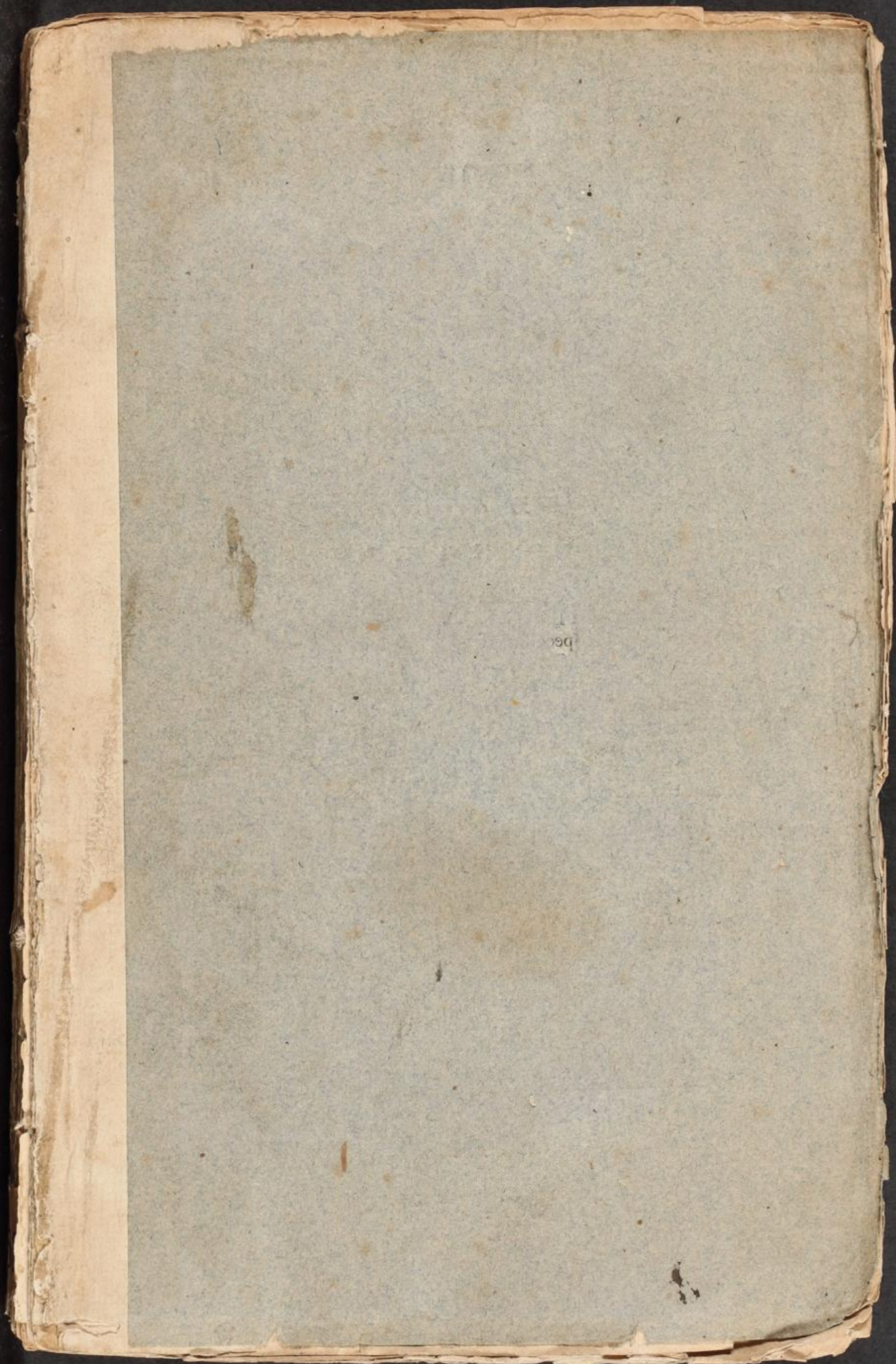




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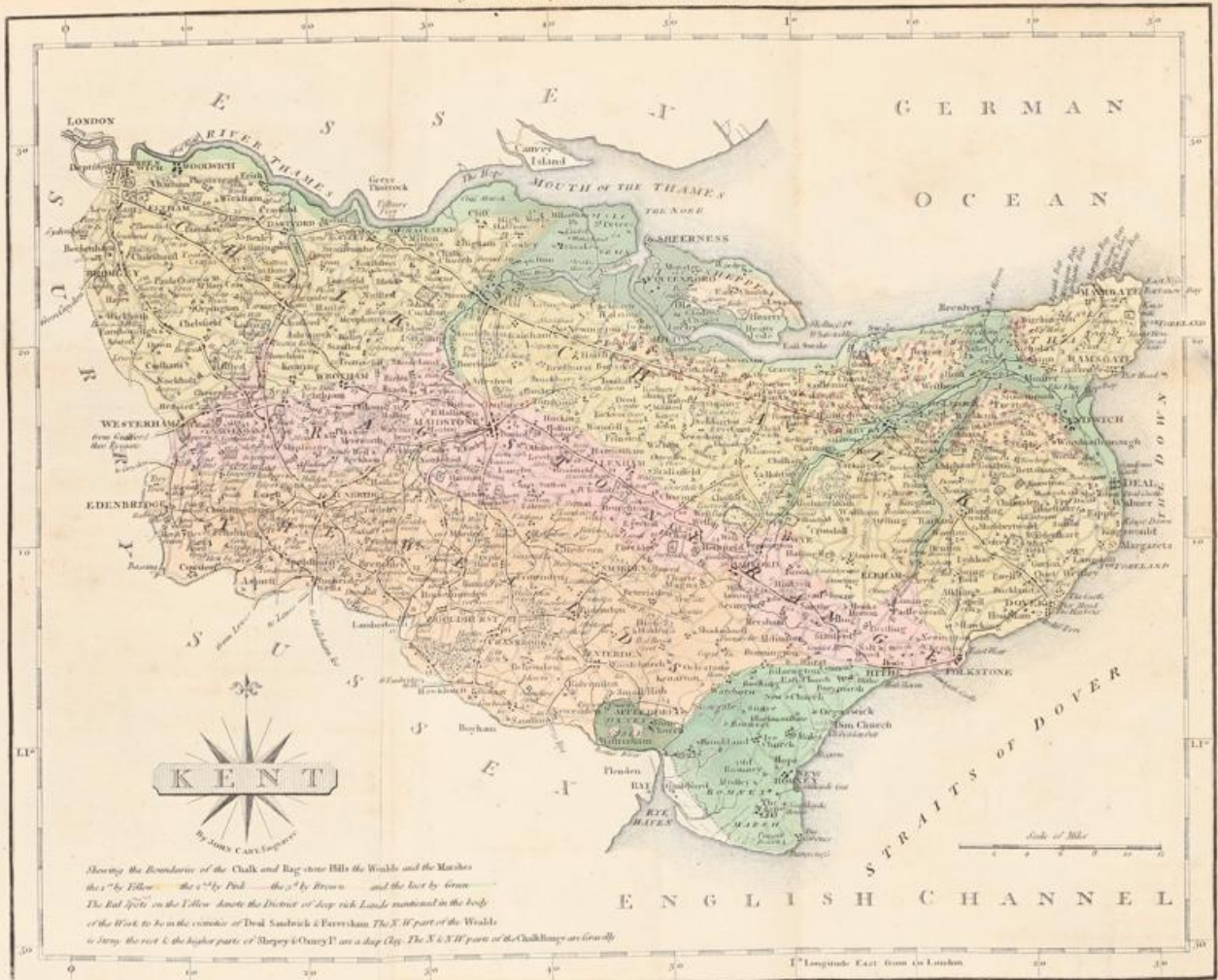
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GENERAL VIEW
OF THE
AGRICULTURE
OF THE
COUNTY OF KENT,
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A
GENERAL VIEW
OF THE
AGRICULTURE
OF THE
COUNTY OF KENT;

WITH
Observations on the Means of its Improvement.

Drawn up for
The Consideration of the Board of Agriculture
AND INTERNAL IMPROVEMENT,
From the original Report transmitted to the Board;
WITH ADDITIONAL REMARKS OF SEVERAL RESPECTABLE COUNTRY GENTLEMEN AND FARMERS.

By John Boys, of Betsbanger, Farmer.

Kent, in the Commentaries Cæsar writ,
Is term'd the civil'st place of all this isle;
Sweet is the country, because full of riches,
The people liberal, valiant, active, wealthy.

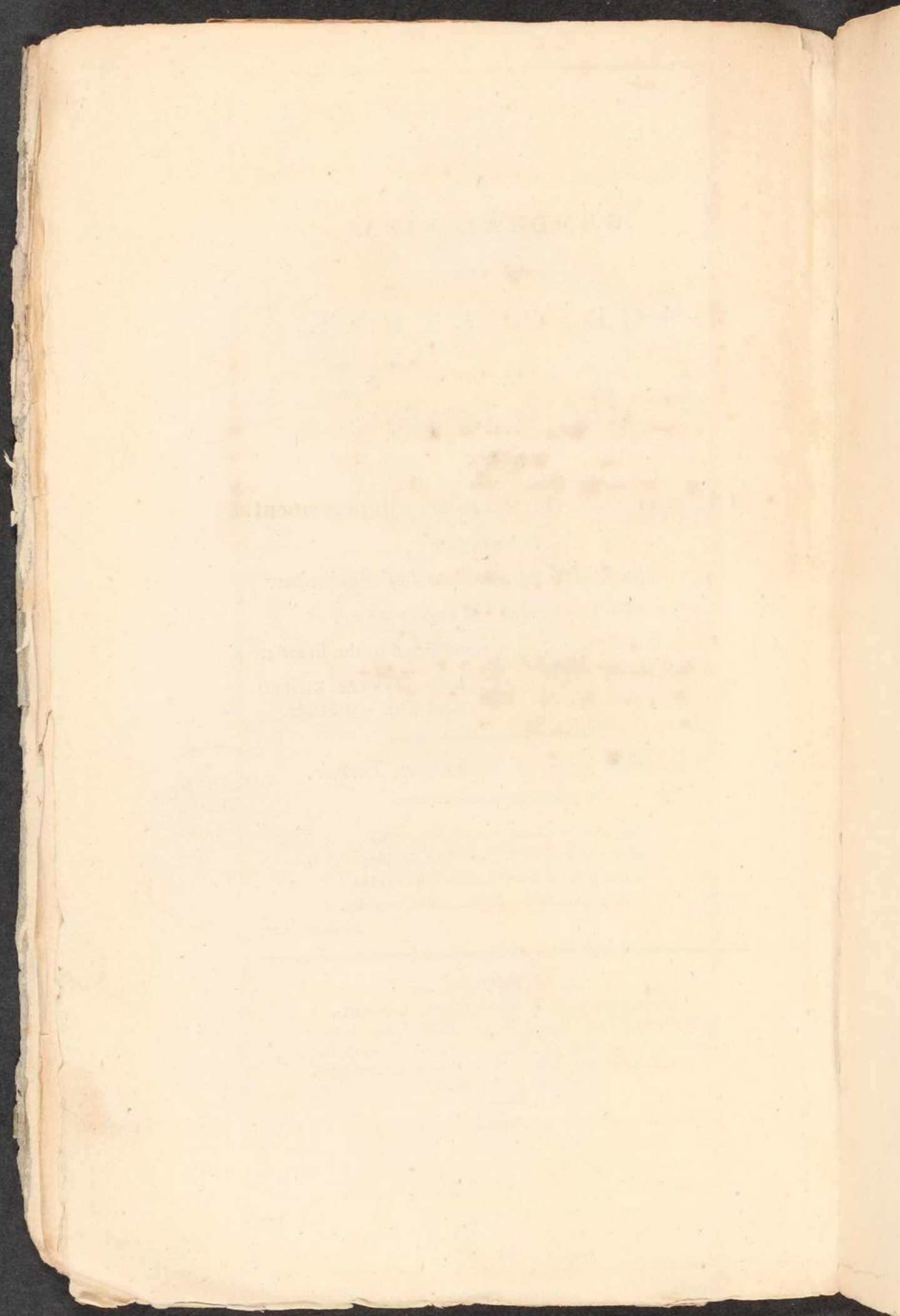
SHAKSPEARE



L O N D O N :

PRINTED FOR G. NICOL, PALL-MALL,
Bookseller to his Majesty, and the Board of Agriculture;
and sold by Messrs. Robinson, Paternoster-row; J. Sewell, Cornhill;
Cadell and Davies Strand; William Creech, Edinburgh;
and John Archer, Dublin.

1796.



ADVERTISEMENT.

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

N. B. *Letters to the Board may be addressed to Sir JOHN SINCLAIR, Bart. the President, M. P. London.*

London, Jan. 1796.

P L A N
FOR REPRINTING THE
Agricultural Surveys.

By the PRESIDENT of the BOARD of AGRICULTURE.

A BOARD established for the purpose of making every essential enquiry into the Agricultural State, and the means of promoting the Internal Improvement of a powerful Empire, will necessarily have it in view to examine the sources of public prosperity, in regard to various important particulars. Perhaps the following is the most natural order for carrying on such important investigations; namely, to ascertain,

1. The riches to be obtained from the surface of the national territory;
2. The mineral, or subterraneous treasures, of which the country is possessed;
3. The wealth to be derived from its streams, rivers, canals, inland navigations, coasts, and fisheries; and,
4. The means of promoting the improvement of the people, in regard to their health, industry, and morals, founded on a *statistical* survey, or a minute and careful enquiry into the actual state of every parochial district in the kingdom, and the circumstances of its inhabitants.

Under one or other of these heads, every point of real importance that can tend to promote the general happiness of a great nation, seems to be included.

Investigations of so extensive and so complicated a nature, must require, it is evident, a considerable space of time before they can be completed. Differing indeed in many respects from each other, it is better perhaps that they should be undertaken at different periods, and separately considered. Under that impression, the Board of Agriculture has hitherto directed its attention to the first point only; namely, the cultivation of the surface, and the resources to be derived from it.

That the facts essential for such an investigation might be collected with more celerity and advantage, a number of intelligent and respectable individuals were appointed to furnish the Board with accounts of the state of husbandry, and the means of improving the different districts of the kingdom. The returns they sent were printed, and circulated by every means the Board of Agriculture could devise, in the districts to which they respectively related; and, in consequence of that circulation, a great mass of additional valuable information has been obtained. For the purpose of communicating that information to the public in general, but more especially to those counties the most interested therein, the Board has resolved to reprint the Survey of each County, as soon as it seemed to be fit for publication; and among several equally advanced, the counties of Norfolk and Lancaster were pitched upon for the commencement of the proposed publication; it being thought most advisable to begin with one county on the eastern, and another on the western coast of the island. When all these Surveys shall have been thus reprinted, it will be attended with little difficulty to draw up an abstract of the whole (which will not probably exceed two or three volumes quarto) to be laid before His Majesty and both Houses of Parliament; and afterwards, a general Report
on

on the present state of the country, and the means of its improvement, may be systematically arranged, according to the various subjects connected with agriculture. Thus, every individual in the kingdom may have,

1. An account of the husbandry of his own particular county; or,
2. A general view of the agricultural state of the kingdom at large, according to the counties, or districts, into which it is divided; or,
3. An arranged system of information on agricultural subjects, whether accumulated by the Board since its establishment, or previously known;

And thus information respecting the State of the kingdom, and Agricultural Knowledge in general, will be attainable with every possible advantage.

In reprinting these Reports, it was judged necessary that they should be drawn up according to one uniform model; and after fully considering the subject, the following form was pitched upon, as one that would include in it all the particulars which it was necessary to notice in an Agricultural Survey. As the other Reports will be reprinted in the same manner, the reader will thus be enabled to find out at once where any point is treated of to which he may wish to direct his attention.

PLAN OF THE REPRINTED REPORTS.

Preliminary Observations.

CHAP.

I. Geographical State and Circumstances.

SECT. 1.—Situation and Extent.

2.—Divisions.

3.—Climate.

4.—Soil and Surface.

5.—Minerals.

6.—Water.

II. State of Property.

SECT. 1.—Estates, and their Management.

2.—Tenures.

III. Buildings.

SECT. 1.—Houses of Proprietors.

2.—Farm - Houses and Offices, and
Repairs.

3.—Cottages.

IV. Mode of Occupation.

SECT. 1.—Size of Farms.—Character of the
Farmers.

2.—Rent—in Money—in Kind—in
Personal Services.

3.—Tythes.

4.—Poor Rates.

5.—Leases.

6.—Expence and Profit.

V. Implements.

VI. Inclosing.—Fences.—Gates.

VII. Arable Land.

SECT. 1.—Tillage.

2.—Fallowing.

3.—Rotation of Crops.

Chap.

Chap. VII. continued.

SECT. 4.—Crops commonly cultivated; their
Seed, Culture, Produce, &c. *

5.—Crops not commonly cultivated.

CHAP.

VIII. Grafts.

SECT. I.—Natural Meadows and Pastures.

2.—Artificial Grafts.

3.—Hay Harvest.

4.—Feeding.

IX. Gardens and Orchards.

X. Woods and Plantations.

XI. Wastes.

XII. Improvements.

SECT. I.—Draining.

2.—Paring and Burning.

3.—Manuring.

4.—Weeding.

5.—Watering.

* Where the quantity is considerable, the information respecting the crops commonly cultivated, may be arranged under the following heads :

1. Preparation. { tillage, manure. }	6. Culture whilst growing { hoe, weeding, feeding. }
2. Sort.	7. Harvest.
3. Steeping.	8. Threshing.
4. Seed (quantity sown.)	9. Produce.
5. Time of sowing.	10. Manufacture of bread.

In general, the same heads will suit the following grains:

Barley. Oats. Beans. Rye. Pease. Buck-wheat.

Vetches .. - Application.

Cole-feed - { Feeding, }
 { Seed. }

Turnips -	{	Drawn	-	-	-
		Fed	-	-	-
		Kept on grafs.	-		
		— in houfes.			

CHAP.

CHAP.

XIII. Live Stock.

SECT. 1.—Cattle.

2.—Sheep.

3.—Horses, and their Use in Husbandry compared to Oxen.

4.—Hogs.

5.—Rabbits.

6.—Poultry.

7.—Pigeons.

8.—Bees.

XIV. Rural Economy.

SECT. 1.—Labour—Servants—Labourers—
Hours of Labour.

2.—Provisions.

3.—Fuel.

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

SECT. 1.—Roads.

2.—Canals.

3.—Fairs.

4.—Weekly Markets.

5.—Commerce.

6.—Manufactures.

7.—Poor.

8.—Population.

XVI. Obstacles to Improvement,

Including General Observations on Agricultural
Legislation and Police.

XVII. Miscellaneous Observations.

SECT. 1.—Agricultural Societies.

2.—Weights and Measures.

Conclusion.—Means of Improvement, and the Measures calculated for that Purpose.

Appendix.

PERFECTION

PERFECTION in such enquiries is not in the power of any body of men to obtain at once, whatever may be the extent of their views, or the vigour of their exertions. If Lewis XIV. eager to have his kingdom known, and possessed of boundless power to effect it, failed so much in the attempt, that, of all the provinces in his kingdom, only one was so described as to secure the approbation of posterity *, it will not be thought strange that a Board, possessed of means so extremely limited, should find it difficult to reach even that degree of perfection which perhaps might have been attainable with more extensive powers. The candid Reader cannot expect in these Reports more than a certain portion of useful information, so arranged as to render them a basis for further and more detailed enquiries. The attention of the intelli-

* See Voltaire's Age of Lewis XIV. vol. ii. p. 127, 128, edit. 1752. The following extract from that work will explain the circumstance above alluded to.

"Lewis had no Colbert, nor Louvois, when, about the year 1698, for the instruction of the Duke of Burgundy, he ordered each of the intendants to draw up a particular description of his province. By this means an exact account of the kingdom might have been obtained, and a just enumeration of the inhabitants. It was an useful work, though all the intendants had not the capacity and attention of Monsieur de Lamoignon de Bavière. Had what the king directed been as well executed in regard to every province, as it was by this magistrate in the account of Languedoc, the collection would have been one of the most valuable monuments of the age. Some of them are well done; but the plan was irregular and imperfect, because all the intendants were not restrained to one and the same. It were to be wished, that each of them had given, in columns, the number of inhabitants in each election; the nobles, the citizens, the labourers, the artisans, the mechanics; the cattle of every kind; the good, the indifferent, and the bad lands; all the clergy, regular and secular, their revenues; those of the towns, and those of the communities.

"All these heads, in most of their accounts, are confused and imperfect; and it is frequently necessary to search with great care and pains to find what is wanted. The design was excellent, and would have been of the greatest use, had it been executed with judgment and uniformity."

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gent Cultivators of the kingdom, however, will doubtless be excited; and the minds of men in general, gradually brought to consider favourably of an undertaking which will enable all to contribute to the national stores of knowledge, upon topics so truly interesting as those which concern the Agricultural Interests of their country: interests which on just principles never can be improved, until the present state of the kingdom is fully known, and the means of its future improvement ascertained with minuteness and accuracy.



P R E F A C E.

THE original Report having been printed by the Board of Agriculture, and circulated for the purpose of procuring additional remarks, was returned to me by the Board, with a variety of useful hints, observations, and corrections; of which I have endeavoured to avail myself in this publication, to the advantage, I trust, of those who may take the trouble of perusing it. It is still, however, not so complete as could be wished for; but a generous and candid public will excuse any imperfections to be found in it, however numerous, and will consider them as almost unavoidable, when it is known that it was originally the work of one individual, unlettered, and immersed in the cares of a numerous family, and an extensive business.

Neither

P R E F A C E.

Neither pains nor expence have been spared to procure information ; and the result is faithfully detailed. Having been brought up under a father who had the reputation of being a good practical farmer, and having been all my life engaged in the cultivation of different soils, and in grazing, I presume to think myself qualified to form opinions on the various systems of husbandry ; but when I recommend any practice, my readers may be assured that I do so, not from theory only, but from my own experience.

