breeds, equally various in the qualities of their wools, being requisite to the present state of the woollen manufactory of this island.

† See GLOUCESTERSHIRE.

having acted on the grand basis of all rural improvements. And although I have already expressed myself generally, on this subject, I think it proper to repeat, in this place, that, for grass lands of a middle quality, as well as for arable lands where the fold is not in use,—a description of country which includes a large proportion of the valuable lands of the island,—the modern breed of Leicestershire sheep may, without undue praise; be said to be near perfection; and that *so long as a full demand for the species of wool they produce continues*, so long they; in their nature, must be, *to the grazier*, a very profitable breed of sheep: and further, that, so long as any other breed of longwooled sheep remain, with thin chines and loose mutton, so long they must be, *to the breeder*, a still more profitable species of livestock.

II. BREEDING. To give a comprehensive idea of this subject, the males and the females must pass separately in review.

RAMS. In the practice of the Midland District, at large, the management, respecting rams, is similar to that of other parts of the island; the breeders *rearing* or *purchasing* them.

It is observable, however, that the advocates of the old breeds, though they will not adopt the modern stock, have fallen, in some degree, into the modern practice of *letting by the season*.

Mr. PALFREY (mentioned above) lets a considerable number of the Warwickshire *; and Mr. FRIZBY a still greater number of the old Leicestershire: both of them, however, at low prices, comparatively with those given for the MODERN BREED, of which, chiefly, I shall speak under this head †.

The rams of the MODERN BREED are never *sold*; but are passed from breeder to breeder, *by the season*, only.

For the purpose of promoting this intercourse, each principal breeder has his SHOW

OF

* Mostly, however, tingured, at present, with the new Leicestershire blood.

† Mr. FRIZBY is said to let not less than “four-score” rams, annually, at the price, one with another, of five guineas a ram. At Waltham fair, in September 1789, Mr. F. had a show—(a fair to himself)—consisting of about an hundred rams, of different ages. And every year, it seems, the principal part of his rams are let at that fair. Thus, for nine or ten months keep of a hundred rams, and keeping open house one day, he is making some hundreds a year.

OF RAMS ; commencing, by common consent, the 8th of June ; and lasting until Michaelmas, or until the season of letting be past.

During a few weeks, after the shows commence, every rambreeder may be said to keep open house. Breeders and others, from all quarters of the kingdom, as well as the promoters of the breed who reside in the neighbourhood, attend these shows ; going, in parties, from one to another : some to take ; others to see and pass their judgements.

These private exhibitions close with a PUBLIC SHOW, at Leicester, the tenth of October ; when rams of every description, but mostly an inferior sort of the improved breed, are collected ; being brought in waggons ; many of them from a considerable distance ; some to be *sold* : but chiefly to be *let*.

This show has been held, I believe, time immemorial ; not, however, for the purpose of *letting* ; but for that of *sale*.

THE LETTING OF RAMS, BY THE SEASON, has long, I understand, been a practice in LINCOLNSHIRE *.

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The

* Whether the *letting* of rams is, or is not, an ancient practice, in England, the business of *dealer* in rams is, probably,

The ORIGIN, in the MIDLAND DISTRICT, may be traced—to a ram let, by Mr. BAKEWELL, at Leicester fair, about forty years ago, at the low price of sixteen shillings*.

Humble, however, as was this beginning, it proved to be the first stone of the foundation of a department of rural business, that has already risen to an astonishing height, and may, for some length of time, continue to bring in a copious source of wealth to the country.

The method of conducting this novel branch of rural business will require to be detailed,

In the MANAGEMENT OF RAMS, kept for the purpose of letting by the season, the following particulars require attention :

The choice, &c. of ram lambs.

Making up rams for showing.

Method of showing.

The points of rams.

Method of letting.

The

probably, of long standing; or whence the *surname* of TUPMAN? a provincial appellation, at present, in common use for RAMBREEDER, or DEALER IN RAMS.

* Mr. B. letting two more, the same day, at seventeen shillings and sixpence each.

The conditions of letting.

The prices given.

Treatment after letting.

Sending them out.

Method of using them.

Expected treatment while out.

Treatment after their return.

The principal rambreeders save, annually, twenty, thirty, or perhaps forty RAM LAMBS; castration being seldom applied, in the first instance, to the produce of a valuable ram.

For, in the CHOICE of these lambs, they are led more by blood, or parentage, than by form; on which, at an early age, little dependence can be placed.