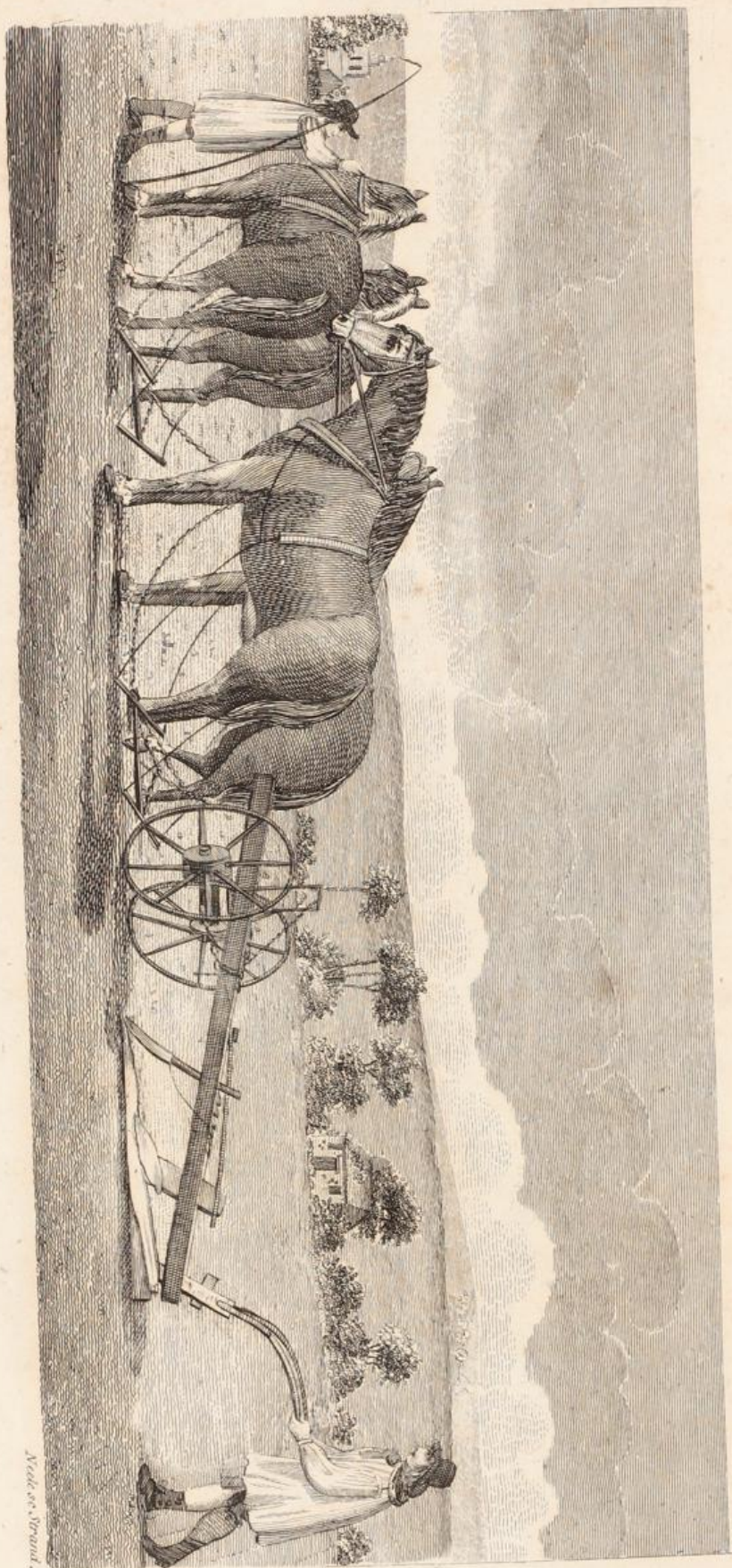
If the wealth and population of this Island may be expected to increase with the improvements that may be made in the cultivation of its soils to the utmost point of perfection, what glorious prospects are opened to our view, by the establishment of a Board of Agriculture, whose great object it will be to collect facts, diffuse knowledge, and reward excellence, in the department over which it is appointed by the wisdom of Parliament to preside !

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KENTISH TURN-WREST PLOUGH.

AGRICULTURAL SURVEY
OF
K E N T.

CHAPTER I.
GEOGRAPHICAL STATE AND
CIRCUMSTANCES.

SECT. I. — *Situation and Extent.*

THIS county forms the south-east angle or corner of the kingdom, and probably derives its name from that circumstance. Its figure is quadrilateral; and it is bounded on the north side by the river Thames, the county of Essex, and the German Ocean; on the south by the county of Suffex; on the east by the British Channel; and on the west by the county of Surrey.

It is about sixty-three miles in length, from Deptford to the point of the North Foreland, comprehending between these extremities about one degree and twenty-nine minutes of longitude; and measures on the east side, in a direct line from the North Foreland to Dengeness-Point, nearly forty miles, between the latitudes of 50° , $54'$ and 51° , $23'$, $20''$ north.

SECT. II. — *Divisions.*

THE county is divided into two grand districts, West and East Kent; the former containing the Lath of Scray; the other comprizing the Laths of St. Augustine and Shepway, with the upper division of Scray.

The county contains about fourteen hundred square miles, or eight hundred ninety-six thousand acres *, sixty-three hundreds, four hundred and thirteen parishes, two cities, twelve corporate towns, thirty-nine market towns, nine thousand freeholds, forty thousand houses, and two hundred thousand inhabitants.

It sends eighteen members to parliament, pays nearly a twenty-fourth part of the land-tax, and provides nine hundred and sixty men for the national militia.

Two chains of hills run through the middle of Kent, called the Upper and Lower; or, the Chalk and Gravel Hills. The northern range and whole north side of the county are composed principally of chalk and flints; the southern of iron and ragstone: more westerly, towards Surrey, clay and gravel prevail upon the eminences.

Below this last range lies the Weald: an extensive and nearly level tract of land, rich and fertile at some places; where fine pasturage and timber are produced.

The north part of Shepey is high ground; but it is mostly low and marshy on the south side, where two streams, running into the Swale, form the islets of Elmley and Harty.

Thanet had a full claim to the title of an island when

* By measuring all the sinuosities of the coast, I make the circumference of Kent 165 miles; but the proper boundary for ascertaining the contents cannot be more than 150 miles; which, reduced to a square of four sides, gives 1406,25 square miles, or 900,000 statute acres: from which should be deducted all the public waters, equal perhaps to ten square miles; which reduces the measure to 893,600 acres.

Note by William Boys, Esq.

the

the Rutupine Port was in its prosperity; but its pretension to the appellation is now barely kept up by a small sewer communicating with the Stour and the sea. The bed of that once famous harbour now forms valuable tracts of marshes, comprehending above twenty-five thousand acres. Thanet, including Stonar, contains nearly forty-one square miles, or about twenty-seven thousand acres.

The Rother rises in Suffex, and empties itself into the sea at Rye, forming the harbour of that port. It had formerly another outlet at Romney, the dry channel of which is still visible. From Rye it proceeds to Apledore, and then, by a curvature, forms the Isle of Oxney, which is about ten miles in circumference, and consists of a ridge of upland, running through its middle, and of low fertile marshes towards the river.

The Weald of Kent, before mentioned, was formerly covered entirely with woods †. It has now many small towns and villages; but is more thinly inhabited than the other parts of the county ‡, and of course much less cultivated.

Romney-Marsh is an extensive tract of rich marsh-land, at the south corner of the county, originally in-

† As a proof of this, the manors above the hill, which separate the middle of Kent from the Weald, have many of them a long slip of land each, reaching ten or twelve miles into the Weald; which farms pay quit-rents to them. *Note by a Middle Kent Farmer.*

‡ I do not think it less populous than the best cultivated parts of East Kent; which, consisting of large farms, the harvest-work of which, hoeing, &c. is done by labourers from other parts; whereas in the Weald it is otherwise; for being parcelled out generally into small farms, the whole work is done by the resident labourers and the farmers themselves: and this of course is in favour of its population.

Note by the same Middle Kent Farmer.

The public are much obliged to this Gentleman for a great number of very sensible and pertinent remarks; but in this instance, respecting the population of the Weald not being less than the best cultivated parts of Kent, he is certainly mistaken. *Editor.*

closed from the sea, by a strong wall, thrown up between the towns of Romney and Hythe.

Much of the Isle of Thanet was naturally very thin light land; but the greater part of it having belonged to the Religious, who were the wealthiest and most intelligent people, and the best farmers of the time, no pains or cost were spared to improve the soil. The sea furnished an inexhaustible supply of manure, which was brought by the tides to all the borders of the upland, quite round the island; and most likely was liberally and judiciously applied by the Monks and their tenants; and their successors to the present time, have not neglected to profit by their example. Owing to these circumstances, Thanet always was, and most likely always will be, famous for its fertility; and the Monkish tale of Thanet's deriving its superior fruitfulness from its having been the asylum of St. Augustine, is not so far from the truth as it may at first appear. Old historians said, "*Felix tellus Tanet sua fecunditate*;" and modern writers of husbandry speak of it as one of the finest gardens in the kingdom.

In short, is there another district in Great Britain, or in the world, of the same extent, in such a state of cultivation,—where the farmers are so wealthy and intelligent, where land, naturally of so inferior a quality, is let for so much money, and produces such abundant crops?

The whole island consisted formerly of ten parishes, *viz.* 1. St. Giles, *alias* Sarre, now united with 2. St. Nicholas at Wade; 3. Monkton; 4. Birchington; 5. Woodchurch; 6. Minster; 7. St. John the Baptist; 8. St. Peter the Apostle; 9. St. Laurence; and, 10. Stonore; and it contains about 3500 acres of excellent marsh land, and 23,000 acres of arable: all the lower part of the latter bordering upon the marshes, and some parts of the hill, where there is a good depth of earth, are exceedingly productive;

ductive; and the principal part of the remainder, altho' naturally a poor thin light mould on a chalky bottom, is made exceedingly fertile by the excellence of the system under which it is cultivated. By an exact account taken of Minster, in Thanet, January 1, 1774, there were found to be in that parish 149 houses, 696 inhabitants, viz. 359 males, and 337 females: of these, in sixteen farm-houses, inhabited by tradesmen, labourers, and widows, there were 249 males, and 280 females. The average number of inhabitants, male and female, to each farm-house is 10,4375; to each of the other houses 3,9774; and to the whole number of houses 4,67711. And by another account taken in 1773, of St. Lawrence, including Ramsgate which contains more than two-thirds of the houses and inhabitants of the whole parish, there were found in that parish 699 houses and 2726 inhabitants. And again in 1792, there were found 825 houses, and 3601 inhabitants: which is an increase of 126 houses, and of 875 inhabitants in that parish in nineteen years. The population in the latter period 4,369 per house.

That part of the county usually called East Kent, is of two kinds; one very open and dry, the other much inclosed with woods and coppices. The open part lies between the city of Canterbury and the towns of Dover and Deal; and the inclosed part of the tract extends from Dover, by Eleham and Ashford, to Rochester in length, and from the Isle of Shepey to Lenham, &c. in breadth. The chief of the woodlands of East Kent are dispersed between the great road from Rochester to Dover, and the chalk-hill that runs from Folkstone by Charing to Detling.

These woods furnish the country with fire-wood, tillers for husbandry uses, and the dock-yards with timber for ship-building; but the most material part of their

produce is the immense quantity of hop-poles cut out for the neighbouring plantations.

All that part of East Kent which lies within the vicinity of the towns of Faversham, Sandwich, and Deal, is mostly arable, extremely fertile, and under the most excellent system of management; which will be described in its proper place.

The Isle of Shepey is separated from the rest of the county by an arm of the sea, called the Swale, navigable for ships of 200 tons burthen. It is said to have derived its name from the number of sheep that were continually feeding on it. It is about eleven miles in length, and eight in its greatest breadth, and contains the parishes of

1. Minster, with the ville of Sheerness;
2. Queenborough, which sends two members to parliament;
3. East Church;
4. Warden;
5. Leydown;
6. Elmley, and its Isle;
7. Harty, and its Isle.

“ The land of this island rises from the shores of the
 “ rivers, on the south-east and west bounds of it, towards
 “ its center; but on the north side, it seems, by the height
 “ of its cliffs, to have once extended much farther. The
 “ cliffs are in length about six miles, and gradually de-
 “ cline at each end; the more elevated parts continuing
 “ about two-thirds as far as they extend; and they are
 “ at the very highest of them about Minster, not less
 “ than ninety feet in perpendicular height above the
 “ beach or shore; and, consisting of clay and being
 “ washed at their basis by the tides which beat against
 “ them, more especially when driven by strong north-
 “ east winds, they are continually washing and falling
 “ down

“ down upon the shore : and so great is the loss of land
“ at the highest parts, that sometimes near an acre has
“ sunk down in one mass from that height, upon the sea-
“ shore below. Some farms have lost many acres within
“ these few years.” *Hasted's Kent.*

About four-fifths of this island consists of grass land, of two sorts; namely, marsh-land and upland pasture: the former has a very liberal share of rich and good fatting land; but great part of the latter is very poor breeding land, that will hardly support an ewe and an half per acre. Most of the arable land is exceedingly fertile in wheat and beans, especially towards the north side, in the parishes of Minster and East Church.

“ The inclosures on the hills are small, and are sur-
“ rounded with thick hedge rows of elm; and the whole
“ of the country is exceedingly pleasant in fine weather,
“ being interspersed with hill and dale, and frequent
“ houses and cottages. The roads throughout the island
“ are very good all the year, owing to the great plenty
“ of gravel and beach, and but little wear in it. The
“ prospects are very pleasing and extensive on every
“ side.

“ There is hardly any coppice-wood throughout the
“ whole of it. There are some small furze grounds and
“ bushy shaws on the hill, which afford shelter for many
“ hares, and a few pheasants and partridges. Good fresh
“ water is very scarce in most parts of the island: be-
“ tween East Church and Minster there are a few
“ springs, and notwithstanding they rise very near the
“ sea, the water is perfectly good and fresh.

“ The air is very thick, and much subject to noxious
“ vapour, arising from the vast quantity of marshes in
“ and near it, which makes it very unwholesome; inso-
“ much, that few people of substance live in it, especi-
“ ally

“ ally in the low land marshy parts, where the inhabitants are few indeed, and consist chiefly of cooks.

“ The garrison and dock of Sheerness, its environs, and town of Queenborough, the reader, however, will except from this observation; where there are many gentlemen of property and substance constantly resident.” *Hasted's Kent.*

The cliffs on the north side of this island belong to the three manors of Minster, Shurland, and Warden; the owners of which let them out to the proprietors of the copperas works, who employ the neighbouring poor to collect the pyrites, or copperas stones from the shore, and which they deposit in heaps on the cliff, at the rate of one shilling per bushel for their labour, until a sufficient quantity is procured to load a vessel, to take it away. The liberty of collecting the copperas on the sea-shore, is let by the lords of the manors for sixty pounds per annum.

The western part of this county consists of a great variety of soils and systems of management. It is much more inclosed than the eastern part, and produces more timber and underwood.

The best cultivated is the north side of the district, from Rainham to Dartford: a tract of five or six miles in breadth. Parallel to this is a space of like breadth, of exceeding cold, stiff, flinty clay, which is generally ploughed with six horses: this is the flat top of the chalk-hill that runs from the sea, by Folkestone, through the county, to the borders of Surrey, near Westerham. The soil of this slip of land is nearly alike, and is but of small value, on account of the great expence of cultivation.

It is the highest land in the county, and is, from thence, by some called The Hog's Back of Kent. Between this hill and the borders of the Weald and county of

of Surrey, is an inclosed country, with much gentle hill and dale, the hills shelving in almost every direction, with several varieties of the ragstone soils. This part produces great quantities of hops and fruit, with some corn and grafs; also timber and underwood, and has many pieces of common and waste land *.

The upper part, or west end, of this district, is also much inclosed with many coppices of timber and underwood: great part of the latter goes to the metropolis, in different kinds of faggots. The corn and hay that are not consumed in the neighbourhood, go likewise for the most part to London.

The Weald. This district of the county was in ancient times an immense wood or forest, inhabited only by herds of deer and hogs, and belonged wholly to the King. By degrees it became peopled, and interspersed with villages and towns; and by piece-meal, was for the most part cleared of its wood, and converted into tillage and pasture. There are, however, some woodlands still in their original state.

The reputed boundary of the Weald begins at the margin of Romney Marsh, and runs along the top of the Ragstone-hill, above the churches of Kingsnorth, Great Chart, Pluckley, Sutton, Linton, Hunton, Yalden, across the Medway by Teston and Watlingbury. From thence it proceeds by Hert's Hill, River-Hill, Idle-Hill, to Wellestreet, on the borders of Surrey, and then, in union with the boundary lines of the county of Suffex, taking in the Isle of Oxney, goes on to Aplemore and the borders of Romney Marsh. It is somewhat remark-

* The inhabitants divide the county into three parts, East, Middle, and West Kent: and, according to the ancient provincial adage, West Kent is healthy, but not wealthy; East Kent is wealthy, but not healthy; but Middle Kent is both healthy and wealthy.

Note by a Middle Kent Farmer.

Perhaps more fanciful than true. *Editor.*

able, that the sloping part of the stone-hill, which separates the Weald from the ragstone shelf above, should be so thickly covered with villages, whose churches stand about half way up the slope of the hill; while the neighbouring chalk hill-ridge, which separates the ragstone shelf from the hill above it, has not a single village or church upon it*. The stone-hill, in the extent of between twenty and thirty miles, has ten or twelve parish churches upon it.

Romney Marsh is a spacious level of exceedingly rich land, lying at the south corner of the county. Its shape is nearly that of a parallelogram, whose length from the foot of the hill at Aldington to the sea-shore, between Dengeness and Rye, is about twelve miles; and breadth, from the borders of the Weald of Kent by Warehorn, to the sea-shore, between Romney and Dimchurch, is nearly eight miles. It contains the two corporate towns of Romney and Lydd, and sixteen other parishes. The quantity of land contained in this level, that is within the county of Kent, is about forty-four thousand acres. The adjoining level of Guilford Marsh is, the greater part of it, in the county of Suffex.

It is divided into three separate districts; viz. Romney-Marsh, which contains about twenty-four thousand acres; Walland-Marsh about twelve thousand, and Denge-Marsh about eight thousand acres†. Harris, in his history of Kent, in speaking of Romney Marsh, observes, “that it was the first land which was inned or gained from the sea in Britain. For the laws, statutes, and ordinances for the conservation of this marsh, are (like our common laws) without any known original;

* This is accounted for by the great fertility of the soil on the one, and the want of it on the other. *Note by a Middle Kent Farmer.*

† Vid. Claus. 35. K. H. 3. D, inter M. 6 and 7, in the Tower Records; also, *Dugdale on Embankment.*

“ being

“ being at first constitutions, probably made by some,
“ even by the old British Kings, or rulers in Kent, as
“ well as by the Saxons during the Heptarchy. For in
“ the thirty-fifth year of the reign of Henry the Third,
“ they are called ancient and approved customs.” This
Marsh is defended from the sea by an immense bank of
earth (called Dimchurch Wall) of more than three miles
in length. The face next the sea is covered with com-
mon faggot-wood, and hop-poles fastened down by oak
piles and overlaths, which prevent the sea from washing
away the earth. The support of the wall, and the
drainage of this marsh, amount to the sum of four thou-
sand pounds per annum; which sum is raised by a scot
per acre, on the whole level of Romney Marsh. The
other two districts of Walland and Denge Marsh, are each
scotted separately, to defray their own expences of drain-
age, &c.

The land is not all equally good; some, chiefly near
the sea-shore, is a poor sandy gravel, which bears a little
grass in the spring, that soon burns up in the summer;
and some, along the foot of the hills which surround the
landside of the Marsh, is wet and poor. But the great
mass of land, the center of the whole Marsh, is wonder-
fully rich and fertile.

There are but few oxen fed here, compared with what
other rich marsh lands usually keep: but the number of
sheep bred and fed, exceeds perhaps any district of the
like extent in the kingdom.

The scattered inhabitants of the Marsh are chiefly
lookers and bailiffs, whose employers reside in the upland
parts of the county, or in the neighbouring towns.

The fences are either ditches, or oak posts and rails;
there being but very few hedges or trees in the Marsh,
except a few about some of the villages. Immense quan-
tities

tities of oak posts and rails are annually brought out of the woodlands of the Weald of Kent, for the repairs of the fences.

SECT. III. — *Climate.*

THE proximity to the German Ocean and British Channel, renders this county very subject to cold sea-winds, which often, near the shore in the spring of the year, injure the tender shoots of corn and herbage of every kind; especially when, after a few days of fine warm weather, a north-east wind succeeds.

The prevailing winds of this county are, north-east and south-west. When the former sets in and continues for any length of time, which is often the case in winter, a severe frost is always the consequence; the air is then exceedingly keen and sharp; ponds are frozen to the depth of ten or twelve inches; and turnips are destroyed. The south-west part of the county is more inclosed; and, being under shelter of the ridge of hills running from Folkestone-hill to Wrotham, &c. is somewhat warmer as to climate; but the soil in this part being much of it a cold moist clay, the harvest is later than in those parts of the county which are more exposed to the winds before mentioned.

The effect of the climate on Agriculture will perhaps be best shown, by stating the time when the wheat harvest commences; which, in the most early parts of the county (viz. the Isles of Shepey and Thanet) is, in a very forward harvest, by the 20th of July, and in general in the last week of that month; in East Kent, between Canterbury and Dover, about six or seven days later, according to soil and situation; and still later, by ten or twelve days, on the cold hills which run through the middle of the county.

SECT.

S E C T. IV. — *Soil and Surface.*

ISLE OF THANET.

THE bottom soil of the whole island, or what modern writers in husbandry call the subsoil, is a dry, hard, rock chalk. The tops of the ridges are about sixty feet above the level of the sea, and are covered with a dry, loose, chalky mould, from four to six inches deep: it has a mixture of small flints, and is, without manure, a very poor soil. The vales between the ridges and the flat lands on the hills, have a depth of dry loamy soil, from one to three feet, with less chalk, and of much better quality.

The west end of the island, even on the hills, has a good mould, from one to two feet deep, a little inclining to stiffness; but the deepest and best soil is that which lies on the south side of the southernmost ridge, running westward from Ramsgate to Monkton: it is there a deep rich sandy loam, and mostly dry enough to be ploughed flat, without any water-furrows. The soil of the marshes is a stiff clay, mixed with sea-sand and small marine shells.

EAST KENT.

The open part of the district between Canterbury, Dover, and Deal, is of various soils, no one parish or farm being perfectly similar in all its parts. The principal soils are, 1st, Chalk; 2d, Loam; 3d, strong Cledge; 4th, Hazel Mould; 5th, stiff Clay. Besides these, there are some small tracts of flints, gravel, and sand.

The chalk-soils are of various depths; from three to six or seven inches of loose, chalky mould, on a rock chalk bottom, and are mostly found on the tops and sides of the
ridges

ridges of this district. At some places there is a little mixture of small flints, and at others, of black light mould, provincially called Black Hover. This last, in an unimproved state, is the worst land in this district; and the whole of these chalky soils are much neglected, and consequently of little value; but where they happen to be improved, by paring and burning, destroying the charlock, with good manure afterwards, they become very good land for turnips, barley, clover, and wheat; and some parts produce tolerable crops of sainfoin.

The loamy soil is a very dry, soft, light mould, from six to ten inches deep, on a red soft clay, which is good brick-earth, and lies in a stratum of from three to seven feet deep, under which is generally a layer of chalky marl, and then the rock chalk. This soil is very good, ploughs light, and may be worked at all seasons; and produces good crops, if well managed, of all sorts of corn and grass.

The strong cledge is a stiff tenaceous earth with a small proportion of flints, and, at some places, small particles of chalk: it is from six to ten inches deep, on a hard rock chalk, and is found on the tops of the hills. When wet, it sticks like birdlime; and when thoroughly dry, the clods are so hard as not to be broken with the heaviest roll. It is very difficult to work, except when it is between wet and dry. This land, when well managed, and the seasons are favourable for the work, produces good crops of wheat, clover, and oats; but when unkindly seasons happen, and dry summers succeed, it is very unproductive.

The hazel mould is a light soil on a clay bottom, more or less mixed with flints and sand. It is dry, and forms very kindly land for barley and wheat upon clover lays. Beans are sometimes blighted on this sort of land, as is
wheat

wheat also on bean or pea-stubble, but more particularly the latter; for which reason wheat is very seldom sown after pease.

The stiff clay lies on the tops of the highest hills. This soil is generally wet which arises only from the rains in winter; for the springs are above 300 feet deep on the rock chalk. It has at some places a layer of a yellow coloured clay between the surface mould and the rock.

Flints.—This land, or rather surface of stones, occurs only in small tracts in the vallies about Dover and Stockbury, near Maidstone. It consists of beds of flints, with hardly any mould to be seen. This is very expensive to plough; but, under good management, with plenty of manure, is very productive in wheat, barley, and beans. There is very little gravelly soil, and not much sand in this district; a little of the latter, however, is seen in the vicinity of Hythe and Folkstone. This is very light land to work, and excellent for turnips, barley, clover, wheat, pease, and potatoes.