Their TREATMENT, from the time they are weaned, in July or August, until the time of shearing, the first week in June, consists in giving them every indulgence of keep; in order to push them forward for the show: it being the common practice to let, such as are fit to be let, the first season; while they are yet yearlings—provincially “sharhogs.”

Their first pasture, after weaning, is pretty generally, I believe, clover that has been mown early, and has got a second time into head: the heads of clover being considered

as a most forcing food of sheep. After this goes off, turneps, cabbages, colewort, with hay, and, report says, with corn. But the use of *this* the breeders *severally* deny; though, *collectively*, they may be liable to the charge.

This being as it may, something considerable depends on the ART OF MAKING UP,—not lambs only, but rams of all ages. Fat, like charity, covers a multitude of faults; and, beside, is the best evidence, their owners can produce, of their *fatting quality*,—their natural propensity to a state of fatness: while, in the fatness of the sharhogs, is seen their degree of inclination to fat, at an *early age*.

Fatting quality being the one thing needful, in grazing stock, and being found, in some considerable degree at least, to be hereditary,—the *fattest rams* are of course the *best*; though other attachments, well or ill placed, as to *form*, or *fashionable points*, will perhaps have equal or greater weight, in the minds of some men: even in this enlightened age and district.

The shearlings which will not make up, sufficiently, as to form and fatness, are either kept on, to another year, to give them a fair chance, or are castrated, or butchered, while sharhogs.

SHOW-

SHOWING. The shows of the principal breeders consist, by common consent, of forty rams each; mostly from one to five years old; they being seldom found efficient, after that age: some, however, will continue in vigour to the sixth or seventh year*.

During the show, they are mostly kept in small inclosures, of two, three, or four acres; with three, four, or more rams in each; according to their ages, and the advancement of the season.

In a corner, or other convenient part of each paddock, a small pen, made with hurdles, is placed; for the purpose of handling them. Into these pens they go, through custom, as tractably, as worked oxen to their stalls. Indeed, the old rams, from the unwieldiness

* Even at these ages, however, the decay of vigour is not *natural*; but is brought on, prematurely, by the unnatural state of fatness in which they are kept, and of which a variety of diseases, as well as a general unwieldiness of frame, are inevitable consequences. Female sheep are found to be prolific to a greater age.

It is observable, however, that the females, as well as the males, of the breed under notice, enter the stage of decay, sooner than those of other breeds. This circumstance is accounted for, in their entering the stage of fatness, sooner than other sheep.

wieldiness of their frame, and the load of fat they have to carry, at this season, as well as from habit, will suffer themselves to be handled abroad: and even appear to take a pleasure in the respect which they have shown them.

Of late, a *new method of showing* has been struck out, by the leading breeder, and adopted by *one*, at least, of his followers. Instead of showing them, abroad, and driving three or four of them up together, into a pen, they are shut up in hovels, and brought out, separately; *being never seen together.*

Among accurate judges, this mode of showing may be well enough; but, to those who have had less experience, it gives offence; as it deprives them of their best guide, comparison; and I can see no fair advantage accruing from it to the letter.

The desirable POINTS of a ram are those which have been already enumerated. But the *choice of the hirer* is determined, in some measure, by the intention for which he is about to hire; as whether it be that of getting *wedders*, or mere grazing stock; or *rams*, for the purpose of letting. Hence the *grazier*,

zier, and the *rambreeder*, choose different sheep*.

The characteristic difference between what is termed a “RAMGETTER,” and a “WEDDERGETTER” or a “good grazier’s sheep,” is that of the former being everywhere cleaner, finer: the head small, the bone and offal light, the flesh good, and the form beautiful. The mere grazier likes a ram no worse, for having a strength of frame, and is less scrupulous about his form, than the rambreeder, whose great object is fineness: his ewes, and the natural tendency of the breed, serve to give his offspring size and substance †.

LETTING. A novel circumstance has likewise taken place, lately, in the business of letting. The long established custom of *setting a price* is exploded; at least, by Mr. Bakewell

* There is, however, one general guide, common to them both, and to which the judicious part of both pay some attention; namely, the imperfections of their ewes. In whatever quality or point they are most deficient, a ram possessing that particular quality or point, ought certainly to be chosen.

† Some, however, set aside this distinction; and, if there be no possibility of breeding grazing stock too fine, they are undoubtedly right.

Bakewell and one of his disciples; whose customers are now left to make their own valuations, and—bid what they please.

This, as well as showing them separately, gives great offence; especially to strangers; who cannot brook the idea of being “both buyers and sellers.”

The letter, however, has more than one advantage, in reserving the price (provided he do not thereby drive away his customers): he is, in effect, letting to the best bidder. Beside, he is, through this mean, enabled to *regulate his prices to his customers*, without giving any of them *pointed* offence.

The principal breeders are, in the nature of their business, competitors; and it is no more than common good policy, in the leader at least, to advance himself, and keep back those who press upon him closest. It is therefore good management, in him, to let a superior ram to an inferior breeder, whose ewes are yet of base blood, at a lower price, than to one who is farther advanced, and whose ewes, perhaps, are nearly equal to his own: for, if the hirer may not thereby be able to get the lead from him, he may run away with part of the best prices; and the
only

only line, the leader has to tread, is, either to refuse him, or to make him pay in the first instance. And, again,—sometimes two or three capital breeders will join, in the hiring of one superior ram; and, in this case, the blood being more widely dispersed, the price ought to be, and always is advanced, in proportion to the number of partners.

Hence, *in the leader*, a reservation of price may be allowable; especially in the letting of first-rate rams.

CONDITIONS OF LETTING. Notwithstanding the number of years the letting of rams has now been in use, and the extraordinary height to which the prices have risen, the transaction does not appear to have received, yet, any settled form; nor to have been rendered *legally* binding, by any written articles, or conditions of letting; much being still left to the *honor* of the parties.

It is, however, generally understood, that the price agreed upon shall not be paid, unless the ram in contract, “*or another as good*,” impregnate the stipulated number of ewes. If, through accident or inability, part only be impregnated, a proportional part of the price

price is abated. If he die while at ride, the loss falls on the letter, whether his death happen through accident or neglect: no *case*; I understand, having yet been otherwise determined.

It is likewise understood, that the hirer shall not suffer him to serve any other than his own ewes: and, of these, no more than a stipulated number, which is proportioned to the age or ability of the ram, and the mode of using him. And further, that if a grazier hire a valuable ram, at a *weddergetter's* price, (which is not unusual at the wane of a season, when valuable rams happen to be unlet) it is understood—or rather agreed—that he shall not rear *rams* from him: a condition which may frequently be advantageous to both parties. The letter pockets five or ten guineas, which otherwise he might not have had; and the hirer, by suffering himself to be “tied down” as it is termed, gets a greater improvement in his stock, than otherwise he could have got, for the same money.

The time of paying the money is, I understand, unfixed: seldom, I believe, until after the ewes have brought proofs of the ram's efficiency.

THE PRICES FOR RAMS, BY THE SEASON. From the first letting (see page 374.) to the year 1780, the prices kept gradually rising, from *sixteen shillings* to a *guinea*; and from one *guinea* to *ten*. In 1780, Mr. BAKEWELL let several at *ten guineas* each; and,—what is *rather* inexplicable,—Mr. PARKINSON of Quarndon, let one, the same year, for *twenty-five guineas*: a price which then astonished the whole country*.

From that time, to 1786, Mr. Bakewell's stock rose rapidly, from ten to a *hundred guineas*; and, that year, he let two thirds of one ram (reserving one third of the usual number of ewes to himself) to two principal breeders, for a hundred guineas each; the entire services of the ram being rated at *three hundred guineas*! Mr. Bakewell making that year, by letting twenty rams only, more than a thousand pounds!!

Since that time; the prices have been still rising. *Four hundred guineas* have been repeatedly

* This ram was of the Dishley blood: but, though he was let at this superior price, and to a man of superior judgement, he did not long preserve the lead. Mr. Bakewell has been the greatest gainer by the circumstance; by which, in much probability, he has profited some thousand pounds.

peatedly given*. Mr. Bakewell, this year, (1789) makes, I understand, twelve hundred guineas, by three rams (brothers, I believe); two thousand of seven, and, of his whole letting, full three thousand guineas!!! †

Beside this extraordinary sum made by Mr. Bakewell, there are six or seven other breeders, who make from five hundred to a thousand guineas each. The whole amount of monies produced this year, in the Midland Counties, by letting rams of the modern breed, for one season only, is estimated, by those who are adequate to the subject, at the almost incredible sum of TEN THOUSAND POUNDS.