The flat rich lands in the vicinity of Faversham, Sandwich, and Deal, consist of two sorts of soil; namely, rich sandy loam, with a greater or less mixture of sand; and stiff clay, some of which, in the lower parts, is rather wet. The surface of the first is seven or eight inches deep, with a subsoil, varying in depth, of strong loam, clay, or chalk. This soil is always ploughed with four horses; is very dry and kindly to work at all seasons, and no ridges or water-furrows are required. It produces great crops of wheat, beans, barley, oats, and pease, and sometimes canary and radish.

The stiff wet clay is that which has a strong clay bottom, or any substance that holds water. It lies low, is subject to land-springs, and of close texture, so as not to admit a quick filtration of water.

This

This, when properly drained, and kept cleaned from weeds, and otherwise well managed in favourable seasons, is excellent land, and produces good crops of wheat, beans, and canary; but is generally very expensive to keep in good order.

ISLE OF SHEPEY.

Almost the whole of this isle is a deep, strong, stiff clay. Some parts are so very sticky in the winter time, that the plough wheels get loaded with dirt in one mass, so as to form the shape of a grindstone, and are often overturned with the great weight of mould, collected unequally upon the wheels; on which account foot-ploughs are sometimes used. The horses shoes are frequently torn off, by the hinder foot striking its shoe against the heel of the fore one, before it can disengage itself from the soil. The best time to plough these soils, it is said, is when they are thoroughly wet. Some of the upper parts of the island have a few gravelly fields; but those are very wet in winter, and are rather stiff. The chief part of the upland pasture is a stiff clay, covered with ant-hills; it is very wet in winter, subject to burn in a dry summer, and to split open to a great depth. The soil of the marshes is also a stiff clay underneath; originally a sediment of the sea. Its surface for an inch or two in depth is a vegetable mould, much enriched from the land having been thickly covered with sheep for a long series of years.

WEST KENT.

The varieties of soil in this part are, 1. Chalk; 2. Loam; 3. Clay; 4. Gravel; 5. Sand; 6. Hasslock; 7. Pinnock; 8. Coomb; 9. Hazel Mould.

The chalky soils are found on the sides of hills, and at different

different places along the borders of the Thames, between Dartford and Rochester: they are from five to seven or eight inches thick, of a loose chalky mould, on a rock chalk bottom. Those of the greatest depth of surface, that are well cultivated with a due proportion of manure, are very productive in corn and seeds, and yield great crops of sainfoin.

The loamy soils are found at different places, chiefly in the vallies. This land is of light tillage; and, when well managed, is very productive of corn, seeds, and hops; and is of various depths.

The clay soil is of two sorts. That which lies at the top of the chalk-hills is much mixed with flints, is a cold soil, and so very tenacious, as to require six strong horses to plough an acre per day in winter; and when left unploughed till dry in the summer, it is hardly practicable to get through it with eight horses; and sometimes, in very dry weather, impossible. This sort is from eight to fourteen inches deep on the rock chalk, and at some places a stiff yellow clay lies between.

The other sort of clay is a cold, wet, stiff kind, with a small mixture of ragstone, and is chiefly found in the low grounds of the western part of the country. Both sorts are of small value, being very expensive to cultivate; and, except the seasons are very favourable, they produce but poor crops. It sometimes happens that this land yields a great crop of wheat; which, like a prize in the lottery, tempts the fortunate adventurer to try his luck again, with great loss of labour and waste of substance.

Gravelly soils are chiefly found about Dartford and Blackheath, which produce early green pease, turnips, winter tares, rye, pease, oats, and some wheat. These

C

gravels

gravels are from five to eight inches deep, with a subsoil of rocky gravel or sand. There are other soils, called Gravel, in the lower part of this district, which are a mixture of the small pieces of Kentish rag, sand, and loam; the small particles of stone predominating, give it the title of Gravel. This sort produces, when well cultivated, good crops of turnips, oats, clover, and wheat.

The sandy parts of this district are in general very poor, being mostly of the black sort, and are chiefly found on commons and heaths. There are some however in cultivation, which produce excellent turnips and corn.

Haddock, or stone-shatter, is a soil, the surface of which is a mixture of sandy loam, with a great portion of small pieces of light coloured Kentish ragstone. It is from six inches to a foot or two deep; the subsoil a solid rock of stone. This land produces great quantities of hops, apples, cherries, filberts; and likewise good turnips, potatoes, feeds, and corn; also much excellent hay on old grass lands.

Pinnock. This land is very bad to till, and extremely poor. It is a sticky red clay, mixed with small stones; but although it is deemed poor for cultivation of grain, &c. yet it produces very fine chefnut-wood, and filberts likewise grow well upon it. This sort of land also lies upon the rock.

The Coomby soil of West Kent is an extreme stiff moist clay, mixed with stones and flints of different sorts. It ploughs so heavy as always to require six horses, and sometimes, when dry and hard, eight are necessary; even then, frequently not more than half an acre is ploughed in a day. This sort of land is found in the
parts

parts about Seal and Wrotham, and is nearly the same as described under the title of Clay.

A fine hazel mould is found on the sides of the hills, and in the vallies, at different places throughout the whole district.

THE WEALD.

The Weald of Kent has the reputation of being an entire mass of clay; but, on examination, it is found to contain the following varieties of soil, namely, 1. Clay; 2. Hazel Mould; 3. Sand; 4. Ragstone Gravel.

The clay is either stiff and exceedingly heavy, or a wet sort, which ploughs somewhat lighter. The first is chiefly found on the eminences, or their sloping sides. The surface is about seven or eight inches deep, under which is a stratum of stiff yellow clay, about a foot or two thick, with a subsoil in some parts of excellent marl. The second sort of clay lies in the lower parts, is extremely wet after showers of rain, and a long time in getting dry; which often occasions a late sowing, and a backward harvest; and frequently the wheat season is totally lost. The surface of this land is seven or eight inches deep; the subsoil is at some places a yellow clay, and at others a soft sandstone rock, which is often used for mending roads. Four horses with difficulty plough an acre per day in these soils. In some parishes bordering on Suffex, the ploughing work is done by oxen; four or five pair are generally fixed to a plough, and do about the same quantity a day as four horses.

The hazel mould is a clay soil of a drier nature, from having a considerable mixture of sand; it ploughs light, and is the best land in the Weald.

Sandy soils are of two sorts, black and white; the black is little regarded, but the white is much improved

by marl and lime. The little there is of this soil in the district, produces turnips, barley, clover, and wheat, and the subsoil is the soft sandstone.

The ragstone gravel is found only in small patches; and is of little value in its present state, being covered with furze, heath, and broom.

ROMNEY MARSH.

Almost the whole surface of this spacious level of fine marsh-land, is the sediment of the sea. It consists chiefly of a soft loam and clay, with a greater or a less mixture of sea-sand; there are, however, near the sea-shore, some small tracts of blowing sand, and some sea-beach, which are of very little value.

The principal part of the soil being a fine soft loam, with a mixture of sea-sand, and having lain time out of mind in grass, covered with sheep in winter and summer, its turf is wonderfully thick and fine; and the grass it produces is of a fattening quality, equal, if not superior, to any in the kingdom. The other parts, which are inferior, are those which have a less portion of sea-sand, and are a stiff clay; or those which have too much sand, or gravel, and are in consequence apt to burn in dry summers; and these are the lands which are used as breeding grounds.

The subsoil is frequently seen in alternate layers of clay and sand, and sometimes beach and sand.

SECT. V.—*Minerals.*

I cannot give a better account of this subject than by copying the words of the very ingenious historian* of

* Edward Hafted, Esq.

this

this county, who has diligently sought for every species of information.

“ On the top of Shooter’s Hill, in the parish of Eltham, “ is a mineral spring, which is said constantly to over- “ flow, and never to be frozen in the severest winter. In “ the parish of Bromley is another, which rises at the foot “ of a declivity, at a small distance eastward from the Bi- “ shop’s palace. The soil through which it passes is “ gravel, and it issues immediately from a bed of pure “ white sand. The course of the spring seems to be about “ north north-east and south south-west from its aperture; “ its opening is towards the latter; and as Shooter’s Hill “ bears about north north-east from its aperture, it pro- “ bably comes from thence. The water of this spring “ being found to be a good chalybeate, was, by the Bishop’s “ orders, immediately secured from the mixture of other “ waters, and inclosed, in hopes that it might prove be- “ neficial to such as should drink it. Since which, “ numbers of people, especially of the middling and “ poorer sort, have been remarkably relieved by it from “ various infirmities and diseases, which were not only “ afflicting, but some of them dangerous. Above Well- “ Place, which is a farm-house in Penshurst Park, there “ is a fine spring, called Kidder’s Well; which, having “ been chymically analyzed, is found to be a stronger “ chalybeate than those called Tunbridge Wells.

“ The parish of Penshurst, as well as the neighbouring “ ones, abounds in veins of iron ore; and most of the “ springs in them are more or less chalybeate.

“ The whole neighbourhood of Tunbridge Wells “ abounds with springs of mineral water; but as the “ properties of all are nearly the same, only those two, “ which at the first discovery of them were adjudged the “ best, are held in any particular estimation.

“ These two wells are inclosed with a handsome stone-
“ wall. Over the springs are placed two convenient ba-
“ sons of Portland stone, with perforations at the bottom,
“ through which they receive the water ; which at the
“ spring is extremely clear and bright. Its taste is steely,
“ but not disagreeable ; it has hardly any smell, though
“ sometimes, in a dense air, its ferruginous exhalations
“ are very distinguishable. In point of heat, it is in-
“ variably temperate ; the spring lying so deep in the
“ earth, that neither the heat of summer nor the cold of
“ winter affects it.

“ When this water is first taken up, its particles con-
“ tinue to rest till it is warmed to nearly the heat of the
“ atmosphere ; then a few airy globules begin to separate
“ themselves, and adhere to the sides of the glass, and in
“ a few hours a light copper coloured scum begins to
“ float on the surface ; after which an ochreous sediment
“ settles at the bottom. Long continued rains sometimes
“ give the water a milky appearance ; but do not other-
“ wise sensibly affect it. From the experiments of dif-
“ ferent physicians, it appears, that the compotent parts
“ of this water are steely particles, marine salts, an oily
“ matter, an ochreous substance, simple water, and a vo-
“ latile vitriolic spirit too subtile for any chymical ana-
“ lysis. In weight, it is in seven ounces and a quarter, four
“ grains lighter than the German Spa (to which it is
“ preferable on that account) and ten grains lighter than
“ common water. It requires five drops of oleum sul-
“ phuris, or elixir of vitriol, to a quart of water, to pre-
“ serve its virtues to a distance from the spring. This
“ water is said to be an impregnation of rain in some
“ of the neighbouring eminences, which abound in
“ iron mineral ; where it is further enriched with the
“ marine salts and all the valuable ingredients which
“ con-

“constitute it a light and pure chalybeate; which instantly searches the most remote recesses of the human frame, warms and invigorates the relaxed constitution, restores the weakened fibres to their due tone and elasticity, removes those obstructions to which the minuter vessels of the body are liable, and is consequently adapted to most cold chronical disorders, lowness of spirits, weak digestions, and nervous complaints.

“At Sydenham, in the parish of Lewisham, there are some springs of medicinal purging water, which, from their nearness to Dulwich, in the county of Surry, bear the name of Dulwich Wells; though there are some of the same kind in that parish, but they are of an inferior quality, and not so plentiful in quantity.

“These springs in this hamlet are at the foot of a hill, about twelve in number. The hill and ground adjoining is a stiff clay, with some wood upon it. These are next to those of Epsom, being discovered about the year 1640.

“The hole dug is about nine feet deep, and the water about half a yard deep; being emptied every day. The bottom is a loam, as is the hill; and where the water issues in, is found the lapis lutoso-vitriolicus, which glitters with vitriolic sparkles, and is divided into parcels by the trichitis.

“This water purges very quick; it is bitter, like the Epsom waters; it curdles with soap or milk, equally to them, and much more than those at Richmond.

“Dr. Allen published his account of these wells in the year 1699; though there had been before, in 1681, a treatise on them, published at London, in 12mo, by Dr. John Peter, Physician, under the name of Lewisham, vulgarly called Dulwich Wells, in Kent; in

“ which were shewn the time and manner of their discovery, the minerals with which they are impregnated, and the several diseases experience has found them good for, with directions for the use of them; and in No. 461, p. 835, of the Philosophical Transactions, is an account of a new purging spring at the Green Man at Dulwich, 1739, by Mr. Martyn.

“ Near the west end of the bridge, opposite the Store-keeper's house of the royal powder-mills at Faversham, there is a strong chalybeate spring, which on trial has been proved to be nearly equal to those of Tunbridge Wells.”

S E C T. VI. — *Water.*

THIS county possesses advantages superior to any other in point of navigation, from its extensive range of sea-coast, and the two great navigable rivers, the Thames and Medway, besides those of less note, the Stour and the Rother. The two former are navigable for the largest ships to Woolwich and Chatham, and for small craft to a very great distance. “ The Stour and the Rother admit coasting-vessels to Sandwich and Rye. The Ravensborn, the Cray, and the Darent, are small creeks or streams that fall into the Thames; the first at Deptford, the others in one channel at Longreach. Most of the marsh-land of this county is along the margin, or at the mouths of these rivers, or has been formerly covered with the waters of ancient havens and ports, now in a great measure obliterated. These rivers likewise have formed islands towards their mouths. Thus the Thames and the Medway, at their extremities, contributed their waters jointly to the separation of the Isle of Grain from the main land, but
“ the

“ the channel is now filled up. The Swale, one of the
“ mouths of the Medway, in like manner cuts off
“ Shepey from the continent of East Kent. Graine is
“ throughout low and marshy, and is about three miles
“ and a half long, and two and a half wide.”

Hasted's Kent.

CHAPTER II.

STATE OF PROPERTY.

SECT. I. — *Estates.*

THE property in land in this county is very much divided, there being few extensive possessions but what are intersected by other persons property ; and, according to Mr. Hasted, “ this distribution of freeholds
“ cements a good understanding between the gentry and
“ yeomen, their lands being everywhere so much inter-
“ mixed one with the other, obliges them to a mutual
“ civility for their own interest and convenience ; nor are
“ the latter so much dependent on the gentry as the inha-
“ bitants of most other counties, by copyhold or customary
“ tenures, of which there are very few in it ; which state
“ of freedom is productive of good-will and kindness from
“ the one sort to the other ; there being no part of the
“ king-

“ kingdom where the people are more quietly governed,
 “ or submit with more pleasure to the laws and magif-
 “ tracy of the country.”

The number of yeomanry of this county seems annually on the increase, by the estates which are divided and sold to the occupiers. There is no description of persons who can afford to give so much money for the purchase of an estate as those who buy for their own occupation. Many in the eastern part of this county have been so sold, within these few years, for forty, and some for fifty years purchase, and upwards.

“ The number of freeholds in the county of Kent, are
 “ supposed to be about nine thousand ; which is surpriz-
 “ ing, considering the large possessions which the two
 “ episcopal dioceses, the two cathedrals of Canterbury
 “ and Rochester, and several of the colleges of Oxford
 “ and Cambridge, and other bodies corporate, are en-
 “ titled to in it ; which, at a rack-rent, are computed at
 “ upwards of 80,000 *l.* per annum, besides parsonages
 “ and portions of tithes.” *Hasted.*

S E C T. II. — *Tenures.*

“ THE socage tenures of ancient demesne, and gavel-
 “ kind, prevail over this county. The former of which
 “ consists of those lands and manors which were the
 “ ancient inheritance of the crown, and actually in the
 “ hands of it in the time of King Edward the Confessor,
 “ or William the Conqueror ; and which appear to have
 “ been so by the great survey of Doomsday, in the Exche-
 “ quer, in which they are entered, under the title of
 “ Terra Regis.

“ Most of these have been, from time to time, granted
 “ out to private subjects, but the tenants of them under
 “ the crown, were not all of the same order and degree ;
 “ some

“ some of them continued for a long time in absolute
 “ villeinage, dependent on the will of the lord; and those
 “ that succeeded them in their tenures, now differ from
 “ common copyholders in only a few points. Others were
 “ in a great measure enfranchised by the royal favour,
 “ holding their lands by the better sort of villein-servi-
 “ ces: all which are now changed into pecuniary rents;
 “ in consideration of which they had many immunities
 “ and privileges granted to them; such as to try the
 “ right of their property in a peculiar court of their
 “ own, called a court of ancient demesne; not to pay
 “ toll, or taxes; not to contribute to the expences of
 “ the knights of the shire; not to be put upon juries,
 “ and the like.

“ The latter of these, the socage tenure of gavel-
 “ kind, prevails in general over this county; to which,
 “ within the bounds of it, there are certain special cus-
 “ toms inherent, called anciently *Consuetudines Kantiaë*,
 “ being the common law of Kent.

“ Various are the opinions of our antiquaries, con-
 “ cerning the etymology of the word Gavelkind; but
 “ that which is most natural, and best supported both by
 “ reason and authority, is drawn from the nature of the
 “ services.

“ According to this exposition of the term, it is de-
 “ rived from the Saxon word *GAFOL*, or *GAVEL*, which
 “ signifies rent, or a customary performance of husban-
 “ dry works; and, therefore, they called the lands, which
 “ yield this kind of service, Gavelkind; that is, the
 “ kind of land that yields rent.

“ If this is the true etymology, it is plain that gavel-
 “ kind, taken in the strictest sense of the word, denotes
 “ the tenure of the land only; and that the partibility,
 “ and other customary qualities, are rather extrinsic
 “ and

“ and accidental to gavelkind, from the customary laws
“ of the place, than necessarily comprehended under
“ that term.

“ Gavelkind lands are not peculiar to the county of
“ Kent; there are many instances of them in different
“ parts of this realm, which are said to partake of the
“ nature and custom of gavelkind: a title they have as-
“ sumed since the disgavelling statute of the gift of
“ King Henry VIII.; before which they are never
“ mentioned as gavelkind land, but only that they
“ were such as were partible, and had been parted: and
“ so peculiar is this tenure esteemed to be to this county,
“ that, whereas in all other places, the claimant is
“ obliged to set forth particularly the custom whereon
“ he founds his right to the lands, as being of the nature
“ and tenure of gavelkind; in this county it is sufficient
“ to shew the custom at large, and to say that the
“ lands lie in Kent, and are of the nature of gavelkind;
“ of which all lands lying in the county are presumed to
“ be, till the contrary be made to appear. And this is
“ the reason why the books called Gavelkind in this
“ county, by a higher appellation that is given to any
“ other custom, viz. the common law of Kent.”

Hasted's Kent.

CHAPTER III.

BUILDINGS.

SECT. I. — *Houses of Proprietors.*

THERE are between twenty and thirty noblemens seats in this county, besides many elegant and large mansions of the gentry, and abundance of modern built houses of great value belonging to merchants, and other wealthy tradesmen of the metropolis, &c. To give a particular description of every seat and mansion, will very far exceed the limits of this work, and take more time than is allowed for completing it. I hope, therefore, that I shall be excused in referring the Honourable Board and reader to Hasted's history of this county, where every seat, mansion, and park, are ably and elegantly described.

SECT. II. — *Farm-Houses and Offices.*

THERE are some few instances of modern built houses for the use of the farmers; but the chief part are very old, large, and ill contrived, the upper stories generally projecting over the under ones. These old houses are, in many parts of the county, built with chefnut, where now no chefnut-timber is to be seen: the offices about them are as badly contrived as the houses themselves. This part of the rural œconomy of this county stands much in need of a reform. On most of the middle and small sized farm-houses and offices, thatch is the common

mon covering; which is put on, particularly in the eastern part, much worse than in any other part of the kingdom that has fallen under my view. The stubble of wheat is raked up for this purpose; which being often done in the winter, when by rainy seasons it is become half rotten, of course cannot last a long time on a building. The farm-houses in the Isle of Thanet are, in general, exceedingly neat and convenient; and from some of them are seen the most beautiful prospects of East Kent, the Downs, and coast of France.

S E C T. III. — *Cottages.*

THE cottages are of such various kinds, that it is impossible to give any other account of them, than to say that they are in general comfortable habitations for farming labourers. They are built, some with bricks and tiles; but the greater part, especially of the oldest, with plaistered wall, and are covered with thatch. There are very few but what have a sufficient plot of land annexed to them for the growth of vegetables; and a great many in some parts of the county afford keep for a cow. Those, which have a garden of from twenty to thirty perches, usually let from 2*l.* to 3*l.* per annum, some more and others less, according to situation and other circumstances: those which have land enough to keep a cow, let from 4*l.* to 5*l.* per annum.

Some writers on this subject have taken considerable pains to shew, it would be a great advantage for every cottager to have two or three acres of land, that they might each keep a cow and two or three hogs, and raise plenty of potatoes: but gentlemen who recommend this, in their humanity to the individuals who are to be benefitted, lose sight of what would be the mischievous effects

effects to the community, by the loss of their labour. I will venture with great confidence to predict, that if every farming cottager, or, in other words, every farmer's labourer in the kingdom, could be so accommodated, a famine would inevitably be the consequence in a short space of time; for my experience has taught me to observe, that few men will labour hard any farther than necessity compels them to do so; and it is clear, that any cottager who has two or three acres of land, keeps a cow, and two or three hogs, and grows plenty of potatoes, is not much necessitated to labour for others.

CHAPTER IV.

MODE OF OCCUPATION.

SECT. I. — *Size of Farms, and Character of the Farmers.*

THE size of farms is generally greatest in the poorest parts of the county. Many small farms, of from ten to fourteen acres each, are found in the richest soils, and few there exceed 200 acres; but where land is poor, there are many as large as 300 acres, and some 600, or more. Many writers on agriculture have condemned the practice of adding small farms together, under an idea that it tends to increase the price of provisions,

visions, and decrease population; but from all the observations that I have made for the last twenty years, I am persuaded that the large farmers, generally speaking, make the land more productive in the gross than the smaller farmers do, because they generally make greater exertions in improving their land; and of course, large farms must have a tendency to lower the price of provisions. It is very true, that a number of small farmers on a given tract of land, will rear more poultry and eggs, and perhaps make more butter, than one farmer on the same quantity of land; but the one farmer will raise more mutton, wool, beef, and pork, and grow most corn; and will employ a much greater number of labourers than the small farmers on the same tract of land; and consequently population will be increased rather than be diminished by large farms. At any rate, there ought to be no restraint, as some writers have recommended, in the letting of farms; for if it were so, men of large capitals could not be accommodated; by which many of the most spirited improvers in agriculture would be driven perhaps out of the kingdom; and if not, their money would either lie idle, or be employed in some other pursuit with much less advantage to the community.

The occupiers of the small farms in general, work themselves much harder, and fare worse than other labourers, or many journeymen mechanics. Those of the higher class, the large occupiers and principal yeomanry, are a very respectable class of society, and have a great weight in the political scale of the county.

Mr. Hafted says, "The yeomanry which in most other parts of the kingdom is confined to the common people only, as indeed the name shews, for it is so called from the Saxon word GEMEN, which signifies
" common,

“ common, is extended much higher in Kent; for it
“ here likewise comprehends the principal farmers and
“ landholders, who, either from their education or in-
“ tercourse of life, are not esteemed by the gentry of
“ equal rank with themselves; and yet, in point of wealth
“ and possessions, they are frequently superior to many of
“ them, who though they write themselves Yeomen,
“ yet are usually and very properly styled Gentlemen-
“ Farmers; for besides the largeness of their holdings,
“ which are from 400*l.* to 1200*l.* per annum, they have,
“ in general, good estates and freeholds of their own,
“ and some, even to the amount of what they hire.”