It is, I know, a popular idea; especially of those who, living at a distance, have only heard of these extraordinary things, without having an opportunity of coming at facts; that the extravagant prices, which are talked of, are merely nominal; the principal part of the money being returned; the actual prices
given,

* Not, however, by individual breeders: three hundred have been given by an individual.

† Mr. B. now lets nothing under twenty guineas: a well judged regulation, which will probably be beneficial both to himself and his customers.

given, being small, in proportion to those held out.

This, however, is, I believe, and on the best authority, an erroneous idea. At the first setting out of the high prices, there might be some transactions of that nature; but, if they ever existed, they have ceased long ago. Mr. Bakewell, at present, has the name, at least, of being parsimonious, even to the shepherds of the flocks on which his rams are employed. His highest present, I understand, is five shillings; if the price be under fifty guineas, only half a crown.

The enormoufness of these prices may be explained on other grounds.

The *high* prices are not given, by GRAZIERS, for the purpose of getting WEDDERS, as grazing stock; but by RAMBREEDERS, for the purpose of getting RAMS, to be let to graziers: the *highest* being given by the PRINCIPAL BREEDERS, only; not for the purpose of getting rams, to be let to graziers, as WEDDERGETTERS; but for that of getting rams, to be let out again, to inferior tupmen, as RAMGETTERS.

The *grazier's prices* run, even now, from one to ten guineas. I have not heard of more than ten guineas being given, by a *mere* grazier, for a ram, for the *sole* purpose of getting grazing stock: five or six guineas is the common price.

Supposing he give the highest price, ten guineas, and that the ram serves a hundred ewes, or even gets a hundred lambs (some single some double,) the expence of getting amounts to no more than two shillings, a head; which is inconsiderable, compared with the difference, between a well and an ill grazing sheep: between a sheep that will get as fat, at two years old, as another will, at three: or, in other words, which will, at two years and a half old, fetch ten or fifteen shillings more than his comrades, of another breed, but of the same natural size, and going in the same pasture*.

The *middle prices*,—as those from twenty to fifty guineas,—are, *under present circumstances*, equally reconcilable to common sense. If a breeder, who gives fifty guineas, rear ten tolerable rams, fit for the grazier's use, and let them at five guineas each, he
brings

* See MIN. 30.

brings himself home, even the first season of letting; beside having the rams for another and another season; and beside a general improvement in his stock.

Those who give the *higher prices*,—a one to two hundred guineas,—have, or ought to have, proper bases to build upon—sufficient stocks of well bred ewes: in which case, they have a fair chance of producing ramgetters, worth—while the present spirit of improvement lasts—twenty to fifty guineas a season*.

With respect to the *very high prices*, they are given by a few first-rate breeders, who are playing a high game—running a hard race—for the pride and profit of being leader, when Mr. Bakewell is *not*. A contention which may last as long as Mr. Bakewell; and be, at once, an honor to his genius, and a reward of his services.

C C 2

TREAT-

* There are instances, though they are not very common, of the more valuable rams being kept, as stallions; the owners taking in ewes to be served by them. The *price by the ewes*, ten to sixty guineas a score.

It is likewise in practice, especially on letting the more valuable rams, for the letter to reserve a stipulated number of ewes to himself; either using the ram before he be sent out, or sending the ewes to the hirer's grounds.

TREATMENT OF RAMS AFTER LETTING. The breeders of rams, as well as of bulls, find it expedient to reduce them, from the cumbrous state in which they are shown, previously to the season of employment; the old rams, in particular, being frequently returned upon their hands, non-efficient. Hence, as they are let, they are transferred to *private* pastures, and moderate keep; it being a pretty general rule not to *show* a ram, after he is *let*.

SENDING OUT LET RAMS. The usual *time*, of beginning to send out, is the middle of September. The *means of conveyance*—carriages of two wheels, with springs, or hung in slings; some of them being large enough to hold four rams. In these, they travel from twenty to thirty miles, a day: being sometimes sent, in this way, two or three hundred miles.

The METHOD OF USING these rams has lately received a very great improvement.

Instead of turning the ram, loose, among the ewes, at large, as heretofore, and agreeably to the universal practice of the island,—he is kept apart, in a separate paddock or small inclosure, with a couple of ewes only,

to make him rest quietly; having the ewes of the flock brought to him, singly; and leaping each, only once.

By this judicious and accurate regulation, a ram is enabled to impregnate near twice the number of ewes, he would do, if turned loose among them; especially a young ram.