Besides the yeomen, before mentioned, there is an infinite number of farmers, not having or possessing a freehold, who occupy from 40*l.* to 300*l.* or 400*l.* a year. The smaller farmers are in general a very industrious and sober set of men, fare hard, and live with great frugality. The great occupiers, who have property in stock of from 1 to 2, or 3000*l.* live, as they ought, more at their ease; but as to making of fortunes by farming, there is no such thing that ever came to my knowledge; the competition is too great to admit of it; instances have been known of great wealth being left by old farmers, who have never had any other occupation; but then they have, perhaps, had no family, or never spent any thing beyond the expences of a common labourer, so that the fortune has been saved by the simple operation of compound interest; or, perhaps, these persons have held their farms for a long series of years, at a rent of great favour.

S E C T. II. — *Rents.*

THERE are many farms which let as low as 5*s.* per acre ; and others, at every other price between that sum and 30*s.* ; while some particular fields of rich land, in the vicinity of great towns, as pasture, garden, hop-ground, &c. may let as high as 3, 4, or 5*l.* per acre.

The rent is, I believe, invariably paid in money ; all ancient customs of paying in kind, and personal services, being abolished or compounded for, except in some trifling cases ; where a landlord stipulates for a load or two of straw annually, or the carriage of a few coals, the keep of a young hound, or some such thing of little consequence.

The payments are usually made half-yearly ; that which is due at Lady-day, at Midsummer ; and that due at Michaelmas, at Christmas ; generally allowing the tenant one quarter's credit. In some few instances, a half year is given them, paying one half year under another. Perhaps I may not be very wide of the truth, if I state the average rent of the county to be 15*s.* per acre ; which will make for the whole, 896,000 acres, 672,000*l.*

S E C T. III. — *Tithes.*

IN many parts of this county, the tithes are collected in kind ; in others, they are compounded for on terms which will be hereafter mentioned.

In the Isle of Thanet, the whole of the rectorial tithes are collected, but the vicarial are chiefly compounded for ; part is neither collected nor compounded at present, nor has been for some years, owing to a litigation
about

about the right to the tithe of turnips, &c. In the eastern part of the county, the rectorial are almost invariably paid in kind, and the vicarial mostly compounded for, excepting in some instances, where there are disagreements between the vicars and their parishioners.

The rich lands about the towns of Faversham, Sandwich, and Deal, have their tithes chiefly collected. In the Isle of Shepey, the same. There have been some disagreements respecting the vicarial tithes in the parish of Minster, which are now settled, by paying 2s. per pound on the rent, and an addition of 6d. per acre for uplands, 9d. for marsh lands, and 1s. for mowing meadows; by which, an acre of upland, that lets for 5s. per acre, pays 1s. to the lay-impropriator; an acre of marsh land, that lets for 10s. pays 1s. 9d.; and an acre of meadow, that lets for 1l. pays 3s. or, reduced to a fraction,

The poor land pays	8-40ths	} of its rent, in lieu of vicarial tithe.
The middling	- 7-40ths	
The best	- 6-40ths	

About Maidstone, the tithe of corn is generally compounded for; wheat, from 6 to 7s. per acre; and Lent-corn, from 4 to 5s. per acre.

In the Weald of Kent, tithes are compounded for; wheat from 5 to 6s. per acre; oats 3s.; beans, pease, and barley, from 3 to 4s.; feeds and meadow, 2s. In Romney Marsh, the grass lands (except in the parish of Lydd *) pay a modus in lieu of tithe; some of 4d. some 8d. and others 1s. per acre; and corn lands pay a composition of from 4 to 6s. Some parishes pay-

* The modus for this parish was destroyed some years since, owing to the parishioners desiring to have it lowered; to which the vicar consented, and afterwards recovered the tithes.

ing the low modus of grass, if it is mown, pay 1s. per acre. A fair commutation for tithe, I think, would occasion a great number of improvements in agriculture; for even in the Isle of Thanet, where the land in general is cultivated in the most superior stile, there are some improvements yet to make; for there are several fields of poor thin chalky lands, on the hills, in the vicinity of Margate and Ramsgate, that were never known to have any manure carried on them; which, doubtless, would pay very well for mending, after a few years, if the occupier had the whole of the produce to himself; but the mischief is, that if he is at a great expence in purchasing town-dung, or getting sea-weeds up the cliffs for this land, he is probably a considerable loser the first two or three years by his industry; when at the same time, the tithe-gatherer, who is at no part of the expence, trouble, or hazard, gets corn each year, perhaps equal in value to two or three years purchase of the land in its unimproved state: hence it is, that some of the poor lands lie neglected. If a fair commutation for tithe † could be devised, so as to satisfy all parties, there can be no doubt but that the product of this island, great as it already is, would be much increased by the additional stock of productions from that circumstance ‡ § ||.

There

† I cannot believe that the tithe was ever considered by the farmers as an objection to improvement. I do not believe it was ever thought of: ten to one are too great odds. *Note by W. B. Esq.*

‡ Having sent a manuscript copy of this report to an ingenious friend in Thanet, he returned it with the following remark:

“Whatever may be the ill effects of tithe taken in kind, or whether any, I shall not here enquire into, but only remark, that the thin chalky land on the hills, in the vicinity of Margate and Ramsgate, are not indebted to the tithe-gatherer for their little produce, but to the inability of the occupiers, who are, generally speaking, in mean circumstances; carters, machine-drivers, &c. &c. who plough, &c. when they can, in season or out of season. The same kind of land in the occupation of the wealthy farmers, exhibits a very different appearance to the

There would be another very considerable advantage to the public, in the saving of labour in harvest, by the corn being carried into the occupier's barns in much less time than it is carried into those of the parsonage: the latter being frequently at a great distance from some part of the parish, much time is spent in getting the corn home. The value of the difference of the labourer, between carrying the tithe-corn into the parsonage and farmer's barn, is just so much loss to the public; and if rightly calculated for the whole kingdom, would amount to an immense sum * †. Among the disadvantages to

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the

the eye of the spectator; and produces a more ample return to the pocket of the occupier."

This is most certainly the case in some measure; but there is a much greater quantity of poor unimproved land occupied by farmers, than by carters and machine-drivers. Nash Court Farm, near Margate, has several score acres, which in all probability would have been manured before this time, had they been tithe-free. *Editor.*

§ What is meant by a fair commutation for tithe, I know not. An equivalent, or a commutation that would satisfy all parties, is perhaps impossible. The public good, however, certainly requires, that the most equitable one that can be devised should take place, whether the parties immediately concerned are satisfied or not. The Surveyor's reasonings are undoubtedly just and conclusive, and the objections of his correspondent, however plausible they may appear to the superficial observer, are of no weight as to the main object in question.

Note by an unknown Gentleman, transmitted to the Honourable Board of Agriculture.

|| All the great, or corn tithes, are in lay-hands (excepting a small portion of Minster) and are all taken in kind; and this report states agriculture in a very flourishing state in Thanet. It would, perhaps, enlighten the question, if a fair comparison could be made with strict impartiality between a tithe-free farm and some of the best cultivated and managed farms subject to the tithe-gatherers in Thanet and East Kent. The local advantage of an inexhaustible supply of manure from the sea, is sufficient to counterbalance the disadvantage of payment of tithe in kind, and seems to be the true reason why so much of the poor land has been improved.

Note by a Clergyman in Thanet.

* There are very few instances of the clergy taking tithe in kind in this county. *Remark by the Rev. Mr. Price of Lymage.*

But they let them to others that do, which is the same thing to the cultivator. *Editor.*

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To

the public in the collection of tithe in kind, the quarrels between neighbours, who perhaps would otherwise be very good friends, is a very material one; and more particularly where the tithe-gatherer happens to be the clergyman; but this is seldom the case in the Isle of Thanet, the tithe there being mostly in lay-hands.

There are immense quantities of poor land in East Kent, which experience has proved, might be made to produce good crops of turnips and clover, that never yet have produced either; but the expence is so great to the occupier, with the idea before him that another may reap the greatest benefit, that hardly any person is willing to set about improving his lands on such terms. Crops of wheat and barley have been lately produced upon some of the chalky downs, by means of improvements from turf-burning, that were worth more than the fee-simple of the land on which they grew. But they were raised on lands that paid no tithe; and that circumstance was the principal inducement to make the exertion. Let tithes be compounded for, if it were only for one term of twenty years, and turnips, clover, mutton, and wool, would increase in an astonishing degree. Farmers then

To this may be added, the loss by weather and the depredations of cattle, &c. to which the tithe-gatherer is particularly subject in a wet harvest.

A note by H. G. Faußett, Esq.

† The author is a tithe-gatherer to a considerable amount, and of course interested in the collection of tithe; but seeing, as he does, the many obstructions to all agricultural improvements, together with many other inconveniences and losses to the public, by means of tithes; and being called upon for his opinion, he feels it his duty to give his sentiments.

As this note is intended to give weight to the author's observations on tithe, his candour would have been more conspicuous, had he stated the proportion of land he pays the tithe of, and what he collects, and left the public to judge how far he is interested in the collection.

Remark by a Clergyman.

He collects full three times as much tithe as he pays. *Editor.*

would

would have the satisfaction of reaping the fruits of their own labour; and would set about turf-burning, and every scheme they could devise, to mend that land which they now care but little about.

SECT. IV.—*Poor Rates.*

THE expences of the poor vary so exceedingly in the different parishes throughout this county, that it will be impossible for me to make any exact report on this subject. Some parishes expend no more than 6*d.* in the pound on their rents, while many others exceed even 5 or 6*s.* It is a general complaint, that these expences are annually on the increase. There are, however, several corporations lately erected, under Mr. Gilbert's act of parliament, which are yet in their infancy; but, even in this early stage they afford a fair prospect of answering the intention of reducing the poor rates: at all events they discourage idleness, and bring up poor children in habits of virtue and industry. The exact expences of the poor, for the last three years, in the ten parishes of the Isle of Thanet, I have been favoured with by the different parish-officers, and are as follows:

	Poor.			Police.			St.
	£.	s.	d.	£.	s.	d.	
Sarre, about	300	0	0				
St. Nicholas	733	0	0				
Monkton	973	0	0				
Birchington	899	0	0	6	10	4½	
Woodchurch	252	0	0				
Minster	1449	0	0*				
	£4606						
		0	0				

Of this sum the parish of Minster has expended in rents for poor people, who were not able to pay them,

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From

	Poor.			Police.		
	£.	s.	d.	£	s.	d.
Brought over	4606	0	0			
St. John Baptift	3786	0	0	17	0	0
St. Peter the Apoftle	1972	0	0			
St. Lawrence	4019	0	0			
Stonore	34	0	0			
	3)14417 0 0					
Average of 3 years,	£ 4805 13 4					

or annual expence of maintaining the poor of the Ifle of Thanet; which is, for every acre of land, 3s. 6½d.

If the expences of the poor rates for the whole county may, with any degree of propriety, be eftimated from this particular average, viz. 3s. 6½d. per acre, — then for 896,000 acres in the county, the whole amount is 158,666l. 13s. 4d.

	£.	s.	d.
From Eaſter 1790, to Eaſter 1791,	8	5	0
1791, 10 — 1792,	14	7	6
1792, to — 1793,	19	12	6

One very great impediment to any effectual reform in the management of the poor in Thanet, ariſes from the different jurisdictions of the county, of Sandwich, and of Dover within it.

*In the jurisdiction of
the County.*

St. Lawrence,
only part;
Minſter, all;
Monkton, all;
St. Nicholas,
only part.

Of Sandwich.

Ramſgate,
The remainder of
St. Lawrence,
Sarre,
The remainder of
St. Nicholas.

Of Dover.

The whole of
Birchington,
Ditto of Mar-
gate,
Ditto of St. Pe-
ter. †

Note by a friend in Thanet.

† Theſe local jurisdictions are very inconvenient, both to the county at large and to the places themſelves. The power of magiſtrates is rendered of ſmall effect; and many a ſturdy rogue eſcapes the puniſhment he deſerves. *Note by H. G. Fauſſet, Eſq.*

This

This may perhaps be erroneous, because, in the ten parishes of the island, there are two populous towns, whereas in the 413 parishes of the county there are only forty-one towns, including the two cities, which is nearly double the number of towns in the island in proportion to the county; but, in opposition to this, my information from the Weald of Kent is, that poor rates there are very high; generally speaking, from 3 to 6*s.* in the pound, and some as high as 7*s.* so that, upon the whole, this estimate for the county may perhaps be not far from the truth.

SECT. V. — *Leases.*

There are many estates in Kent held by lessees, under the churches of Canterbury and Rochester; and some under the Crown; others under the colleges of the universities of Oxford and Cambridge. Many are held on three lives, under fines of renewal as they drop; others under twenty-one years, renewable every seven, on paying a fine as may be agreed upon by the parties, and subject to a small annual rent.

The value of these leases varies much, according to local circumstances; but it is generally estimated at about fourteen years purchase.

The leases granted to the occupying tenants are always for years; from seven to eleven, fourteen, and twenty-one: fourteen is the most usual term: the time of entering is generally on the 10th of October. The barns, and farm-yard for foddering cattle, are always reserved to the outgoing tenants until May-day following.

The usual covenants are for the landlord to repair all buildings, gates, stiles, and bridges; also timber-fences, and the lead of glass windows; and to pay the land-tax, quit-

quit-rents, and wall-scotts, where there are any. The tenants covenant to find carriage for all materials for repairs, with straw for thatch, and beer for workmen.

In some cases the tenants pay half the workmanship of repairs; and they are generally restrained from selling straw, and in some parts of the county hay, except on the condition of buying for every load of hay fold, a certain quantity of dung; which is an excellent covenant for both parties, because it has a tendency to prevent an estate being injured by carrying away its produce without a suitable return. Many of the leases of the present time are mere copies of old ones, that have been handed down through several generations, and are by some farmers, if ever they read them, but little understood. Leases should be simplified, and made as short as possible, and written in terms easily comprehended by the meanest capacity; all repetitions should be avoided, and no covenants whatever inserted but what are absolutely necessary. Some farmers are bound to sow wheat after beans, on land not fit to produce beans; to leave a quantity of podware gratten* for a wheat tilth on farms, where some sorts of podware are the worst tilth known to sow wheat upon; and on dry upland farms, where turnips and clover are known improvements, there is not the least mention of these articles, not even a covenant to leave an acre of either at the end of the term, nor to destroy wild oats, charlock, or thistles.

For want of a reform in this department of farming business, estates are often much injured, and incoming tenants half ruined in getting their farms in good order. It is the interest of every tenant, having a term of years in his farm, not only to keep it in a good condition, but

* A local term for stubble.

to improve it till within the last two or three years; and, consequently, not many restrictions are necessary during that period. It is requisite, therefore, only to make it equally his interest to keep the farm in good condition during the remainder of the term; which would be most effectually done, by compelling him or his heirs to allow for damages, as the clergy do for dilapidations.

Leases of twenty-one years, for all parties concerned, are, in my humble opinion, preferable to shorter ones; because every tenant can afford to give more rent, if he has the security of enjoying the benefit of his own improvements; and tenants can get more profit from land they occupy in security; because then they keep it in good order, and spend their money freely on improvements: by which an increase of every kind of agricultural production is raised; and the tenant, landlord, and public, are all benefited by the measure.

SECT. VI. — *Expence and Profit.*

I shall not pretend to give the Honourable Board, and the public, a particular and accurate account of the expence and profit of the agriculture of this county: it is absolutely out of my power to make such a statement; and I shall aim only at giving a general idea of the subject.

The prevailing opinion, for a great length of time, has been, that the average expences of a farm, in the common routine of management, are twice the rent; but my observations of late convince me, that the expence is much more, and often three, four, and sometimes, five times the rent. Generally speaking, he is the best farmer, and makes the most profit, whose expences are greatest, provided his money is laid out with judgment and œconomy.

The

The expence of stocking a farm, and carrying on the business of the year, is from three to four, and in some cases 5*l.* per acre; and always highest when in the hands of the most skilful and spirited cultivators. The ignorant, timid, and penurious farmer is at the least expence in cultivating his land; but, for that reason, he has the least produce from it. Individuals and the state are most benefited by a spirited cultivation.

With regard to profit, ten or twelve per cent. is usually made on the capital employed; more or less in proportion to the skill, spirit, and industry of the agriculturist.

Supposing the opinions heretofore stated, as to the rent, stock, and produce, to be nearly the truth, then the account of the whole county will stand thus:

Rent for 896,000 acres, at 15 <i>s.</i>	£672,000
Average produce (say thrice that sum)	2,016,000
Capital employed, at 3 <i>l.</i> per acre *	2,688,000
Profit, stated at the average produce, of eleven per cent. on the capital employed	395,680

Allowing the farmers five per cent. each for their capital (the value, if it were not employed in agriculture) then the value of the agricultural industry of the farmers of this county will be six per cent. of the capital, or £161,280.

Where gentlemen take farms into their own hands, generally speaking, their produce and profit must be stated at considerably less; for, from a want of practical knowledge of the subject, and not condescending to stoop to the minutiae of the business, they are subject to various

* Too little for arable farms; but taking grass-land, wood, waste, &c. may perhaps be near the truth.

impositions from their tradesmen and labourers; which occasion much loss of time and profit. Some instances, however, occur of spirit and great application producing effects creditable to the owners, and beneficial to such of their neighbours who are wise enough to follow good examples.

CHAPTER V.

IMPLEMENTS.

THE Kentish turn-wrest plough is almost the only one used or known. Some few instances of trials of the Suffolk ploughs, which go with two horses abreast, and are driven by the ploughman, occur, but they have not been found to answer the purpose of the farmers of this county, and are in consequence laid aside for the native implements; which, for all sorts of soils, and all required depths of ploughing, is the best I have ever seen and tried. It consists of a beam of oak ten feet long, five inches deep, and four broad; behind which is a foot, five inches by three and a half, and three feet and a half long; on the top of which the handles are placed; the foot is tenoned to the end of the beam, and mortised at the bottom to the end of the chep. Through the beam, at two feet five inches distance from the foot, is a sheath of oak seven inches

inches wide, and one and a half thick, which is mortised into the chep in an oblique direction, so that the point of the share is twenty-two inches distant from the beam. The chep to which the share is fixed is five feet long, four inches wide, and five inches deep. The share is of hammered iron, weighs about thirty-two pounds, is twenty inches long, and from four inches and a half to seven inches wide at the point.

The upper end of the beam rests on a carriage with two wheels, three feet two inches high. On the axle-tree is a gallows, on which is a sliding bolster, to let up and down. Through the centre of the axle is a clasp-iron, to which is fixed a strong chain, called a tow, that comes over the beam, so fixed, as by means of notches (or a pin called a check) to let the whole plough out a greater length from the axle, thereby letting it down to a greater depth.

This implement, altogether, is most certainly a very heavy one, and, from its construction, must be made very stout; as otherwise either the beam or chep will break with the force of four strong horses, when it comes suddenly against a rock, or any stiff place in the soil, a hard beaten path, or root of a tree, &c. It is remarkable for going well among flints and rocks. With these ploughs the soil may be turned up a great depth, and laid quite flat, without any kind of furrow being left open; which is a great advantage in a dry soil. They cost, with every kind of tackle fixed for drawing them, entirely new, about 5*l.* 5*s.* each.

With these ploughs four horses are generally used in East Kent; and there an acre and a half is the common day's work, a little more or less, in proportion to the stiffness or lightness of the soil: but in the western part of the county, from the tenacity of the soil, it is necessary to
make

make the ploughs much flouter, and to use six horses, the plough there being drawn by a long large iron link, called a tow, which comes from the axle of the carriage round the heel of the plough. In that part of the county they seldom plough more than an acre in a day, and sometimes not half so much, even when six horses are employed.

In the Weald of Kent they have a foot-plough with a turn-wrest, for breaking up lays. They cost 2*l.* 15*s.* each.

A double plough from a Gentleman in Suffolk has been sent to me; and I have spared no exertion or attention in giving it a fair trial; but it has not succeeded. The many flints which lie fast in the stiff soils, are continually throwing the plough out of the land; added to which, the deep open furrows and the uneven surface left by this instrument, are insurmountable objections, especially where drill machines are much used.

A great variety of ploughs and machines for drilling every species of grain is used in this county. The best by far for drilling wheat, barley, oats, pease, tares, &c. are made by Mr. Wellard of Deal. They are drawn by two horses abreast, in a double pair of shafts; drill seven rows at a time, each seven inches apart; and are so contrived as to drill any quantity required per acre. They are very simple in their construction, and not liable to get out of order. They cost 14*l.* 10*s.* each.

Harrows consist of four beams of ash, each four feet and a half long, and two inches and a half square, framed together so as to be four feet and a half wide behind, and four feet before: there are six or seven teeth of iron in each beam, which when new are eleven inches long, and weigh about a pound and a quarter each. One boy usually leads a pair of horses, each drawing one harrow.

They

They cost, with a strong iron chain, called here a Harrow-strap, about a guinea.

The carriages used for carrying corn to market, &c. are called Hutches, drawn by four horses; generally loaded with from seven to twelve quarters of corn, according to its weight and the distance it is carried. They are thirteen feet long, are made crooked at the sides, that the width cannot be positively ascertained; but are generally three feet wide before, and four behind at the bottom; and about six or eight inches wider at top, and twenty deep: they are boarded at the sides and ends close enough to carry sand. If made with wooden axletrees, they cost about twenty guineas; if with iron, twenty-five.

The dung-carts are of various dimensions, but mostly about seven feet long, and twenty inches deep; four feet broad behind, and three feet ten inches before; are usually drawn by two horses, and with broad wheels; and with every thing new and well made, cost about eight guineas.

Rolls of various sizes are used for breaking the clods; they are made nine feet long, and from fourteen to twenty-four inches in diameter; cost from 3*l.* to 10*l.*

Wheat is reaped with a toothed sickle; barley and oats are mown with a long scythe and cradle; they are then bound into sheaves, being drawn together on one foot till the bundle is of size sufficient for a band made of two lengths of the corn twisted together.

Horse-rakes are used for dragging together the loose barley left by the binders; they are made of oak, twelve feet long, with iron teeth fourteen inches in length and five apart; the beam is cut four inches by three. These rakes are drawn by one horse led by a boy, with a man behind

behind to lift it up every time it is filled with the corn. Price from 18s. to 1l. 4s.

Wheat stubble-rakes are used to drag that article together, made on the same principle as the last mentioned, but much heavier, and two feet shorter: the beam is five inches by four, drawn by two horses. Cost about 2l. 2s.

On the stiff soils the West Kent double harrows are used, each of which requires two horses; they have six beams, each with six teeth projecting ten or twelve inches from the wood. They cost 2l. 10s. each.

Rollers of stone are used to break the stiff soils, drawn by six horses: they cost from 12l. to 14l. each.

Near Maidstone, Hutches are made to contain two chaldrons of coals; and cost 30l. In most other parts they carry a chaldron and a half; and cost about 25l. each.

In the Weald of Kent, carriages, called bavin tugs, are chiefly used for faggots; and many use them for corn and hay. They carry 150 faggots; each four feet long, and three girt. The hind and fore wheels are fourteen feet apart; by which the length of the carriage is so much, that the load lies very low, and is thereby less liable to be turned over; which otherwise would often be the case in the roads of the Weald. This implement costs about 15l. or 16l.

Implements and Appendages to the Hop Grounds.

Every hop-plantation of four or five acres, requires an oast about sixteen feet square, which, built substantially with the requisite stowage room, costs from 150l. to 200l.

This is furnished with a set of picking baskets, about twelve in number, which cost about 5s. 6d. each; also a good scale-beam, with weights and scales; which, together, cost about 5l.

E

A shim,

A shim, made with a frame like a wheelbarrow, is esteemed the best sort; it costs about 2*l.* 2*s.* This implement is a very useful and convenient one likewise for tearing up weeds on summer-fallows.

A harrow to be drawn by one horse, with a small wheel in front, to go round at the ends of the plantation, and a pair of handles to be holden by the man who follows it, in order to keep it from bruising the binds. This implement costs about 1*l.* 15*s.*

A large iron peeler to make holes in the land for the poles, costs 6*s.* or 7*s.* A hop-dog, to wrench up the poles, costs 5*s.*

The first, and I believe the only threshing mill in the county, is at Betstranger, which I erected about three years ago. By a number of improvements, and after many alterations, I have the satisfaction to find it answers my purpose extremely well. It requires four horses, about eight men and four boys to remove the corn from a distant part of the barn, feed the mill, attend a winnowing-fan, and stack the straw. With this assistance, when the corn yields well, it will thresh and half-clean three quarters of wheat, or four of barley, or five of oats, per hour; by which I find there is a saving of nearly one half of the expence of threshing, besides the advantage of getting the corn out cleaner from the straw. There is, however, no small inconvenience attending it in so large a quantity of straw, chaff, &c. being got out at one time, when perhaps it is not wanted; and by that means, it is either wasted or spoiled by neglect before it comes to use.

Expence

Expence and Produce of a Day's Threshing,

		£.	s.	d.
Eight men, at 1s. 8d. each	-	0	13	4
Four boys, at 1s. each	-	0	4	0
Four horses, at 2s. 6d. each	-	0	10	0
Cleaning and measuring 24 quarters of wheat, at 3d. each	-	0	6	0
		1	13	4

which is about 1s. 4d. per quarter, or, as before stated, about half price.

		£.	s.	d.
Cleaning and measuring 32 quarters of barley, at 3d.	-	0	8	0
Other expences, as above	-	1	7	4
		1	15	4

which is somewhat more than half price, barley being usually threshed of late at about 1s. 6d. per quarter.

		£.	s.	d.
Cleaning and measuring 40 quarters of oats, at 1d. per quarter	-	0	3	4
Other expences, as above	-	1	7	4
		1	10	8

which is a little more than half price, they being usually threshed at about 1s. 3d. per quarter.

This mill will thresh every kind of corn cleaner than it is usually done by the common mode. To ascertain which, I sometime since got several neighbouring farmers to have thirty-six pounds of wheat straw threshed perfectly clean in their respective barns, and then I had the same

weight of straw threshed after it came from the mill; and I found that the average produce of corn left in the straw, by the common mode of threshing, was half a pint in every thirty-six pounds of straw, more than is left by the mill.

The horse-wheel is twelve feet diameter, in which there are 120 wooden cogs, which work into a cast iron nut, with fourteen cogs on the end of a horizontal shaft; at the other end of which, within side the barn, is a spur-wheel, with fifty-seven wooden cogs, which work into a nut, fixed on an iron spindle, in which is fourteen cogs. On this spindle the cylinder is placed; it is five feet long, and three feet in diameter, and it has four beaters lined with thin iron plate fixed upon it, each projecting from the face of the cylinder about two inches and a quarter.

When the horses walk a tolerable pace, the cylinder revolves upwards of 200 times per minute, making nine or ten hundred strokes in that space of time. The beaters, by the revolution of the cylinder, meet two fluted wooden rollers working in contrary directions, by a wheel fixed on the horizontal shaft; they are the same length of the cylinder, and five inches diameter, and revolve near thirty times per minute.

The corn is drawn in between these two rollers, from off a feeding-board, as broad as the cylinder is long.

The beaters strike the corn upwards, by which the straw and corn together are thrown over the cylinder, and drop down on a grating; through which the corn and chaff fall into a hopper, and from thence, pass away before a winnowing-fan, by which the chaff is separated from the corn. The straw is pushed off the grating by a person who stands by it, and from thence is by others conveyed either out into the farm-yard, or stacked in the barn

barn for future use. The corn, with the remaining chaff, &c. is then passed through a winnowing machine, and by that made perfectly clean.

CHAPTER VI.

INCLOSING.—FENCES.—GATES.

THERE is no portion of Kent that is occupied by a community of persons, as in many other counties. Our commons for live stock are generally much covered with furze, thorns, brakes, or heath, with a mixture of plots of poor grass-land; the cattle and sheep feeding upon them, are of course in a half-starved state. The total destruction of all commonable rights, by a general act of parliament for inclosing, is an object, in my humble opinion, of the greatest magnitude to the interests of this kingdom in general, and to this county in particular. There have been some exertions for accomplishing a division and inclosure of an extensive common in East Kent, within these few years; which failed for want of unanimity among the persons concerned.

The fences in the uplands consist of old hedges, such as nature has formed; quickset hedges raised from the berries of the white thorn, and dead hedges, made from

the spare bushes from the old hedge-rows. Turf banks and stone walls are not erected for fences in this county.

In Romney Marsh, an immense quantity of oaken posts and rails are used; which are brought ready prepared from the neighbouring woody part of the county. The old hedges, of natural growth, are usually cut down at from ten to twenty years old; and the fences are then made anew at the expence of 3*d.* per rod, if the hedge is bound; and 2*d.* without binding. Ten or eleven stakes, and double that number of binders, are generally allowed to every rod. If there is a ditch along the hedge, it is usually scowered out at the same time, for 3*d.* per rod, if about three feet wide, and two deep; but if wider and deeper, then a greater price is given in proportion.

Quickset hedges are planted on the bank, made by the mould, dug from out of a ditch three feet wide, and two feet deep; and an hundred plants are allowed to every three rods. The best plants are bought of the nurserymen, at 1*s.* per hundred. Sometimes plants are gathered out of the wood for 4*d.* per hundred, by the labourers; but they never succeed so well as good clean grown nursery plants. There are other methods used; some approving a broader and deeper ditch, while others prefer planting on level ground: but the method most in use, is the one above mentioned. The dead hedges are made with white and black thorn-bushes, at the expence of from 2*d.* to 3*d.* per rod for workmanship. Those made with black thorn only, and well staked and bound, will last five or six years.

The water-ditches, as fences in the marsh lands, are from eight to fourteen feet wide; and from three to five feet deep, with sides somewhat sloping; they are emptied of the mud and rotten vegetable matter, once in eight or ten years; the expence of which operation, for those
of

of middling dimensions, is about 18*d.* per rod; for those of greater width, and being full of mud, 2*s.* per rod, or more. The post and rail-fences in Romney Marsh are all made of oak, at the expence of 9*s.* per rod, if of three rails; but if of four, then 13*s.* per rod. The digging of new ditches costs about 2*d.* per cubic yard.

Gates. Such as are in common use are made of oak, with five bars, at 16*s.* per gate, for the wood-work only; iron hangings at 6*d.* per pound. In those parts of the county where oak is most plentiful, the price is somewhat lower. The gates about gentlemens seats are of various forms, materials, and prices.

CHAPTER VII.

SECT. I. — *Tillage.*

THE general method of cultivating the land is with the common turn-wrest plough, already described; by which every kind of soil, however full of flints, is turned up to any depth, even to fourteen or fifteen inches, when necessary; and the land, by its operation, is left as level as if it were dug with the spade; which is a great advantage in dry soils: for such, admitting a quick filtration of the water, require neither furrows or ridges, and the moisture is equally diffused over the surface of the earth; which cannot possibly be effected where it is

laid in high ridges. The usual depth of ploughing for all corn crops, is from five to seven inches; the poor light soils being generally turned up the shallowest, and the rich loams the deepest. Such parts of the low lands, or springy hills, which are wet, are ploughed with the turn-wrest plough, in flat ridges; some half a rod, and others a rod in width; the furrows between them, after the corn is harrowed in, are opened with an old plough, with a wrest at each side; by which means the water in wet seasons passes off, and the land is covered with an even crop, so that the marks of the furrows are hardly to be perceived in the crop when the corn is out in ear:—a very different, and surely much more beautiful object to view, than the crops on high round ridges, where the tops are always the only good crop, and the lower parts generally a poor half-starved one.

The ploughmen are generally as complete workmen as in any other part of the kingdom. They have a pride in making good work; but their natural fondness of the horses, frequently prompts them to take up their plough to a shallower depth when their master's back is turned, in order to ease their horses; which shews the necessity of a constant and vigilant attendance of the farmer to his ploughmen.

The even surface left by the turn-wrest plough, is particularly favourable to the operations of the mower; and likewise is very convenient to the laying land down to pasture. Upon the whole, the tillage of land is nowhere conducted in such a superior stile as in many parts of this county; and nowhere are to be seen such good crops on poor soils, or crops in general so clean and free from weeds.

S E C T. II. — *Fallowing.*

THERE is not any part of agriculture which has occasioned more discussion and controversy among writers on husbandry, than this subject of Fallowing. By many, it is said to be too little practised; and by others, too much so. By some, fallowing is condemned altogether; and by others, it is strongly recommended as the only method to destroy weeds, and meliorate and enrich the soil. I shall merely report what is the practice of this county in general, make a few observations on the necessity and utility of it, and then give such instructions for making a good fallow, as my own experience, on a large scale, for twenty-five years past, has taught me to think the best.

It is to be understood, that by a fallow, or summer-fallow, is meant land that bears no crop whatever for one year, and is well cultivated at proper intervals during the whole of that time; for if a crop of turnips, tares, or rye, for green food for sheep are produced, the land cannot be truly said to be a complete fallow. On the high lands of the Isle of Thanet, fallowing is the usual practice every fourth year for barley; but perhaps, not quite so much as formerly, because a greater quantity of turnips are sown; and a crop of pease is sometimes substituted for a fallow.

On the cold stiff lands on the hills running across the county, from Dover to Wrotham, fallowing for wheat every fourth year, is the general practice. In East Kent, fallows are always made on poor lands, more or less, as occasion requires; in some cases, to get the land clean from weeds; and in others, where weeds do not abound, to make a good tilth for a crop of wheat, if a stiff, and
barley,

barley, if a light foil. On the very worst soils, where wheat is never sown, fallows are frequently made for oats or barley, and for getting land into fine tilth for rye-grass, or other seeds.

In the Isle of Shepey, fallows are made every six or eight years for wheat; and in the Weald of Kent, the farmers are bound by the covenants of their leases to make summer-fallows, and to lime for wheat.

On the clay and stiff soils of West Kent, fallows are usually made for wheat; and in all parts of the county where sainfoin is intended to be sown, a good summer-fallow is invariably made by the best husbandmen.

When any kind of soil has borne three or four crops of corn in succession, and is become full of weeds, a well made summer-fallow is certainly requisite, not only to destroy the weeds, but likewise to meliorate and invigorate the soil: it is the most certain cure, the speediest, and, in the end, the cheapest.

There are many kinds of land which, no doubt may, by a proper succession of crops, and a vigilant attendance with the hoe and hand-weeding, be kept tolerably clean from weeds for a long series of years, without the intervention of a summer-fallow. But it must be admitted, that there are other untoward soils, which all the art and industry of man cannot keep perfectly clean and in good order for any length of time, without a fallow: and there are other soils, which, if they could be kept tolerably free from weeds for a long time, might perhaps be more improved, and more profitably managed by a fallow every four or five years.

The soils that are easiest kept clean without a fallow, are the dry sandy loams, chalk, and gravel, which can be worked almost at any time, however wet; and readily admit the operation of drilling and hoeing at all seasons.

Those

Those which most require fallowing, are the stiff, wet soils, that will not admit the operation of the ploughs and harrows but at certain intervals, when the land is between wet and dry; opportunities of working such soils are frequently lost by bad seasons; in which case, weeds will undoubtedly increase, and it is then impossible to eradicate them but by making a good summer-fallow, or what is by some called a fallow-crop (*viz.*) cabbages, or winter-tares; neither of which will perhaps turn to so good an account in the end as a complete summer-fallow.

The cold wet clays of this county, even if they are tolerably clear from weeds, are subject, after two or three crops, to run together; and they then become so exceedingly stiff and cold, that, without the intervention of a summer-fallow to meliorate the soil, very poor crops only are to be expected; whereas, when a good fallow is made, an abundant crop of wheat, and two or three good crops of spring corn, are frequently produced. The constant practice of making summer-fallows in many counties for wheat, and sowing beans broad-cast after it, and then recurring to a fallow again, is most certainly a bad practice; and for landlords to compel their tenants to make a fallow every third year on all kinds of soils, as is the practice in some other counties, is the height of absurdity; and it is no wonder that so many writers are found who condemn fallowing *in toto*, when they see so frequently the mischievous effects of fallowing under such management.

To make summer-fallows on light land, such as hazel, loam, sand, gravel, or chalk, to sow wheat upon, is extremely wrong; because experience teaches us, that wheat, under such management, is very subject to mildew, and to be root-fallen. All stiff soils, not full of manure,

manure, nor very rich, may with safety be sown with wheat on a fallow; and all light soils are a fine tilth for barley.

A good summer-fallow is the best preparation for a crop of clover; and a clover-lay, of all the tilths known, is the best for every other crop. But to sow clover on most soils, without a previous fallow, is a certain method of running the land to couch-grass.

To make a good fallow, all kind of soils should be ploughed about five inches deep before Christmas; and as soon as the land is tolerably dry in March, it should be cross-ploughed about six inches deep. Stiff soils must be left rough, until meliorated by rain, and then worked fine when between wet and dry; and all light soils immediately harrowed close after the plough, in order to promote the vegetation of seedling weeds, that they may be destroyed by subsequent ploughings, which must be repeated two or three times more, at intervals, as opportunities occur, during the months of May, June, and July; every time reducing the land fine immediately after each ploughing, while the land is moist, for the purpose before mentioned, of promoting the vegetation of weeds. Particular care should be taken not to touch the land either with the plough or harrows, when it is the least wet, as that only kneads it together, and creates more work to reduce it; besides locking up many of the seeds of weeds within the hard clods, and thereby preventing vegetation; by which such seeds are reserved for mischievous effects in the following crops of corn.

Some farmers in this county, and many in some others, never plough their fallows until they have finished their barley-sowing in the spring; and then, perhaps, not again until the land is overgrown with weeds. I have sometimes seen dung carried out, and laid in heaps, for spreading

spreading on such fallows, among green thistles and other weeds above the ground.

Fallows had better never be made at all, than be done in such a slovenly manner.

SECT. III. — *Rotation of Crops.*

ISLE OF THANET.

THE general system, or plan of management, in the Isle of Thanet, on all the thin light soils, has been, time out of mind, one of four courses, viz.

Fallow,
Barley,
Clover,
Wheat;

but subject to several variations, which have much increased of late. The soil having been greatly improved during the last fifty years of excellent management, it is found that the course may be extended to advantage by substituting pease for fallow, thus:

Pease,
Barley,
Beans,
Wheat,

and then return to a fallow as before, and sometimes, though but seldom (and then generally considered as bad management) a crop of barley is taken after the wheat, thus:

Barley,
Beans,
Wheat,
Fallow, &c.

It is to be understood here, that the foundation of all good management, and the system most practised, is the first

first mentioned of four courses; and it is by this system, with the plenty of manure from the sea-weed, that great part of this island, which is naturally as poor land as any in the kingdom, is made to produce such excellent crops of corn of the first quality.

The deep rich sandy loam before described, and some of the best of the land at the west end of the island, are cultivated under the round tilth system of East Kent, viz.

Beans,

Wheat,

Barley.

The process under the four course system is, after raking up the stubble of the wheat, and stacking it near the farm-yard for littering hog-pounds, thatching, &c. to plough the land five or six inches deep as soon as possible in the autumn, which is cross-ploughed when the land is tolerably dry in the spring, and repeated two or three times during the summer months. Between the times of ploughing, collections of mould, farm-yard dung, sea-weed, &c. are formed in convenient situations in the fields, which are turned over in the autumn, and in frosty weather carried out on the fallow, at the rate of from forty to forty-five cart-loads per acre. This manure is spread and ploughed in as soon as opportunity offers; and the barley is drilled in, at the rate of three bushels per acre, or sown broad-cast, four bushels per acre, the first dry week in February or March; and if for clover or trefoil the next year, those seeds are sown with the barley: the clover or trefoil lies only one year, and is ploughed about five or six inches deep in November, and sown with wheat.

If no seeds are sown among the barley, the stubble is ploughed in about six inches deep in the winter, and harrowed the first dry week in February; and then beans are drilled in furrows eighteen or twenty inches apart, at the rate
of

of four bushels per acre; the furrows are harrowed, and the land generally rolled down smooth. As soon as the beans appear they are horse-hoed, and sometimes immediately harrowed across the furrows; and then, as soon as they have recovered the harrowing, they are hand-hoed with a hoe about five inches broad, at each side of the furrow, at the expence of 3s. per acre; which operation is repeated in May, or the first week in June, at 4s. 6d. per acre; the ground is then stirred with an earthen plate, to raise a quantity of mould against their stems.

As soon as the beans are harvested, the land is scuffled with the broad share, and made perfectly clean by harrowing, and burning the weeds, if any, and then ploughed for wheat. In both cases, whether clover-lay or bean-stubble, the wheat is usually sown three bushels per acre, after having been steeped in salt water from five to twelve hours, and mixed with flaked lime. When pease follow the wheat, they are drilled in, and managed in every respect the same as the bean-crop, except harrowing after the horse-hoe. The barley and other crops after pease, are managed the same as if the land had been a summer-fallow, instead of pease. Under the round tilth system, the bean and wheat crops are managed the same as before mentioned; but the barley is usually sown later, in order to give time, by thrice ploughing, to clean the land; and the manure is generally spread on the barley-stubbles for beans.

Radish-seed is frequently sown on these lands instead of beans, for the London market; and canary-seed in lieu of wheat, both on the clover-lays and bean-stubbles. The radish is sown in March, on furrows made with a two or three-chepe^d * plough, about ten inches

* A provincial term for a piece of wood on which the share is fixed.

apart,

apart, two or three gallons of seed per acre: as soon as they appear, every other row is cut up with a horse-hoe, leaving the rows twenty inches apart. When the plants get two or three rough leaves, they are hoed out to the distance of from ten to fifteen inches apart in the rows, and then kept clean by a second horse and hand-hoeing, if necessary.

The crop is seldom fit to reap till October, and sometimes is out in the fields till near Christmas, without receiving any injury from the wet weather; it being necessary that it should have much rain to rot the pods, that it may thresh well.

Canary is sown the first dry week in February, on furrows ten or eleven inches apart (the land being previously made fine and light on the surface) about four or five gallons per acre; and as soon as the furrows can be seen, they are hoed with a Dutch hoe, at the expence of 1s. 8d. per acre, and kept clean by repeated hoeings, when necessary, during the summer. It is generally ripe by the beginning of September. Like radishes, it requires much time in the field, and seldom suffers by wet weather.

EAST KENT.

Chalky soil forms a very considerable part of the district under survey. This sort of land cannot be said to be under any settled system of management, for there are almost as many schemes of practice as farmers; much of it is down-land, or sheep-walks; some of which (although no very material part) has been so time out of mind; and some tenants are restrained (very injudiciously) from breaking up those old downs. The practice has been chiefly, when old sheep-walks have been ploughed up, to do it in wet weather, in the midst of winter, when other arable lands are too wet to work with advantage; and the principal inducement has been that
of

of employing the teams when they would probably be doing mischief on better soils. This sort of land, when so ploughed, is usually sown in March, with black or grey oats, which, from being generally over-run with charlock (provincially called Kinkle) produces very poor crops, sometimes hardly worth harvesting. The crop of oats is generally succeeded by a fallow; perhaps sown with coleseed, and then oats with feeds*; and after that crop, if the land can be folded, a slight crop of wheat is obtained; but that only on some of the best parts of the field, where there is a greater depth of soil, or the flat tops of some downs, where there is a soil somewhat stiffer and better than the slopes of the hills. Some of the courses of crops of the down-lands, when ploughed, are as under, viz.

1.	2.	3.
<i>Down-land.</i>	<i>Down-land.</i>	<i>Down-land.</i>
Oats	Oats	Oats
Coleseed	Fallow	Fallow
Oats	Oats	Oats
Seeds	Clover or rye grass	Sainfoin, from five
Oats	Oats	to ten years
Fallow	Fallow	
4.	5.	6.
<i>Down-land.</i>	<i>Down-land.</i>	<i>Down-land, burnt.</i>
Oats	Pease	Turnips same year
Tares	Coleseed	Barley
Coleseed	Oats	Clover
Oats	Clover	Wheat
Seeds	Wheat	Turnips, &c.
Wheat	Fallow	
Fallow		

* Clover and Trefoil.

F

7. Down-

7.	8.	9.
Downshare Turnips	Downshare Turnips	Downshare
Turnips	Turnips	Wheat
Barley	Barley	Barley
Clover	Sainfoin	Oats
Wheat		Oats
Fallow		Rye Grass.

The five first and last are the prevailing courses, and are each of them very bad, as they generally tend to impoverish the soil, and make it worse, if possible, than before; for whatever grows upon it is carried to the barn among other crops, and the straw goes to the general mass of dung, and increases the heap for the better sort of land. Scarcely any body thinks of dunging this soil, and it is consequently impoverished, by being robbed of every thing it produces. But it is not so with the sixth, seventh, and eighth courses, for there the burnt turf produces turnips almost to a certainty; and by folding these off with sheep, much manure is left on the land, and a stout crop of barley and clover obtained; the clover being again folded off, a good crop of wheat is produced, and the land is in a gradual course of improvement. The ninth, and last mentioned, is the course after downsharing that has hitherto generally prevailed; and is the most destructive plan that can be devised. It is this injudicious management of downshare land that has brought the practice of downsharing into disrepute. Four crops of white corn in succession, with rye grass at last, would impoverish the best land in the kingdom; what then must it do on some of the worst? Even if rich land was well manured for a crop of wheat, and that succeeded by three crops of white corn and rye grass, it must inevitably become poor; and then the coat of manure might
with

with as much propriety and justice be condemned for having done the injury, as the downshare for having hurt the land before mentioned. In short, it is not down-sharing, but the wrong management afterwards that is destructive. Downsharing is the greatest improvement yet known for chalky soils, if rightly managed.

Loamy soils are usually under the round tilth system of East Kent, viz.

Barley,

Beans,

Wheat.

The barley is a cleansing crop, by being first ploughed in winter, and then twice or thrice more in dry weather in the spring, before the barley is sown. Some farmers, whose land is very clean, plough only twice, and then drill the barley in April, in rows from seven to ten inches apart, hoeing and hand-weeding the intervals. Four bushels are sown broad-cast, and from two and an half to three drilled per acre. Barley is mown, and after lying a week or two, is bound in sheaves, and set up into shocks of ten at a place, to be tithed. When the wheat-sowing is over, and the dung intended for beans is carried out, the barley stubbles are then ploughed in. The beans are put in rows, from eighteen to twenty inches apart, if boxed in, four bushels per acre; if drilled or dropped by hand, three only; the crop is horse and hand-hoed, as in the Isle of Thanet; and the whole, with the succeeding wheat crop, is managed as mentioned in that district. See page 63.