In the old practice, sixty or eighty ewes were esteemed the full number for a ram: in the new, from a hundred to a hundred and twenty are allowed: seven score have been served by one ram in a season.

THE EXPECTED TREATMENT OF A RAM AT RIDE, is merely that of keeping him well, and free from disorders, suffering him to serve no other than the hirer's own ewes, and of these the limited number only, and to return him, safe, when he has done; generally, the beginning of December; or, if the hirer has met him on the road (which is customary), the latter, in return, meets him on his journey home.

The AFTER TREATMENT consists in striving, by every devisable means, to reload his carcase, and make him fat and handsome, for the ensuing show.

EWES. The *size of breeding flocks*, viewing the district at large, is various. Some GRAZIERS, namely, men who breed for their own grazing, keep five or six hundred ewes. But the ewe flocks of the RAMBREEDERS of the modern breed (of which, only, I shall speak) run generally from one to two hundred.

In the MANAGEMENT OF EWE FLOCKS, there is no mystery, I believe; nor have I met with any thing extraordinary in it, or strikingly different from that of other breeding flocks. The management of ewe flocks, however, being a subject which has not yet entered fully into these registers, it will be introduced with singular propriety, in this place.

The subject divides, analytically, into

The choice of ewes.

Their summer treatment.

The time of admitting the ram.

Their winter treatment.

Their attendance at lambing time.

Their treatment after lambing.

Weaning the lambs.

Treatment of ewe lambs.

Culling the aged ewes.

In the CHOICE OF EWES, the breeder is led by the same criterions, as in the choice of rams. *Breed* is the first object of consideration. Excellency, in any species or variety of livestock, cannot be attained with any degree of *certainty*, let the male be ever so excellent, unless the females employed, likewise inherit a large proportion of the genuine blood; be the species or variety what it may. Hence, no prudent man ventures to give the higher prices, for the Dishley rams, unless his ewes are deeply tinged with the Dishley blood.

Next to breed is *flesh, fat, form, and wool*.

With ewes possessed of these qualities, in any tolerable degree, and with a ram of the same description, good WEDDERGETTERS, at least, may be bred, with a degree of certainty; and with those, in a higher degree, accompanied with a superior degree of neatness, cleanness, fineness, and with a ram of this description, RAMGETTERS may be reasonably expected.

SUMMER TREATMENT OF EWES. After the lambs are weaned, the ewes are kept in common feeding pieces, at moderate keep; without any alteration of pasture, previously to their taking the ram.

The usual TIME OF ADMITTING THE RAM is, as has been intimated, about new Michaelmas; sooner or later, according to circumstances.

The WINTER TREATMENT consists in keeping them, well, on grass, hay, turneps, and cabbages: no difference, I understand, being made in their keep, previous to the time of lambing. But see YORKSHIRE, as above*.

With respect to ATTENTION AT LAMBING TIME, it may be taken for granted, that, where the loss of a single lamb may, possibly, incur the loss of a thousand guineas, no attendance or attention is spared.

The ewes of the modern breed, however, lamb with less difficulty, I understand, than those of most other breeds of longwooled sheep †; the heads of the modern breed being much finer. Their shoulders, I understand, are the most common cause of obstruction.

TREAT-

* The alterations of keep, that are here intimated, may, however, be less requisite, in the management of the flocks, now more immediately under notice, which are always at full keep, than in that of more ordinary and lower kept flocks.

† See NORFOLK, *MILK*. 76.

TREATMENT AFTER LAMBING. From the time of lambing, to the time of weaning the lambs, the ewes are treated with every indulgence of food: not more on account of a general desire to push the lambs forward, than on that of the ewes of this breed being, generally, bad nurses;—deficient in milk.

As the modern breed of Midland cattle “run to beef,” its modern breed of sheep “run to mutton;” and from the same cause; a natural propensity, of extraordinary strength, to a state of fatness. I saw a ewe, in the flock of a principal breeder, which, though she had reared two lambs, was, in the beginning of August, in a high state of fatness. The fact was, that, at weaning time, the latter end of July, this ewe was entirely dry, and how long she had been so, was not then to be ascertained.

This property of the modern breed is not held out as a charge against them: it is, on the contrary, a circumstance that appears, to my mind, much in their favor. The use of the milk of ewes (in England at least) is merely that of rearing their lambs; and is not, like that of cows, extended to the dairy. If a ewe can keep her lamb, on milk, until
it

it can keep itself, on herbage, she has, to a store lamb at least, done her duty. More than will effect this is superfluous, and sometimes inconvenient or dangerous; and is, no doubt, a check to her thriving.

WEANING. The *time* of weaning is the latter end of July, or the beginning of August.

Previous to the separation, the lambs are, or ought to be, *identified*, by ear-marking, or otherwise *; to guard against accidents, and the imperfections of the memory.

It is true, an experienced and attentive shepherd requires no other distinguishment, than their natural forms and countenances; which, from a continued attendance, become as familiar to him, as the persons and faces of his neighbours. There are shepherds, not in this district only but in others, who are able to couple the ewes and lambs of their respective flocks; drawing them from two separate pens, one containing the ewes, the other the lambs; scarcely mistaking a single countenance. But the overseer of a plantation

* For the sire, the ear is generally marked: for the dam, ochre, or pitch, is used; marking the ewe and her lamb, previously to the weaning, in the same part, or with the same number, or letter.

tation knows every negro upon it, though they are in a manner naked ; and an officer, every soldier of his regiment, though their dresses are exactly the same.

TREATMENT OF THE EWES LAMBS. The female lambs, on being weaned, are put to good keep, but have not such high indulgence shewn them as the males: the prevailing practice being to keep them from the ram, the first autumn.

CULLING THE EWES. At weaning time, or previously to the admission of the ram, the ewes are culled, to make room for the "thaves," or shearlings, whose superior blood and fashion entitle them to a place in the breeding flock.

In the work of culling, the **RAMBREEDER** and the mere **GRAZIER** go by somewhat different guides. The grazier's guide is principally *age* ; seldom giving his ewes the ram after they are four shear. The ram-breeder, on the contrary, goes chiefly by *merit* : a ewe that has brought him a good ram or two, is continued in the flock, so long as she will breed : there are instances of ewes having been prolific, to the tenth or twelfth year ; but, in general, the ewes of this breed go off, at six or seven shear.

In the practice of some of the principal rambreeders, the "culling ewes" are never suffered to go out of their hands, until after they are slaughtered: the breeders not only fatten them, but having them butchered, on their premises.

There are others, however, who sell them; and, sometimes, at extraordinary prices. Three, four, and even so high as ten guineas, each, have been given for these outcasts.

There are, in the flocks of several breeders, ewes that would fetch, at auction, twenty guineas each. Mr. Bakewell is in possession of ewes, which, if they were now put up, to be sold to the best bidder, would, it is estimated, fetch no less than fifty guineas each; and, perhaps, through the present spirit of contention, much higher prices.

It is now, I understand, in agitation TO LET EWES BY THE SEASON, in the manner rams are let.

Where this spirit of breeding will end, or what will be its effects, time only can determine.

III. FATTING SHEEP. The fattening of sheep is a subject new to this work. The
outline

outline of the practice may, therefore, be sketched, with singular propriety, in this place ; immense numbers being fatted, every year, in the Midland District.

The subject divides into the following branches :

Situation and soil.

Materials of fattening.

Description of sheep.

Mode of obtaining them.

Management during possession.

Markets.

Produce.

SITUATION. The MIDLAND DISTRICT has been described, as a well soiled middleland tract ; chiefly in a state of grass ; but with an intermixture of arable land ; especially in the DISTRICT of the STATION.

But the more GRAZING part of the district, namely, South and East LEICESTERSHIRE, with the ADJOINING MARGINS of Rutlandshire, Northamptonshire, and Warwickshire, consist chiefly of large grass "feeding pieces," which are most of them stocked with a great proportion of sheep.

The MATERIALS OF FATTING are principally *grass* and *hay* ; with some few *tur-*
neps

neeps and *cabbages* ; but, even in the District of the Station, the two latter can scarcely be said to enter into the ordinary practice of the country.

The DESCRIPTION OF SHEEP varies with the system of management : in the DISTRICT of the STATION, the prevailing stock is *culling ewes*, partly of the *longwooled*, and in part of the *shortwooled* breed, as has been already mentioned, at the head of this section.

But, in the more GRAZING parts of the Midland District, the *longwooled* breed, and mostly *two-shear wedders*, with a proportion of *culling ewes*, are almost the only description of fatting sheep.