The strong cledge is generally under a four course system of

Fallow,

Or,

Fallow,

Oats,

Wheat,

Clover,

Clover,

Wheat;

Wheat.

F 2

The

The oats and clover are sown, in a dry season, in March; the clover is generally fed with sheep, and folded for wheat, which is sown early, that the work may be finished before much wet weather sets in. If the fallow is cropped with wheat, it is sown the end of October, or beginning of November; the clover-seed in that case is sown on the wheat in the spring, and covered with a roll only; for this soil is generally too much pulverized with frost to admit harrowing at that time. The clover is fed off by sheep, as before mentioned, and the crops of wheat and oats are harvested as on the other soils already described.

The hazel mould is under different systems at different places, according to the fancy of the farmer, or situation of his land. Some pursue the Norfolk system of

Turnips,

Barley,

Clover,

Wheat;

others the East Kent, of

Barley,

Beans,

Wheat;

and others Peas,

Barley,

Clover,

Wheat.

Some sow early pease and turnips the same year.

This sort of soil being dry, and very easy tillaged land, may be managed as well under one course as another. If the occupier has with it a tract of grazing land, he finds turnips and clover convenient, and pursues the Norfolk system; on the other hand, if he has no grass-land, or has the corn-tithes himself, he finds it most advantageous

to

to pursue the East Kent system. The methods used for sowing and harrowing the several crops, are the same as before mentioned; it is needless, therefore, to repeat them here.

The stiff clays on the tops of the chalk-hills are under a four course system of

Fallow,
Wheat,
Beans,
Barley;

and a very good one it is for such a soil. The fallow gives an opportunity of getting a fine early wheat season, which is very necessary on this cold backward land. The wheat stubble is ploughed soon in the winter, by which the frost brings the surface into fine order for drilling the beans as soon as the land gets dry in the spring. The beans are horse and hand-hoed to keep the land clean for the barley-crop, which is put into the land at two ploughings only. The corn is harvested in the same manner as on other soils, but is much later than on any other sort of land. The wheat-harvest usually commences about fourteen or eighteen days later than in the Isle of Thanet, or towards the end of August, and other crops in the same proportion.

THE LAND IN THE VICINITY OF SANDWICH,
FAVERSHAM, AND DEAL.

The dry loamy soils are cultivated in the round tilth system of East Kent; namely,

Barley,
Beans,
Wheat.

A few oats are sown instead of barley, and pease in-

stead of beans ; and sometimes a crop of canary is sown on the bean-stubble instead of wheat.

Barley is sown or drilled on the third ploughing, at the end of April and beginning of May : the quantity of seed sown, and other management, the same as before described on the loamy soils of East Kent. When the land is manured, the dung is generally laid upon the barley-stubble for beans, at the rate of forty or fifty cart loads per acre ; when ploughed, the beans are drilled, or dropped by hand, from three to four bushels per acre ; the crop is frequently horse and hand-hoed three times each, and always kept perfectly clean from weeds. It is harvested as in other parts ; after which the land is ploughed once entirely flat, and sown with wheat chiefly in the month of November. The crop of wheat is carefully hand-weeded in the summer months, and the harvest usually commences a few days later than in the Isles of Shepey and Thanet, or about the first week in August.

The stiff wet clay of the lower parts of this district is much of it under a two course system of beans and wheat alternately. The beans are always put in rows, twenty inches apart ; they are frequently planted by women dropping them by hand, while a man follows and covers them with the loose mould which he cuts and draws from the next furrow, with an instrument called a planting-hoe. Wheat is sown broad-cast before the rainy season commences in the autumn ; and this land is laid in flat ridges of half a rod or a rod in width : after sowing, the ridge-furrows are opened, to let off the water in winter.

The best of these stiff wet lands are often sown with canary, instead of wheat, and garden-beans are planted instead of common ticks ; these are the windfor and toker beans, which are dropped by hand, at the rate of six bushels per acre, in rows twenty inches apart. They
some-

times produce very abundant crops, and great profit; at other times, when too much land is planted, and the crop happens to be indifferent, they sell at low prices, and turn to a very bad account; and at such times are given to fattening bullocks, sheep, and pigs. Both the bean and canary-crops are kept clean by repeated hoeings. The canary is cut in September, at the expence of 6s. or 7s. per acre, and is left a great while in the field, in lumps of half a sheaf at a place, before it is fit to carry into the barn. The expence of thrashing this seed is 6s. or 7s. per quarter; and its chaff is the best horse-food of the kind that comes out of the barns.

ISLE OF SHEPEY.

The general rotation here is beans and wheat alternately; and when the land gets foul, or the farmer thinks it wants rest, he substitutes a fallow for the bean-crop, which is done once in six or eight years. On the gravelly parts they sow a few oats, and sometimes barley. Some turnips are sown; but from the land holding the wet so late in the spring, they are of little use to the grazier. If the cabbage-culture is beneficial in any situation, it must be a great acquisition in this island, as a substitute for turnips; and the soil is well known to be particularly favourable to their growth.

Much clover is sown with great success; and the lay is the farmer's favourite tilth for the wheat. The land is ploughed in the winter for beans, with four horses, which plough about an acre in a day with much difficulty. The beans are drilled in rows, about twenty inches apart, as soon as the land will admit of it in the spring; they are horse-hoed twice, and hoed and weeded by hand once. The beans are harvested as in other parts

of the county, and the stubbles are ploughed only once, and then sown with wheat in October: the land is laid in flat ridges with open furrows, to carry away the water in winter. The harvest usually commences as early as in any part of Kent. The wheat which this island produces, is generally the best that goes to London market; it frequently weighs sixty-four pounds, the Winchester-bushel; and, from its early harvest, is of a fine colour, and the bran of course is very thin. The beans also are a very good sample; both the crops of wheat and beans are very large, when the land is in good order.

The clover that is sown in this island is mown twice; the first time for hay, and the second for feed. From the earliness of the soil, the hay is got off soon enough for the second cutting to come in good time for the feed-crop. This stiff soil, with a good harvest season, produces frequently great crops of very excellent feed.

THE UPLAND FARMS OF WEST KENT.

The mode of cultivation, or rotation of crops, varies so much through this part of the county, that it is impossible to lay down any particular system as the practice of the district; every farmer follows that plan which he thinks will answer his purpose best; and hardly any two neighbours adopt the same mode. Many that set out with a particular system in view, are driven from it by an unkindly season, and the untowardness of the soil.

The chalky lands, when under the plough, are cropped with turnips, barley, clover, and wheat, for one, two, or three courses, and then laid to sainfoin or rye-grass for a few years; after which the same course is again followed. This is easy tillage-land with four horses: the value of ploughing an acre is 7s. or 8s.

The

The clay soils, where they have settled systems and favourable seasons which admit the pursuing them, are under the following courses, viz.

Fallow,	Fallow,	Fallow,
Wheat,	Wheat,	Wheat,
Clover and Trefoil,	Clover and Trefoil,	Oats,
Wheat,	Oats,	Pease.

On the hill above Wrotham, &c.

Fallow, Wheat, Clover, Wheat, Oats.

They frequently sow sainfoin or rye-grass for a few years, and then break up with a fallow, and pursue the same course again. This land is ploughed with six, and sometimes eight horses. Value of ploughing an acre, from 12s. to 16s.

The gravel and sandy soils.

Turnips,	Turnips,	Turnips,	Turnips,
Barley,	Oats,	Barley,	Barley,
Clover,	Clover,	Clover,	Clover,
Wheat,	Wheat,	Wheat,	Pease.
		Oats,	

It is dry land and ploughs light; value of ploughing 6s. or 7s. per acre.

The haddock, or stone-shatter soils, are under one of the following systems:

Turnips,	Turnips,
Barley or Oats,	Barley,
Clover,	Clover,
Wheat,	Wheat,
Pease,	Beans,
	Wheat.

This land works kindly, and is ploughed with four horses, for about 7s. or 8s. per acre.

Coomby and pinnacky soils are nearly under the same system as the clay already described.

The

The hazel-mould is frequently managed with four courses : turnips, barley, clover, and wheat, with variations of substituting oats for barley, and pease for wheat; and sometimes after wheat and clover-lay, a crop of pease.

On the tract of land between the borders of the Thames and the hill, the gravelly soils are often cropped with early pease, which are gathered green for the London market; and then turnips the same year, succeeded by oats, clover, and wheat, in succession. Sometimes rye and winter-tares are sown, to be fed off with ewes and lambs in the spring, and then followed by turnips, &c.

The poor chalky land of this part is cultivated as at other places, and sown with sainfoin; great crops of which are produced by the assistance of foot, ashes, &c. from London.

The best land of the vallies is, much of it, under a system of six courses; namely, turnips, barley, clover, wheat, beans, and wheat.

For turnips, on the chalky and other poor soils, the land is ploughed in the winter, and cross-ploughed in a dry time in the spring, as in other parts of the county already mentioned; and generally manured with farm-yard dung, and mould from hedges and ditches, before the third or fourth time of ploughing, unless manure is carried out for the preceding crop of wheat; for without the land is in good heart, the poorest forts, especially, will not produce good turnips. They are fed off with sheep, and the land, if it is stiff, is sown with oats on one ploughing; and if light and kindly for barley, that grain is sown instead of oats; for which the land is sometimes twice ploughed. The clover-seed is sown on both crops before the last harrowing; a great part of the clover is mown for hay, and then fed off the remainder of the summer; when it is ploughed once and sown with wheat; for which crop a clover-lay is esteemed here on these

these soils, as well as in other parts of Kent, the best tilth known.

The stiff red clays and coomby soils, are always summer-fallowed for wheat; three or four ploughings are given, as time and seasons will allow; but bad summer-fallows are frequently made on such land, notwithstanding every exertion of the husbandman. They are sown as early as opportunity will admit, and the same rule is observed when cropped with oats or pease; for as the cultivator cannot always sow when he wishes; he must therefore do it when he can. When these sorts of land are laid down with seeds, what the Norfolk farmers call layers, they are sown with rye-grass, clover, and trefoil; they continue two or three years, and are then ploughed in the winter, and made a summer-fallow for wheat, with the same course as before.

The sandy and gravelly soils, intended for turnips, are frequently sown with rye, which is fed off with sheep previous to sowing the turnip-feed. This may be of great advantage to the sheep, should there be a scarcity of food in the spring; but it must tend to exhaust the soil, and weaken the turnips, unless the sheep get great part of their food by day on grass-land, or other feed, and go to the rye by way of folding the land at night; or if the land is to be manured for turnips, there is no fear of a crop; in that case, the sowing of rye may be excellent management; and indeed, every plan is excellent on these soils that tends to secure good crops of turnips; for that is the very essence and spirit of good husbandry.

Not only the manure of the sheep in feeding off the turnips on these loose lands, but the treading of their feet is of great service.

The barley and oats are sown as early as possible, and are mown as in other parts of the county; but here they
are

are not bound in sheaves, but raked together by hand, and carried into the barn loose, where they are trodden with a horse. The clover is mown for hay, and fed after with sheep till autumn, and then once ploughed for wheat.

The stone-flatter, loamy soils, and hazel-mould, are of a light dry nature, and may be worked almost at any time. These are made into good tilths for turnips, and frequently produce fine crops without any manure. The sooner the turnips are fed off, and the land sown, the better the produce in general of barley and oats; although great crops are sometimes obtained by a late sowing, if kindly showers soon succeed; but late sowings, with a succession of dry weather, generally fail. The clover crop and wheat sowing are managed as before-mentioned on other soils; only it is to be remembered, that the second growth of clover on these, as well as all other soils, is sometimes saved for feed, but not in any great quantity. When beans or pease are put in on the wheat-stubble, the operation is performed by drilling across the furrow as soon as the land is dry in the spring: the crops are managed in other respects by hoeing, &c. as in East Kent, and the bean-stubble is sown with wheat, as described in that district.

The early pease for gathering green, are drilled in rows, eight or nine to the rod, in the end of November, or beginning of December; they are generally sold by the acre, to persons who gather them, and send them by water from Gravesend, or by land-carriage to the London market. The pea-straw, when stacked dry, is esteemed very good fodder for cattle and sheep. The land is immediately ploughed and sown with turnips. Manure is not always, but should be, carried out for pease, by which no time is lost in getting the turnip sowing forward;

ward; and the manure is by that means well worked among the soil, to the immediate benefit of the young turnips, which is of the utmost importance; for by a rapid growth, they get out of the way of their great enemy the flea.

Rye and winter-tares are sown in great quantities near London, for spring-feed for early lambs; they are fed off in good time for a crop of turnips.

The general management of this district, when compared with that of many other counties, may be said to be very good; but it will by no means bear a comparison with some of the eastern parts of this county for cleanliness of crops, and general activity in the articles of labour; which are material circumstances in seed time and harvest.

The chalky soils are always subject to charlock; and are frequently seen quite yellow in June and July with that plant in bloom, overtopping the crops of corn.

THE WEALD OF KENT.

The covenants in the leases between landlords and tenants, point out the system to be pursued; which is fallow, wheat, oats, clover, or layers for two or three years. The tenants are bound to lay one hundred bushels of lime per acre on the fallows for wheat; and generally put on double that quantity.

This lime is made of chalk, from the hill before mentioned, and is brought from the distance of twenty miles to some of the parishes, though there is excellent limestone in the centre of the Weald; and even in the parish of Betheriden, famous for a fine limestone, called Betheriden Marble, chalk-lime is preferred; and the chalk to make it is procured from a considerable distance.

Chalk-

Chalk-lime is applied to stiff clay-lands, and stone-lime to sandy soils.

The old lays are ploughed late in spring; generally in the month of May for the first time.

They are cross-ploughed and well harrowed, as opportunity offers, during the summer, in dry weather.

The lime is dispersed in heaps, of a load or two at a place, during the summer, and spread with a shovel out of a cart before the last ploughing for wheat; which is generally sown in the month of October, and reaped in the middle of August.

The wheat-stubble is cleared in the autumn and used for thatch, littering the bullock-yards, &c. The land is ploughed six or seven inches deep, and the oats are sown with the clover seed, without any other ploughing, as soon as the land gets dry in the spring. The soft wet clay-soils are generally sown with rye-grass and clover together. The crops of feeds are mown for hay, and then fed off until the land is ploughed, except in some cases where clover is sown alone on the best land, which is mown twice; the first time for hay, and the second for seed. In the best land, beans and pease are sown on the clover-lays, and on the old layers of grass: pease frequently succeed; beans very seldom. The hazel mould and best sandy soils are under the four course system of turnips, barley, clover, and wheat. The turnips are frequently carried off the land; which so exhausts the soil, that the clover-lays are often ploughed up for a summer-fallow.

ROMNEY MARSH.

The very small portion of land under the plough is wonderfully productive in wheat, beans, oats, and pease. The quantity annually broken up is thought to increase,
owing

owing to the moderate composition taken by the clergy in lieu of tithe, and the astonishing produce of the land. The practice of ploughing, however, is not general; and the greatest quantity in any one person's hands, hardly exceeds eighty acres; very few have half so much, and most of the tenants none.

The first crop, when the marsh-land is ploughed, is usually pease; the second pease or beans; and then wheat succeeded by beans, and wheat alternately for a few years, with sometimes a variation of a crop of oats or pease.

SECT. IV. — *Crops commonly cultivated: their Seed, Culture, Produce, &c.*

THE crops most commonly grown in Kent, are wheat, barley, beans, oats, and pease; also hops, canary-feed, radish-feed, turnips, and colewort: these are the principal ones, and are found almost on every farm, having a soil adapted for them. The quantity of seed sown, and method of culture, are mentioned under the title *Rotation of Crops*.

Wheat. The number of sorts of this grain is annually increasing, by importation from foreign countries.

Of the old sorts, are the brown and yellow Lammas; the White Straw, Fulham, and the White or Egg Shell. The Brown Lammas, till within these twenty or thirty years past, was the sort chiefly cultivated in this county; but it is now giving way to a variety of new species, as well as some of the other old sorts.

By some experiments I made in the years 1777 and 1782 *, I found this the least productive of the several kinds; and have never since sown any of it.

* See Annals of Agriculture, vol. 4, page 280.

This

This is the common brown-strawed wheat; it grows with a long jointed ear, the chaff of a dark brown colour; the straw is long and apt to fall; the hull or bran thin, and flour very white, and the corn mellow in grinding; for which reasons it is esteemed by the millers as the best of the old sorts for their use.

The Yellow Lammas resembles the Brown in every respect, except that the colour of the grain is of a yellow hue, and the chaff of a somewhat lighter colour.

The white strawed wheat takes its name from the colour of its ear; in other counties it bears the appellation of the Kentish White Straw. This kind sends out a greater number of stems from the stool, or plant, than the other sorts; and by that means is often a very thick crop on the land. The straw is generally somewhat shorter than that of many other kinds, and not quite so liable to fall in rainy seasons. It is on these accounts much sown in the eastern part of this county: but, from its dull colour, its having a thick bran, and often grinding very steely, it is not much approved of by the millers.

The Fulham also produces a white straw, which grows short and coarse: this kind is very productive, especially on poor land; but the grain is very coarse, and the bran thick: from which circumstances it is the least valuable to the millers of any kind yet mentioned.

The White, or Egg Shell wheat, is known by its producing a white straw, a smooth white chaff, and very white grain; the bran of which is somewhat thick, but the flour remarkably white. It works mellow in grinding, is very early ripe, and so free in the ear, as to blow out in windy weather. This kind, from rich sandy loams,

loams, is often a beautiful sample; and when so, brings the highest price of any sort.

The new sorts of wheat, which have been introduced into this county within these last twenty or thirty years, are the Hoary White, the Nonpareil, the Pilbeam, the Square Ear, and the Hoary Brown; with a variety of other sorts very lately introduced, and but little known.

The Hoary White, by some called the Velvet Eared, is by far the most valuable, because it is very productive, and the best for the millers use. The straw is white and short, the chaff is covered with a thick fine down, somewhat of a brownish hue; the grain is remarkably small, and of a dull white colour; the bran very thin, so that some grains are almost transparent when held up to the light. It grinds very mellow, and makes a beautiful fine white flour. From the quantity of down upon the chaff, and its small ears binding up very close in the sheaf, this kind, in a rainy season, is apt to vegetate very freely in the field; on which account it is not so proper to cultivate in a moist climate, and in small inclosures, that are not open to the winds and sun.

The Nonpareil is a sort said to be brought into this country from America; it has a bright straw with a brown ear; and the grain is very white, large, and plump. It is very productive on all soils, thrashes very free, and yields, in that operation, the greater part of its chaff; thereby producing a great quantity of horse-meat. It grinds very mellow, and is well esteemed by the millers.

The Pilbeam is a brown wheat, growing very stiff, and is generally thick on the land. The grain is small and plump, somewhat of a yellow brown. It is said to be very productive on rich lands, and is a valuable kind to

mix with others, but will not of itself make a good loaf of bread, from its not working properly in the act of fermentation. The bakers say it will not rise well after the yeast is put to it.

The Square Eared wheat is a very productive kind; but, from its being apt to drop out in the field before it is ripe, and, in consequence, to blow out in gales of wind, it is not much cultivated.

The Hoary Brown is but lately introduced, and therefore little known.

Besides those already enumerated, there are the two sorts of rivet wheat, the white and brown; neither of which are much cultivated in Kent. They both ripen late in the season, and are so very coarse and steely, as to be unfit for making bread, unless mixed with a large proportion of a better sort of flour. They, however, produce very abundant crops on strong wet lands, and are saleable at inferior prices.

Steeping. Salt water from the sea, where it is convenient, and where not so, brine, has been till within these three or four years, invariably used in Kent for the purpose of steeping wheat for sowing. After soaking it for a few hours, it is taken out, and a sufficient quantity of lime to dry it for sowing, is sifted over it. In case of wet weather or frost, it will keep in this state for a long time without injury.

This method has been practised, time out of mind, with a view to prevent the smut or collar; but it often proves ineffectual.

Mr. Wyborn of Hull, in this neighbourhood, whose wheat one year, after the usual process of brining, was uncommonly full of smut-balls, endeavoured to investigate the nature of this distemper; and, by a happy combination of reasoning and experiment, discovered, that
it

it was an infectious disease, and curable by arsenic. His letter on the subject, in the Annals of Agriculture, merits the attention of every practical farmer. It should be known, however, that if the wheat stands much more than ten or twelve hours in the solution of arsenic, vegetation will be totally destroyed.

The time for sowing wheat on the wet and cold lands, is early in October: on stiff cledge and drier clay soils somewhat cold, about the middle of that month; but the general time for the county, is the month of November. It, however, sometimes happens, by badness of weather and other untoward circumstances, that a considerable quantity is sown the first week in December; but the more early sowings generally produce the strongest crops.

The growing wheat, by all good managers, is generally weeded in the months of June and beginning of July, by cutting up thistles and other weeds with a small angular hook, and pulling up charlock and some other weeds by hand; that which is drilled, is frequently hoed in the month of March or April, if necessary. Many writers on husbandry recommend drilling, with a view to keep the land clean by hoeing, and thereby supercede the necessity of making summer-fallows: but those authors should recollect, that if all the crops were drilled, it would require more than treble the present number of husbandmen to perform the operation of hoeing them; and therefore summer-fallows must be continued, until the population is sufficiently increased to clean the land without them.

The time of harvesting is mentioned under the section *Climate*. Chap. 1st.

The thrashing of wheat is performed with a flail on an oaken floor on most farms of 80*l.* rent and upwards; but

on smaller farms, on an earthen floor. It is universally in Kent, cleaned with a casting-shovel, and flat broom, called a spry, which sweeps off the chaff and white coats with the small pieces of straw that fly among the corn. This method of cleaning corn is certainly the most expeditious and best, where the barn-floor is large, and of a sufficient length: but in a small room, the winnowing machines will do it better, and perhaps cheaper.

In any county like this, where the soil is so extremely various, it is impossible to make any accurate estimate of the produce of the wheat crop. There are many situations where two quarters per acre are a very good crop; while double that quantity on some others, is but a very indifferent one: twenty-two bushels per acre may probably be nearly the annual average growth. The fine white wheats, especially the hoary white of this county, make most excellent bread of the whole meal, when properly ground and manufactured in the following manner. To a bushel of meal, add a pint of good yeast well mixed with two or three gallons of warm water; stir the whole well together, and let it work six or eight hours before it is put into the oven. This is the common farmhouse bread of East Kent; but in some parts, where the coarser kinds of wheat are used, the broad bran is taken out.

Barley. There are only two sorts of this grain cultivated; the common long eared English barley, and the short eared sprat-barley: the latter is only sown on some of the richest parts of the soil, where the common kind is likely to grow too stout, and fall. This grain is never steeped; the quantity usually sown is four bushels per acre; if a drill plough is used, three and a half is enough. The time of sowing is from Candlemas to the twelfth of

of May, according to soil, situation, and other circumstances. It is always weeded in the same manner as wheat, and the harvest commences, for that sown early on dry warm soils, about the twenty-fifth of July, and continues at different parts of the county till the middle of September.

It is always mown with a scythe and cradle, and in East Kent bound into sheaves; but the West Kent farmers generally carry it into the barn loose. The produce is from one and a half to seven quarters per acre: the average may probably be twenty-six bushels per acre.

Beans. Of this grain we have the following sorts, viz. Common Ticks; large Flat Ticks, or May Beans; Small or Essex Ticks, and French Ticks: and of the garden-beans, the Toker, Windsor, Long Pod, Spanish or Lisbon, and Mazagan; besides a few other varieties cultivated only in small quantities for supplying the London seedsmen.