The MODES OF OBTAINING these several sorts of sheep are various. The “ graziers ” many of them *rear* a considerable part of their stock ; others *purchase* wedder lambs of the breeders who do not “ graze.” On the contrary, the arable “ farmers ” most of them *purchase* ; excepting some leading men, who, having adopted the modern breed, *rear* their own stock of grazing sheep.

The places of purchase, of the shortwooled ewes, have been mentioned to be, principally,

pally, the fairs of Shropshire and Staffordshire : Dudley is the most noted place for these sheep. The longwooled ewes, which are fatted in *this* district, are purchased at the autumnal fairs of the neighbourhood ; but more particularly, at the market of Tamworth ; to which, in autumn, they are brought, weekly ; some out of Gloucestershire ; but mostly out of Leicestershire, and chiefly by one dealer ; who brings some thousand sheep, every year, into the district.

It is observable, that, in the lots of these two descriptions of sheep, individuals of all sizes and all ages, from a thave to a crone, are intermixed ; no other separation being made, than that of keeping the two sorts distinct. This circumstance, however, disgusting as it may be to a stranger, who has been used to see sheep sorted, agreeably to their ages, is the cause of less inconveniency, inasmuch as they are all of them equally intended to be fatted, in the course of the ensuing summer.

In the *choice* of grazing sheep, graziers differ, and in the most essential points. While one man is choosing a lot, for their neatness and cleanness from offal, another buys a pen
of

of "rare strong boney sheep;" of which description the markets of longwooled sheep principally consist.

The MANAGEMENT OF FATTING SHEEP.

The *ewes* have the *ram* about Michaelmas, or later: some before, some after they are purchased. Grass being the only dependence, here, for ewes and lambs; it is thought bad management to bring the lambs too early in the spring.

The *keep* varies with the stock. The wedders, the first year, while shearlings, and the ewes the first winter, are kept as store stock*; but the ewes, from the time of lambing, and the wedders, the second summer, are of course at prime keep; the first wedders reaching market, about September. The culling ewes are seldom ready, until the ensuing spring.

The method of *stocking* has been mentioned, to be that of mixing them with fat-
ting

* Little or no FOLDING is done, in the Midland District: I do not recollect seeing one instance; except in a light sandy field (Queniborough's) between Leicester and Melton. In this case, the hurdles were set leaning outward, and propped with forked props, as in Gloucestershire: not set upright, in the ground, as in most districts.

ting cattle, or dairy cows, in the proportion of two to one: and, taking the district throughout, this may be the nearest proportion; but, in some of its more grazing parts, I have observed large tracts of ground, which appeared to be stocked chiefly with sheep; the proportion of cattle being small*.

The only circumstance that requires particular notice, in the *management of ewes and lambs*, is that of the lambs being, sometimes, taken from the ewes, before they are fit for the butcher; and fattened, without the ewes, on clover, or other prime keep, a novel practice in grazing.

The leading principle, at least, is good. The ewes, of course, come sooner to market, than they would if the lambs remained with them a longer time: and those who practise this method say, that, after the first flush of milk is gone, the lambs thrive better, on grass alone, away from the ewes, than they would if kept with them; by reason of their hanging after a little milk, in this case, which prevents their feeding freely on herbage.

* These, however, are, I believe, chiefly store sheep, on the most ordinary land, too weak for grazing bullocks.

I register this, not as the prevailing practice of the district, but as that of some intelligent judicious managers, who would not follow it, if they, themselves, were not convinced of its eligibility*.

In the SHEPHERDING of sheep, in this country, a few circumstances may be mentioned with propriety.

Trimming the buttocks in the spring, provincially "*belting*," in this district, and "*dagging*," in the grazing country, is well attended to; and the produce turned to profit. There are graziers, keeping perhaps some thousand sheep, of different descriptions, who

* **FATTING LAMBS ON HERBAGE.** The keep of the lambs, in this case, ought certainly to be extraordinary; as raygrass and white clover, early; and red clover in head, later in the summer.

An improvement of this method is evident, Ewes vary, exceedingly, in the time of losing their milk; and to take away those lambs, whose dams are yet in full milk, is selfevidently wrong; as removing those, whose dams are deficient in milk, from the ordinary pasture of the ewes, to better food, is more than probably right. Hence, examining the ewes, from time to time, and removing the lambs from such as are found deficient, appears evidently, to be the line of right management.

Rambreeders, at least, might, it is more than probable, profit by such a practice. Many of the ram lambs, at weaning time, appear in very low condition.

who will make up a pack or two of “daglocks,” yearly! The locks are washed, spread on the ground to dry, and packed up like fleece wool: a *new* species of marketable produce; which is used, I understand, chiefly in the carpet manufactories.

As a *preventive of the fly*, the Midland shepherds use various applications; especially to the lambs. Train oil is found to be efficacious; but it fouls the wool, and makes the sheep disagreeable to touch. An ointment made of butter and the flowers of sulphur seems to be in the best repute*.

Insects certainly have their antipathies, and to find out those of the sheep fly is an interesting subject of enquiry,

The method of *destroying maggots*, here, is effectual; and, if applied in time, simple and easy. Instead of cutting the wool off the part affected, and scraping off the maggots,

D d 2

with

* The butter being melted, a sufficiency of brimstone is stirred into it, to form an ointment of a pretty firm consistency. In application, a piece the size of a small walnut is rubbed between the hands, and these drawn along the backs of the sheep.

There are some nostrums, in the shops, sold for this purpose; but those whose effects I have had an opportunity of observing, discolor the wool.

with the points of the shears, the wool is parted, and the maggots picked out with a knife, — or otherwise dislodged, — without breaking the coat; and a small quantity of white lead scraped, from a lump, among the wool; which being agitated, the powder is carried evenly down to the wound. Too much discolors the wool; a little prevents any farther harm from the maggots, that may still be lodged among it; driving them away from the wound; and, at the same time, is found to promote its healing. In well shepherded flocks, which are seen regularly twice a day, there is no appearance of a broken coat.

Artificial *wash pools* are here common. In some countries, sheep are driven, perhaps two or three miles, to the wash pool: a practice which is not only inconvenient to the shepherd, but dangerous to the sheep. Here, the smallest rill is rendered subservient to the purpose of washing sheep. In a convenient part, a wall is built across the rivulet, with an opening in the middle, to let the water pass, in ordinary; and with a small floodgate fixed in the opening, to stop it occasionally. On one side, is the pen; and, on the other, a paved

paved path, for the sheep to walk up, out of the pool.

With respect to *shearing*, I have met with nothing noticeable ; except the extreme neatness with which the sheep of this district are sometimes shorn ; especially the show rams.

MARKETS FOR FAT SHEEP: The markets, for *carcases*, have been mentioned : *London*, for the wedders ; &c. fatted in the southwestern quarter : *Birmingham*, &c. for the ewes and lambs, fatted in the district of the station.

The markets for *wool* are various. Heretofore, most of it has been bought up, by woolstaplers, living in different parts of the district. Some of it is sorted ; and, what is not wanted for the manufactures of the district (namely, hosiery in Leicestershire, and coarse worsteds in Northamptonshire), is sent to the distant manufactories, for which it is suitable.

But, of late years, the manufacturers, themselves, from Yorkshire and other districts, have bought up some share of the wool, immediately of the growers.

The

The *price* of “pasture wool,”—namely, of the wool of the longwooled sheep of this country,—has been, during the last seven years, sixteen to twenty shillings, a tod, of twentyeight pounds. The price, this year (1789) rose from seventeen to nineteen shillings;—with scarcely any distinction as to quality! though, to the sorter or the manufacturer, it may vary several shillings, a tod. But the “breaking” of wool is a mystery, which lies not within the province of the grazier.

PRODUCE OF FATTING SHEEP. The widders, in eighteen or twenty months, are expected to pay, on a par of years, ten to twelve shillings, a head, in *carcase*; besides two coats of *wool*, worth five or six shillings each; together, twenty to twentyfive shillings; or about threepence halfpenny, a head, a week.

The ewes and lambs, of the longwooled breed, pay more. Suppose the improvement of the ewe seven or eight shillings, and the produce of the lamb as much, with the fleece of the ewe four or five shillings; together twenty shillings,—for twelve or fourteen months

months keep of the ewes, and two or three months of the lambs.

The shortwools are allowed to pay still better, but they are wilder, and more mischievous; and are chiefly in the hands of the smaller farmers. The Shropshire wool, however, though fine, is very light: the ewes seldom yielding more than one to two pounds, each fleece; worth, perhaps, from a shilling to eighteen pence, a pound; or about two shillings, a fleece.

REFERENCES TO MINUTES.

For a striking *accidental variety* of sheep, see MIN. 60.

For observations on the *fattening* of young sheep, 105.

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