The first is the sort most generally cultivated by the Kentish farmers, and is used for fattening hogs, and as food for horses. These are usually either drilled, dropped by hand, or boxed, in furrows eighteen inches apart, from three and a half to four bushels per acre, in February and March; in either case they are generally hand and horse-hoed twice, and sometimes three times, and lastly hand-weeded. The crop is reaped about the end of August or beginning of September, and thrashed by a flail, cleaned with the casting-shovel and s pry, and then sifted to take out the dirt and small beans. The produce is from two to six quarters per acre, in proportion to the strength of the land and management. The May-beans are a larger sort of ticks, and somewhat earlier ripe: they are sometimes very productive; but,

being larger, are in consequence not so heavy, and therefore of rather less value per quarter. Four bushels, and sometimes four and a half, of this kind are dropped in by hand per acre. In every other respect they are managed the same as Common Ticks.

The Essex Ticks are a much smaller sort than the common Tick, and of a rounder shape. They ripen six or eight days later than the first mentioned, and are not so productive, but more valuable, being heavier.

The small French Ticks are a still less sort, being about as big as a moderate sized pea, and nearly circular; this is the latest ripening sort known, and most valuable when dry, on account of their great weight. It is said, they will grow on some sorts of poor land, not well adapted for the larger kinds; but they are not very productive. Three bushels per acre of these two small kinds, is a sufficient quantity to seed the land when drilled; which is the best method by far of putting them in.

The Toker is the largest garden-bean, and somewhat of an oval shape. Many of them are found an inch and a half in length. The quantity of seed is usually about five and a half or six bushels to the acre. The beans are dropped by hand, in rows about twenty inches apart, as soon as the land is sufficiently dry in the spring. This crop is kept perfectly free from weeds during the summer, and is pulled up by hand in harvest: it is set up in lumps, of a sheaf at a place to dry, in a conical form, the but-end being spread out as wide as possible, to prevent their being blown down. They are threshed and cleaned, like other sorts, and then culled by women, to take out every rotten and stained bean before they are sent to market. The produce is sometimes very abundant,
and

and the price varies accordingly ; the former from three to ten quarters per acre ; and the latter from 8s. to 140 per quarter.

The Windsor bean is somewhat less than the former, not so long, and more approaching to a square form. This kind is managed in every respect as the Toker, only requiring a little less seed : its produce is generally somewhat less, and value a little more.

The Long Pod is about half the size of the Toker ; it is an earlier sort, and much used by the London gardeners. The quantity of seed is about four bushels and a half to the acre, always dropped by the hand in rows about eighteen inches apart. This sort is harvested, thrashed, and managed, in other respects, the same as the other garden-beans, and the produce is from three to six quarters per acre : their value is more uniform than that of the other kinds, seldom arriving at any great price, being more generally cultivated, on account of their superior hardiness.

The Spanish, or Lisbon, is a still smaller kind, and ripens about the same time. The Mazagan is the smallest of garden-beans, and earliest ripe.

The Spanish is dropped in by hand, about four bushels and a half per acre, in rows eighteen inches apart. The Mazagan is frequently drilled four bushels per acre. These two sorts are reaped as common beans : the produce of the first is from three to five quarters, and sometimes much more, per acre ; and the second from two and a half to four and a half.

Oats. The sorts of this grain are the large Poland, the Brue, the Tartarian White, the Siberian and Devonshire Black oats, and the Red and Grey.

The Poland are sown, about four bushels and a half per acre, from the beginning of February to the middle

of May : the first sown, if the land is in good order, are always the best sample, and generally the best crop. This kind being usually sown on the best land, the crop is hand-weeded by women and children, and it is mown with a scythe and cradle, unless too stout, and then it is reaped like wheat, with a sickle. The harvest commences for the early sown crops, on dry warm soils, often by the twentieth of July, and ends, for the late sown ones, on cold soils, as late as the end of September; but the general oat-harvest is in the month of August. The crop is thrashed with the common flail. The general produce of this kind is from three to six quarters per acre.

The Brue* oats take their name from a town in Holland, or Flanders, from whence they were originally imported into this country.

There are many white oats cultivated under different names in this county, as the Essex, the Hertfordshire, the Twin oat, &c. all which I take to be the Brue oat. It is an early kind, and very productive on deep rich lands, and will yield a good crop on most soils that are not very poor. Four bushels are usually sown per acre; the management, in other respects, the same as the Poland; the produce generally somewhat greater.

The Tartarian are a very late sort, but very productive; they are extremely light, not much esteemed, and but very little cultivated.

The Siberian Black oat is a very large, long grain; it was first introduced into this county about twenty-five years ago, by Mr. Reynolds of Adisham; who also introduced the Turnip-rooted cabbage, which still bears his name.

These oats are very apt to drop out in the field, and

* Perhaps a corruption of Bruges.

require as good land as white oats; but, from their colour, they are not quite so valuable. They are less cultivated now than formerly. From the large size of the grain, it is necessary to sow five or six bushels per acre. They are sown early, and are a very forward sort. The produce is about the same as white oats.

The Small, or Devonshire Black oats, are most commonly sown on chalky downs, and, being very hardy, will grow on almost any poor soil; but, like every thing else, are most productive on good land, and such as is in the best order. Four bushels per acre is the common quantity sown on the poor lands of this county; but some farmers, on very bad land frequently sow more; that quantity, however, is quite sufficient if the land is perfectly clean. This kind being very hardy, and ripening late, cannot be sown too soon, provided the land is dry and in good order.

The poor chalky downs, where this sort of oats is usually sown, are very full of charlock, which in very few cases is ever taken out of the crop; but it ought always to be done; for it is quite contrary to reason and common sense to expect poor land to produce a crop of corn and weeds at the same time.

The harvesting and thrashing are the same as of other sorts, and the produce on poor land is from one and a half to three quarters per acre. If sown on tolerable good land, or on poor chalky down-land, in good order after turnips, the produce is sometimes very abundant, even six or seven quarters per acre. The Red oats are but very little cultivated, and not much known in Kent; they are chiefly grown on the poor cold stiff lands: the straw of them is said to be particularly valuable to cut into chaff; their management is the same, in every respect, as that of the Black oats.

The

The Grey oats are a very long, thin, poor, light grain, and are cultivated chiefly, on account of their producing the most straw, on very poor land, for the purpose of cutting into chaff for horses. They are sown early, harvested and thrashed as other sorts, and produce on extreme poor land, where hardly any thing will grow, a tolerable crop.

Pease. Of this pulse we have the following varieties commonly cultivated by the farmers, viz. the Reading and Leadman's Dwarfs, for breaking peas and fattening hogs; the Grey Polt; Nutmeg Grey; Early Dun, in East Kent, called Sutton's Greys, from their first being introduced by a farmer of that name; and Shepherd's Grey pease: all of which are for fattening hogs; besides these kinds, there are many others cultivated for supplying the London seedsmen. The varieties of the Early and Marrowfat-pease, for the seedsmen's use, are too numerous to be particularized in a general report of this nature.

All the kinds of pease are drilled in rows, about eighteen inches apart, from the middle of February till the end of March, and sometimes later, when untoward seasons intervene. These crops are cultivated, during the summer, with horse and hand-hoes, the same as the bean crops; and are harvested from the middle of July till the end of September, as they become ripe. They are reaped with a hook, called a podware hook, and thrashed as other crops of corn. The produce is from one and a half to five quarters per acre. Leadman's Dwarf and the Early Grey pease, are thought to be the most prolific.

The Early Charlton and Hop-spur pease frequently are off the ground in time to get a good crop of turnips.

Hops

Hops are separately described, under the title of *Canterbury and Maidstone Plantations, &c.*

Canary Seed. There are three kinds of tilths for this crop; viz. summer-fallow, bean-stubble, and clover-lay; the last the best. If the land is not very rich, a coat of rotten dung is frequently spread for it. Whether manured or not, the tillage necessary is to plough the land the first opportunity that offers after wheat sowing is done; and, as soon as the land is tolerably dry in the spring, furrows are made about eleven or twelve inches apart, and the seed is sown broad-cast, about four or five gallons per acre, and well harrowed in; when the blade appears, and the rows are distinct, the intervals are immediately hoed with a Dutch hoe, and afterwards, in May or June, the hoeing is repeated with a common hoe; carefully cutting up every weed, and thinning the plants in the furrows, if they are too thick. It is cut in the harvest, which is always later than any corn-crop, with a hook, called a twibil, and a hink; by which it is laid in lumps, or wads, of about half a sheaf each.

The seed clings remarkably to the husk; and, in order to detach it, the crop must be left a long time on the ground to receive moisture sufficient to destroy the texture of the envelopement, otherwise it would be hardly possible to thrash out the seed. The wads are turned from time to time to have the full benefit of the rains and sun; it has sometimes continued in the field till December without vegetating, or suffering any kind of injury.

The produce is from three to five quarters per acre; and it is sold to the seedsmen in London, who send it to all parts of Europe for feeding small birds, which are kept

kept in cages. The offal of this article is a most excellent food for horses.

Radish Seed. This crop is much cultivated on the best rich loamy soils of Thanet and East Kent, for supplying the London seedsmen. The land should be clean, full of manure, and ploughed a good depth in the early part of the winter. The sorts are the early Short Top, the Salmon, and the Turnip-rooted.

The seed is sown on furrows, about ten inches apart, in a dry time in the month of March, about two or three gallons per acre. As soon as the plants appear, every other row is cut up with a horse-hoe, leaving the rows twenty inches apart. When the plants get two or three rough leaves, they are hoed out in rows, and are then kept clean by repeated horse and hand-hoeing, when necessary, leaving the plants at about eighteen inches distance. The crop is seldom fit to reap till October, and sometimes is out in the fields till Christmas, without receiving injury from wet weather; it being necessary that it should have much rain to rot the pods, that it may thrash well. The produce is from eight to twenty-four bushels per acre: and it is sold to the London seedsmen, who send it to all parts of the kingdom for retailing to the gardeners.

Turnips. This plant is more sown with us every year. Thirty years ago, hardly one farmer in a hundred grew any; and now there are few, especially in the upland parts, that do not sow some every year. The preparation for turnips is to plough the land in the winter, and two or three times more, as opportunities offer, during the summer months; and to manure before the last ploughing with farm-yard dung, mixed with mould collected from hedges and ditches, unless the land was manured for the preceding crop of corn.

If

If the land is not in good heart, it will not produce good turnips.

The sorts of turnips are the Red, White, and Green Round, the Tankard and Tap-rooted turnips. The first is most generally preferred; but the other kinds have each their respective advocates. The Tankard stands high above ground, and is a good sort to feed off before the frost sets in; after that, they are not so useful, being more liable to injury from frost than other sorts. The Red Round is esteemed a very hardy kind.

The time of sowing commences, on poor lands, in the end of May; but the general sowing is about New Midsummer-day: good crops are, however, often obtained by sowing the last week in July, and sometimes the first week in August; the latest sown are the sweetest, and stand the frost best.

This crop is always hoed by hand, at the expence of from 6s. to 7s. per acre: sometimes a second hoeing is given, at half price.

The principal, and by far most profitable application of this crop, is to fold them off with sheep. Some few are drawn and carried away for fattening cattle, either by strewing them on grass-land, or stall-feeding; but this is terribly destructive to the land from whence the crop is taken.

Cole Seed is much cultivated on the poor lands of the eastern part of the county, under the same management as turnips; but it is seldom hoed, and consequently much over-run with charlock. Sometimes, although rarely, it is sown for seed; but is most commonly fed off with lean flocks of sheep. Cattle and sheep, when poor, are very subject to be blown (burst) with eating greedily of this plant.

S E C T. V. — *Crops not commonly cultivated.*

THERE are several other sorts of grain and seeds which are not so generally cultivated as those mentioned in the preceding section, but which are productive and profitable in certain districts, under proper management; and which I shall arrange by themselves. These are tares, clover, trefoil, sanfoin, lucern, burnet, spinach, kidney-beans, cresses, mustard, potatoes, flax, woad, madder, and cabbages.

Tares. Of this grain there are two kinds; the winter and spring tare. The first is sown in the middle and end of September, about two bushels per acre, upon land that has borne a crop of any sort of grain, either to feed off with cattle and sheep in April, or to mow for soiling in May. The spring tares are sown and drilled as pease, early in the spring, either for soiling in July and August, or to stand for a crop of seed; the produce of which is from twelve to sixteen bushels per acre on poor land; and on that of better quality a little more. This grain is seldom sown on the best land, on account of its running too much to straw.

I learn from a note, signed T. H. that the sowing of winter and spring tares, to fold any sheep on in the spring and summer, is among the greatest improvements at present on the strong soil of the Weald of Kent, where turnips hardly ever answer; and that the sheep thrive and improve greatly, if allowed a sufficient quantity of that food; the land at the same time becomes an excellent wheat tilth*. The same person observes, from

* Without impeaching this practice on the strong soil of the Weald, I have to observe, that I have often tried it on both stiff and light soils, and have invariably found it a bad tilth for wheat. *Editor.*

the

the information of a sensible intelligent farmer of Tunbridge, that folding on clover has there turned to a still better account.

Clover. The common red clover, the sort called Cow-grass, and the white, commonly called Dutch clover, are the only sorts cultivated in Kent. They are all sown among barley or oats, in the spring, upon land that is clean and in good order. The first sort is sometimes mown three, or even on rich warm soils, four times in the summer; but the general custom is to mow the first growth, and feed the remainder; or to feed it at first till the beginning of June, and then save it for a crop of seed.

Sometimes two crops of hay are taken; and much clover on poor land farms is fed off with flocks of sheep, entirely folding the land over for wheat; for which crop no tilth whatever is so good.

A crop of clover seed is usually from two to four bushels per acre: sometimes, however, the extraordinary quantity of eight bushels has been obtained. This is a biennial plant.

Cow-grass is a species of clover, which is mown only once in a summer. This plant is perennial.

The white, or Dutch clover, is found in almost every meadow in this county; it is cultivated on some farms for supplying the London market; where, for these few years past, there has been a great demand for it. All the sorts are mown for seed with a scythe, and the seeds are thrashed off with a flail from the straw, and then ground in a mill, or worked out with flails, at about 4s. or 5s. per bushel. The produce is from two to six bushels per acre.

Trefoil is sown in the spring, with the crops of barley and oats, about two gallons of seed per acre; the crop is

is fine food for sheep to graze in the summer months, on chalky and other poor dry soils. When it is intended for seed, the crop is mown about the first or second week in July; and it is frequently thrashed off the straw in the field on a sail-cloth, and then sold by the quarter to persons who have mills and collect it, who grind the seed out of the husk, and then sell it to other merchants in the different towns and villages, for retailing to the farmers in those counties where it seldom is sowed. The produce in the husk is from two to ten quarters per acre, and each quarter produces about two bushels of clean seed.

Sainfoin. This is the most valuable of all the grasses cultivated in this county: and is much grown on the chalk-land of the eastern part: it is sown among Lent-corn on clean land, at from four to five and a half bushels per acre; it is mown for hay in June, and its produce is from ten to sixty hundred weight of dried hay, fit to stack, per acre. Those who cultivate this plant should observe, that if it is fed off with sheep, it is very soon destroyed; whereas, if sown on clean dry land, after a good summer-fallow, and preserved from sheep, it will last in the ground ten or twelve years. The aftermath is excellent to feed cattle, and the produce is sometimes very abundant.

Lucern. This is a very valuable plant to cultivate on dry lands for soiling horses in the summer months; but it is seldom made into hay. The tillage required for it is a well made summer-fallow, ploughed as deep as possible, with a good covering of manure. It is generally sown with a thin crop of barley, from 16 to 20 pounds per acre: coal-ashes or foot are sown over the crop in the spring, and sometimes a covering of rotten dung is spread upon it early in the winter. The produce from
dry

dry good land is very abundant, and four crops are usually obtained in a summer.

Burnet is very little cultivated; it grows naturally on chalky soils, and affords herbage in the winter and spring months; but it is not much liked either by cattle or sheep. It is sown, about one bushel and a half or two bushels per acre, among barley or oats; it is mown for seed in July, and being very subject to drop its seed before it is ripe, it should be mown early. It produces from eight to twenty bushels per acre.

Spinach Seed is grown in the Isle of Thanet and East Kent, to supply the London seedsmen. There are two sorts, the prickly and the round; both are sown in furrows, about twelve or fourteen inches apart; the prickly, six gallons per acre, and the round four. Early in March, when the plants have leaves about an inch or two in length, they are hoed out to the distance of four or five inches. When the crop is in full bloom, the greater part of the male plants are drawn out by hand, and given profitably to young pigs; by which operation, the female plants have more room to grow, and perfect their seed. The crop is pulled up when ripe, and thrashed in a field on a cloth, or carried to the barn. The produce is from two to five quarters per acre.

Kidney Beans are much cultivated about the town of Sandwich, and in the Isle of Thanet, for supplying the London seedsmen. The tillage for the crop is the same as for a crop of beans or pease; and the manure is rotten dung ploughed in. There is a great variety of sorts; those chiefly cultivated are, the black speckle, the Canterbury dwarfs, the white dwarfs, the red speckle, the scarlet, and the white Dutch runners. From five to ten gallons per acre, is the quantity of seed to drop in an acre of land, in proportion to the size

of the sort; the smaller the bean, the less quantity. The time of planting this crop is from the eighth to the twentieth of May; if earlier, it is in danger of being destroyed by a frosty morning. It is hoed and kept perfectly clean from weeds, and harvested, by being pulled up by the roots as the plants become ripe, in autumn. The early sorts are fit by the end of August, and the late ones are frequently not ripe till October; those which ripen late, and are in danger of being hurt by wet weather, are frequently tied up in small bunches, and hung upon poles to ripen, and, when thoroughly dry, are thrashed and sent to market. The produce is from ten to twenty bushels per acre.

Cresses and White Mustard are sometimes sown for the London seedsmen. The method of tillage is to harrow the ploughed land, and strike furrows about eleven or twelve inches apart, and then sow the seed, two or three gallons per acre, in March. The crop is hoed and kept clean from weeds, and is reaped in July, and thrashed on a sail-cloth in the field. The produce is from eight to twenty bushels per acre.

Potatoes. This crop is more cultivated by the farmers every year. Various methods of tillage are used for this plant; in general, dung is ploughed in, and then furrows are made, twenty inches apart, with a plough, in which pieces of potatoes are dropped, about fourteen inches asunder, by hand, and are then covered by splitting the furrows. Sometimes they are covered with a planting-hoe. The other methods used, are dibbling them in, and dropping the pieces of potatoes in every other furrow after the plough, while ploughing in the dung. The quantity of seed is about six sacks per acre, each weighing near two hundred pounds. The time of planting is from March to the first week in May.

May. The crop is taken up by splitting the furrows with a plough, while women and children pick up the potatoes, and put them into sacks. Sometimes the crop is dug up with forks by the sack, for sixpence each. The produce is from eighty to one hundred and fifty sacks per acre. There is a great variety of sorts in cultivation; but those chiefly used, are the white kidney, the early brown, the champion, and the peach, with the Surinam, called here the hog-potatoe.

The method of keeping them is, to lay them up in out-houses, well covered with wheat-straw; but it is said, that it is much better to bury them in ridges in the field, first covering them with straw, and then with mould.

Large quantities have been cultivated by some farmers in this county, for stall-feeding cattle, and for feeding hogs; and favourable accounts have been related of this practice; but from the observations I have made on the subject, I cannot speak in favour of it; to me it appears to be an unprofitable practice.

Flax. The best tilth for this crop is a summer-fallow, and next to that, a clover-lay: it is often sown after wheat and beans.

The land is ploughed in the winter, and in March is harrowed fine, and the seed is then sown at the rate of two bushels and a half per acre. It is weeded by hand in the month of May, and pulled up in July; the expence of which, with turning and binding into sheaves, is 16s. per acre: the length is from two to two feet and a half; but it is of little value when of the shortest length.

The produce of seed is from eight to twelve bushels; and of flax, from one to two packs of 240 pounds each, per acre.

The quality of the flax of this county is like that which is imported from Holland; but somewhat inferior.

When the seed is beaten off in the barn, the straw is taken to the ditches in small bundles, where it lies from ten to fourteen days, to prepare it for swingling. The better the flax, the more watering it requires; and the warmer the water, the sooner it ripens; but if it lies too long, it is spoiled.

The expence of swingling is 2s. 4d. per stone of fourteen pounds weight.

A bounty of 4d. per stone is paid by government to the cultivator.

Woad. This plant is much cultivated in the western part of this county on poor, stiff, and on some chalky lands. It is sown, about ten or twelve lb. per acre, among beans before the last hoeing, in the beginning of July. It requires no culture while growing, except the land is foul, and over-run with weeds; in which case, the weeds must be drawn out by hand, or cut up with a narrow hoe. When the plants have produced their bloom up to the top of the stem, it is time to pull them up, which generally happens by the first week in July; they are then tied up by a single stalk in small handfuls, and set up in a conical form to ripen; and, when thoroughly dry, the seed is shaken out on a cloth, or into a tub; the plants are then bound with rope-yarn into bundles, each weighing thirty pounds; sixty of these bundles make a load of woad, which sells from 4s. to 10s.

It is often so great a drug, that it lies in stacks or in barns for several years, for want of a market; and it has sometimes been so very scarce, as to sell for above 21s. per

per load. The produce is from half a load to a load and a half per acre.

It is generally sold by the growers to speculating merchants, who supply the dyers with it, as opportunities offer.

Madder. This is a plant also used by the dyers, which has been formerly much cultivated in the eastern part of this county; but I believe is now entirely given up.

The first cultivation of it in Kent, upon a large scale, took place in the vicinity of Faversham; the value of it being at that time 5*l.* per cwt. There was a tolerable prospect of its becoming a private and public benefit; but the Dutch, foreseeing the detriment this speculation might occasion to their sale of the plant, contrived to overstock the London market; which proved destructive to the plan and its spirited projector. I am nevertheless firmly persuaded, that good crops of excellent madder may be raised in Kent, on soils properly adapted for the purpose, and that it would be a profitable article of culture, if it were never under 3*l.* per cwt. nor would the buyers be injured by a restriction to this price; but then the legislature must interfere to prevent the importation of the root from Holland, where it can be cultivated cheaper than here. Perhaps, if that country should continue unfriendly to us, it might be good policy to encourage the growth of madder at home. I have many years been in the habit of cultivating it; but, from the low price at market, have been obliged to abandon it. There have been several modes of planting practised; but that which appears to me the best, is to plant it in single rows, about two feet apart. The land should be perfectly clean from weeds, and have been well manured the preceding year, so that the dung may be well incorporated with the soil; which should be a fine deep, rich,

rich, sandy loam, without any redundancy of moisture. In order to prepare the land for planting, it should be ploughed in the autumn, to have the benefit of the winter's frost, and harrowed in dry weather in the spring, and then kept clean by horse-hoeing until the plants are ready for drawing, which is usually by the end of May, or beginning of June: the proper time is known by the plants having got to the height of ten or twelve inches from the ground, and having produced roots branching out from the bottom of the suckers; which will be perceived by drawing up a few of them. When the suckers are in this state, all hands necessary for this work are to be provided, that the operation may proceed with every possible dispatch. One acre requires about twenty thousand plants. The plants should have about a third of their tops cut off, and then their roots should be dipped in earth, or fine mould and water, beaten together to the consistence of batter; which prevents the necessity of watering them. It requires one woman to dip the plants, two others to carry and strew them in handbills along the furrow, and about seven to follow the plough. The land should be ploughed, with a strong turn-wrest plough with six horses, twelve or fourteen inches deep; women attend to lay the plants about eight or nine inches apart in every other furrow, leaning off from the plough; by which, every time the plough returns, the row of plants laid in by women who follow the plough, are covered with the earth of the furrow.

The crop must be kept perfectly clean by the hoe and hand-weeding during the summer months, and earthed up with a plough each autumn until the third after planting, when the roots are dug up by trenching the land two feet deep. Two children, about eleven or twelve years of age, attend each digger, to pick out the roots,
the

the workmen breaking every spit of earth to pieces with their spades. The roots are then carried to be cleaned from dirt, and afterwards dried on a hop-kiln till they are brittle enough to snap asunder freely; they are then fit to pack in bags for sale to the dyers, who grind and manufacture them into powder for use. The produce is from eight to twenty hundred weight per acre.

Cabbages. The culture of this vegetable for cattle or sheep, is but very little practised; a few trials, however, have been made; but the expence of from 12s. to 20s. per acre for transplanting, and the general idea which prevails of their being a very exhausting crop, are circumstances which greatly tend to prevent their becoming an article of general cultivation. They are highly recommended by some, to large flock-masters, by way of securing food in very hard winters, when turnips cannot be used, from being covered with snow, or when they may have become rotten by hard frost.

The tillage necessary, is to plough the land in the winter, six or seven inches deep, and to cross-plough it in the spring in a dry season; and then, after manuring with a good covering of rotten dung, before planting in June, to plough it again, turning over a furrow ten inches wide, and then by planting every third furrow, the rows of cabbages will stand two feet and a half apart. The sort for cattle or sheep is the large drum-head, which in good land will grow to an immense size. The seed should be sown the last week in March, on a rich warm border of light soil, where the plants may remain till a showery season in June, when they should be transplanted with small iron trowels, in the following method:—The plants being ready drawn from the seed-bed, a woman attends in the field to dip the roots of the plants in fine mould and water, beat together to

the consistence of batter; two others then carry them in handfuls, and strew them in small lumps along the furrows ready for the planters; seven men will keep these three women fully employed: they thrust their trowels with their right hand into the land, in a diagonal direction, with the point towards them, and then, by pulling the handle of the trowel a little towards them, the earth is lifted so as to leave a space to put in the plant with the left hand; the trowel is immediately drawn out, and the earth pressed close to the root of the plant with the handle. The land being ploughed straight, and left unharrowed, there is no occasion for lines to direct the planter. By rolling the surface, after the plants are in, the work is finished. In July and August the crop must be kept clean by horse and hand-hoeing.

Turnip-rooted Cabbage. This kind was first introduced in general culture by the late Mr. Reynolds, of Adisham, in this county, for which he obtained a medal of the Society for the Encouragement of Arts and Sciences, many years ago. It is a most valuable plant; and every farmer who keeps sheep, should have a small piece to eat off in the month of April, after turnips are gone, and before there is a plenty of other herbage. The severest winters do not hurt it; and it produces a great quantity of nutritive and wholesome food; it is however an exhausting crop, and expensive to get out of the ground; but its great value, as a plentiful supply of good food for stock, when, in some seasons, there is nothing else to be had, is more than sufficient to counterbalance every thing that can be said against it. The time for sowing the seed, its culture, &c. are the same as before mentioned for cabbages.

CHAPTER VIII.

GRASS.

SECT. I.—*Natural Meadows, Pastures, and Marsh Land.*

THE quantity of land in natural meadow, or upland mowing ground, is very small in East Kent, in proportion to the extent of that part of the county, or in proportion to the hay-meadows of many other counties. The greater part of the hay of East Kent, even that which is used for horses, is produced in the marshes, from a want of a sufficient portion of meadow-land.

The Weald of Kent abounds in this description of grass-land, which produces a vast quantity of excellent hay, of a quality sufficient to fatten some of the finest oxen in the kingdom.

The other parts of the county have here and there small parcels of meadow-land, some few of which are of good quality; but in general the hay-meadows of Kent are much inferior to those of many other counties; and this perhaps may be the reason why there is so small a portion of this kind of grass-land in this county.

Pastures for keeping small dairies are found on every farm; but there are no dairy-farms of any great extent in this county. The farmers in the upland parts, in general, desire no more pasture-land on their farms than is necessary for the keeping a small dairy for supplying their

their families with milk and butter, and a little fresh butter for sale. Cheese and salted butter for sale, are seldom or never made to any extent. The markets for corn being so exceedingly easy of access, by means of the navigable rivers and the sea, tillage is thought more profitable than grazing on dry lands; which, if they were laid to grass, would produce but a scanty herbage for cattle.

The downland sheep-walks, which abound on the chalky hills of East Kent, can hardly be called pasture.

The marsh-lands are situated along the borders of the rivers and the sea-shore. This sort of grass-land is of a very considerable extent.

Romney Marsh contains — 44,000 acres

Borders of the Stour, about 27,000

of the Medway, }
of the Thames, } about 11,500

and the Swale, &c.

the whole is used either for fattening cattle and sheep, or for breeding of sheep.

The system of management of Romney Marsh, is that of breeding, rearing, and fattening sheep; the practice of feeding lean cattle, and even fattening some of the smallest sorts of Welch ones, is only made subservient to the principal object, sheep-grazing; merely to take off such grass as runs away from the sheep in a growing time; it is always considered extremely bad policy to see much grass on the land among sheep. Every grazier, whose business is complete, has two sorts of land; namely, breeding land and fattening land. The breeding land is stocked with ewes in the autumn, for the winter: every field has such a number placed in it as the occupier supposes it will keep; which is from two to three

three and a half per acre, in proportion to the strength of the field.

In kindly growing summers it is particularly necessary to keep a strict watch on the grafs, that it may not run away from the sheep, and to prevent it by adding more sheep, or any other stock that can be had to keep it under; for if it is suffered to run from the sheep, they are much injured, and the grafs gets coarse. Upon such occasions, cattle are generally taken into keep at very low prices.

A very few oxen are fattened, which are bought in from the plough-teams of the wealds of Kent and Suffex. They are very large, and have a reserve of the best grafs to themselves. From their size, they require a longer time to get fat than the smaller sorts: they usually weigh from forty-five to seventy score each.

Some of the other marsh-lands of Kent are used nearly in the same manner; others are grazed by Welch bullocks for fattening: and in some parts the graziers buy the lean sheep from the flocks of East Kent, and fatten them for Smithfield, or other markets.

The land of this county is seldom changed from meadow to arable, or from arable to meadow. The dryness of the soils of the upland parts of the county, occasions the land to be but badly adapted for meadow: when once a field is become a good old meadow, it is held sacred; and it is a common covenant in leases, not to break up old grafs-lands.

SECT. II. — *Artificial Grasses.*

For laying land down to either meadow or pasture, the common practice is to sow hay-seeds, which are the sweepings of hay-lofts, procured in London at from 10d.

to

to 1s. 3d. per bushel; these are sown in the quantity of about ten or twelve bushels per acre, and ten or twelve pounds of white clover-seed, under barley, on land that has been made perfectly clean by a summer-fallow.

By this mode it frequently happens that very bad sorts of grasses are raised, and the farmer's hopes of a good pasture are totally destroyed. It is, therefore, a much better method, and indeed the only good one, until the best sorts of grasses are cultivated for sale, to save for seed a piece of fine old meadow that is known to abound in the best sorts of grass, by letting it stand about three or four weeks longer than it should, when intended to be mown for hay. When it is mown and ripe, let it be thrashed on a sail-cloth in the field, and immediately sown on the piece of land intended for the new pasture; which should, by a good summer-fallow, be brought into fine tilth to receive the seed. This, with ten or twelve pounds of white clover, will make an excellent meadow.

The culture, with the turn-wrest plough, leaves the land so perfectly clean, that no instructions are necessary here; only simply to harrow the seed in and roll the land down smooth frequently, until the grass is well matted, and the land becomes firm enough to bear the tread of cattle.

There are many plants which, by some, are called Artificial Grasses; such as Sainfoin, Clover, Trefoil, Lucern, Burnet, &c. As these are treated of under *Crops cultivated*, it is needless to mention them here.

SECT. III. — *Hay-making.*

THIS operation is very badly conducted in most parts of this county, owing perhaps to a scarcity of hands.

On

On the early upland meadows, the hay-harvest commences by the end of June, and continues, on different soils, during the whole of July and beginning of August. The common mode in the eastern part of Kent, is to let the grass lie a day or two in the swath, and then turn it over; some spread it all over the land, turning it at intervals, until it is sufficiently dry to stack. The very excellent method of putting it up into small cocks every evening, increasing their size as the hay becomes dry, is not so much attended to as it ought to be.

Clover for hay requires to be made more dry than grass; for if the sap is not thoroughly dried up, it often heats too much, and is spoilt. Sainfoin also requires to be well dried, but not quite so much as clover; they neither of them are apt to fire in a stack; but, frequently, if carried too green, will burn to a coal. Large stacks being apt to heat more than small ones, it is necessary to carry the hay, of whatever kind, so much the drier; and if proper attention is paid, and the weather will admit a large quantity being carried together perfectly dry, there is no occasion for any chimnies being made; but when, from apprehensions of approaching bad weather, it is hurried in too soon, then chimnies made, by drawing up the stack as it ascends, a basket or a sack stuffed with hay, will certainly prevent any danger of fire. When, by means of rainy weather, the hay of any sort has been much washed, and cannot be got in in good order, a layer of dry wheat-straw between every load or two, and a small sprinkling of salt, are often used with great advantage. Bullocks are said to thrive very fast on salted hay.

SECT. IV. — *Feeding.*

THE system of grazing in the marsh-lands of the Isle of Thanet and East Kent, is generally to buy in lean cattle and sheep, and keep them till they are fit for the butcher. The cattle are principally bought out of the Welch droves, and the sheep from the fold-flocks in the vicinity.

The grass that is mowed for hay is usually set up in stacks, either in the marshes near a foddering-lodge *, or carried home to the farm-yards on the borders of the marshes, and given to fattening bullocks, or sold to the inn-keepers at Margate or Ramsgate.

The grazing in East Kent, on the upland farms, if it may be called grazing, is that of feeding flocks of lean sheep on the downs and seeds, folding them every night. These are bought in wether-lambs in August, and sold out lean, when about two years and a half old, to the fattening graziers. Some farmers of late years, by sowing many turnips, make their wethers fat, and sell them to the butchers in the spring.

The upland pasture is wholly employed in breeding lambs, or feeding young lean sheep. These fields are generally so poor, as to keep only one or two breeding ewes per acre, or two or three tegs †.

The inferior parts of the marsh-land are used in the same way ; but the best fatten a great number of sheep, and many head of cattle.

The feeding of the grass-lands of the western part of the county, is done in various ways. Some have dairies of six or eight cows, which are of mixed breeds, between the Staffordshire, Welch, and Suffex.

* Shed.

† Sheep of a year old.

Some

Some of the small dairies of three or four cows, have the Welch sort only; and there are farmers who fatten a few Welch cattle on the best of their meadow-lands with hay and grafs in the winter.

A flock of sheep under a shepherd, and folded at night, is a very rare sight in West Kent; it is only a very few of the largest farmers who follow that practice.

Many farmers of this district have small parcels of different sorts of sheep, chiefly either Wiltshire or South Down, for feeding on such grafs land as is not used for the dairies, or fattening cattle.

The grazing of the Weald of Kent, is to rear young cattle, which are put out to keep to the Romney-Marsh graziers in the summer. In the autumn, they are taken home to the layers and inferior grafs-lands; and in the winter to the straw-yards, or stay out on rough lands, and have straw carried to them; when they are of age to fatten, which is at four years for steers, and three for heifers, they have the best grafs with hay. That which is made of rye-grafs and clover, is given at the first part of the winter; and the best hay of the farm is used to finish them. Old meadows are always mown for hay to fatten the oxen.

The inferior pastures are stocked, first with milking-cows to take off the head grafs, and afterwards with the lean cattle, or working oxen. A suit of fields are thus fed in rotation during the summer.

A great number of Romney-Marsh lambs are taken into keep in the winter, on the stubbles, old layers, and meadows; the price of keep is from 2s. to 2s. 6d. per score, per week. These lambs are returned the 5th of April, and in bad winters, frequently go home nearly starved; from which they sometimes die in great numbers when they

they get into good keep. Great losses are likewise often sustained after a wet autumn, by the rot.

The layers of rye, grass, and clover, are mown for hay, which is used for the plough-teams and lean cattle; and some of the best is given to fattening bullocks in the beginning of the winter. The old meadows produce great crops of hay, which is of a very fattening quality. Bullocks fed thereon, frequently weigh from forty to forty-five score each; and some old working oxen attain the weight of sixty score, and sometimes much more. The fat oxen are commonly sold between the months of March and June. The sale of them is the chief dependence of the Weald farmers for payment of their rent, and other heavy expences.

CHAPTER IX.

GARDENS AND ORCHARDS.

IN the vicinity of all the great towns, there is a portion of land appropriated to the culture of vegetables. In the neighbourhood of Gravesend and Deptford, a very great quantity is raised for the supply of the metropolis. Of asparagus there are many fields, containing several acres each. To describe the numerous tribe of vegetables, their culture and produce, would far exceed the limits

limits of this Work. It may perhaps be sufficient to report, that fine rich land, conveniently situated near great towns for this purpose, lets from 4*l.* to 10*l.* per acre.

In the neighbourhood of Maidstone are a great number of small fields, of from one to ten acres, and somewhat more, planted with fruit of different kinds, for which the rocky soil of the neighbourhood seems particularly adapted. The easy water-carriage to the metropolis from the Medway, up the Thames, renders the growth of fruit a very profitable article of husbandry. The best method known here for raising orchards of apples and cherries, and plantations of filberts, is to plant them among hops, by which they very soon come to perfection: the constant culture of the land for the hops, with the warmth and shelter they afford the young trees, causes them to grow with great luxuriance*. It is a very common practice to plant hops, apples, cherries, and filberts, all together. Eight hundred hop-hills, two hundred filberts, and forty apple and cherry-trees per acre. The hops stand about twelve, and the filberts about thirty years; by which time the apples and cherries require the whole land.

Sometimes apples and cherries are planted in alternate rows, with two rows of filberts between each of them.

There are some plantations of filberts raised among hops, without any other trees.

The method of planting apple and cherry-trees, is to dig holes about two feet square, and two spits deep, taking out the rocks, and turning down the surface-soil

* This is erroneous. It is a bad practice; for cherries do best when early laid down to pasture. Apples, and filberts, and hops, together, where the soil is kindly for filberts, are planted; or apples and hops if not; or apples, cherries, and hops, if intended to be laid down early to pasture: and in a few instances, filberts and hops only. But filberts answer well on very few soils.

Note by a Middle Kent Farmer.

on which the young trees are placed, and the remainder of the earth is trodden down close about the roots: they are supported by stakes until they get sufficient strength not to be hurt by gales of wind. A composition of lime and night-soil is, with a brush, painted on the stems of the young trees; which is said to promote the growth of them exceedingly.

The favourite sorts of apples for cyder, are the golden rennet †, sharp russet, golden mundy, kernel-permain, and the fire-apple: for domestic uses, the lemon-pippin, or quince apple, Farley-pippin, royal russet, ribstone pippin, Holland pippin, pigsnout, walling, loans permain, nonpareil, golden pippin, French pippin, Kentish pippin, and golden nob.

The cyder-fruit generally hangs on the trees until the twentieth of October, and is then gathered and laid in heaps ‡ under cover; the early sorts, a month, and the later ones from one to three months, to ripen; it is then ground and pressed, and the juice put up into casks. In plentiful years, cyder-fruit sells for 14*d.* and in scarce years, up to 2*s.* per bushel.

Mr. Stone, of Maidstone, is a cyder-maker of great repute, and in a very extensive line of business; being called upon in this Survey, he, with great liberality, offered to communicate any information for the benefit of society. His warehouse, mill, press, and vaults, were

† It is a remarkable circumstance, that notwithstanding the golden rennet has flourished and borne extremely well in this part of Kent, the young trees planted of late years, do not succeed well on any soil. The same is to be remarked of the black-heart cherry, which when it gets to the size of a man's thigh in the stem, gums and dies. Yet old trees of both sorts continue to bear well.

‡ Seldom so late, I believe; oftener in the first week of October; and it is customary to house the market-fruit; but often the cyder-fruit lies in large heaps in the orchard to mellow.

Notes by a Middle Kent Farmer.

contrived by himself, many years ago, with great ingenuity, and are exceedingly convenient.

From many years experience, he finds no particular advantage in watching the fermentation of cyder, in order to rack it at any exact time: a method considered of great consequence in Herefordshire, as mentioned by Mr. Marshall, in his Rural Œconomy of that county.

Mr. Stone mixes all sorts of apples together, and makes excellent cyder. Golden pippins alone make very fine cyder, if well managed; but great skill and care are required.

The sorts of apples for domestic uses are sold to fruiterers, who send them to London by the hoys, and to the north of England by the coal vessels.

Fruit-orchards are considered as the most valuable estates. Tithe is very rarely paid in kind; but in lieu of it, a composition of 2s. in the pound on the price of the fruit.

Cherries. § The site preferred for this fruit, is where there is a deep surface of loam upon the rock. If planted by themselves, they are placed from twenty to thirty feet distant, and are put somewhat deeper in the earth than apples: in other respects, the management is the same. The sorts are the black heart, white heart,

§ There is no necessity for a depth of soil; eighteen inches is enough for any. Cherries require to be planted according to their sorts for distances apart. A heart requires double the distance of a duke or morello, for instance: and the same holds good with respect to apple-orchards.

Our rocky soils are composed of two or three sorts, viz. pinnock, hassock, and loam, and generally the small shatter stones from the rock mixed in it. These are in strata, according as the rocks lay; and the three sorts, oftener than otherwise, lay in veins running close together. It strikes me, that on account of their being blended together in cultivation, we should attribute much of the fruitfulness of our land to it. I suppose there is not one day in the year when the plough is at work on my farm, that it does not grate against the rocks which lay so near the surface. But it must be remembered, we plough very deep: from eight to twelve inches deep.

Note by a Middle Kent Farmer.

Flemish, or early Kentish, Courone, Hertfordshire black, wild black, and red cherries; also May-dukes and morellos.

They are usually sold to the higlers, who retail them on the sea-coast of Kent, by the sieve, or basket, containing forty-eight pounds each; or they are sent to London by water, and consigned to fruit-factors.

Tithe is paid by composition of 2s. per pound on the sale.

|| Cherry-gardens, while they are in full bearing, which is seldom more than thirty years, are more profitable than orchards; but after that time, the orchards produce the most money.

Filberts. There are several hundred acres in the vicinity of Maidstone. The soil best adapted for them is the stone-shattery sandy loam, of a quality somewhat inferior. It is a disadvantage for the trees to grow with great luxuriance, as they bear most nuts when but moderately strong; if they are planted among hops, without apples or cherries, they are put about twelve feet apart; when the hops are dug up, the filbert-plantation is kept clean by repeated digging and hoeing; and great skill is necessary in pruning, to make them bear well *. A small part of the produce of this plantation is sold to the higlers, who

|| Cherry-gardens do not at any time pay equally to apple-orchards; and they are getting on that account thinner than formerly, as from the shortness of their duration in bearing, and at no time paying so well as apples, there are fewer plantations made now than there formerly were.

Note by a Middle Kent Farmer.

* It is entirely owing to the skill and management in pruning the trees upon even a favourite soil that they pay. They are trained in the shape of a punch-bowl, and never suffered to grow above four or five feet high, with short stems, like a gooseberry-bush, and exceeding thin of wood. It is supposed, that within a few miles round Maidstone, there are more filberts growing than in all England besides. These are also excellent in quality, and, if suffered to stand till ripe, will keep good for several years in a dry room or closet. But when gathered, they should be laid thin on the floor of a room where the sun can get in to dry them.

Note by a Middle Kent Farmer.

retail

retail them in different parts of the county ; but the principal part is conveyed by water to London, and there consigned to factors, who sell them by the hundred, of an hundred-and-four pounds, from 16s. to 40s. per hundred, in proportion to the crop and demand.

Tithe is compounded for by the year.

Hop Grounds.

The hop plantations in the vicinity of Canterbury and Maidstone, being the principal ones of the county, a description of them may suffice for the whole.

The plantations near Canterbury, called the City Grounds, are those surrounding the city, to the distance of two or three miles, and contain between two and three thousand acres.

The hops growing there, and in East Kent, are of a very fine rich quality, and if well managed, are of a good colour. They are highly esteemed by the London brewers for their great strength, doing more execution in the copper than those of any other district.

The best of these plantations are those which have a good deep rich loamy surface, with a deep subsoil of loamy brick earth. This kind of land forms the principal part of the plantations of East Kent : there are, however, some good grounds, where the surface is very flinty, and some of a gravelly nature ; but these are very inferior.

The plantations of the town of Maidstone and its vicinity, extend through the several parishes along the shelf of land which lies below the chalk - hills, on the borders of the Weald of Kent. This plantation, in some years, grows great crops of hops ; but the quality of

them is much inferior to those of Canterbury and East Kent *.

When a piece of land is intended to be planted, the first thing is to plough the land as deep as possible, early in October, and to harrow it level; it is then meted each way, with a four rod chain, placing pieces of reed or stick at every tenth link, to mark the place of the hills; which makes 1000 per acre. This is the general method; but some few grounds are planted eight, and some twelve hundred per acre; some are planted wider one way than the other, in order to admit ploughing between the hills instead of digging; but this practice, although it has been tried many years, does not seem to increase, on account of the difficulty of digging along the rows where the plough cannot go; that part being much trodden with the horses in ploughing, digs so much the worse, that an extra expence is incurred, which in some measure, defeats the œconomy of the plan. When the hills are marked out, holes are dug about the size of a gallon, which are filled with fine mould, and the nursery-plants placed in them.

Some put three plants, others two, and some only one good one to each hole. If the land is planted with cuttings instead of nursery-plants, the holes are dug in the spring, as soon as cutting-time commences; some fine mould is provided to fill up the holes, in which are placed four or five cuttings, each about three or four inches in length: they are covered about an inch deep with fine mould, and pressed down close with the hand. When the land is planted with cuttings, no sticks are required; but if nursery-plants are used, they require sticks or small

* In the margin of the original printed Report, which was circulated for remarks and observations, was a long note by a Middle Kent farmer; for which, see the Appendix.

poles,

poles, six or seven feet high the first year: in both cases, the land is kept clean during the summer, by horse and hand-hoeing: the next winter dug with a spade, and early in the spring the old binds are cut off smooth, about an inch below the surface; a little fine mould is then drawn over the crown of the hills. As soon as the young shoots appear, so that the hills may be seen, they are stuck with small poles, from seven to ten feet long, in proportion to the length it is expected the bind will run; these poles are called seconds, and are generally bought in the woods, at from 5s. to 8s. per hundred, and three of them are placed to each hill. As soon as the bind gets about two feet in length, women are employed to tye them to the poles. The land is kept clean during the summer, by horse and hand-hoeing, as before mentioned. The proper time for gathering them is known by the hop rubbing freely to pieces, and the seed beginning to turn brown. They are picked in baskets, containing five bushels each, and are carried to the oast in bags, at noon and evening, for drying. Great care and skill are necessary in this branch of the business; the smallest neglect or ignorance in the management of the fires, will spoil the hops, and occasion great loss to the planter. When dried and sufficiently cool to get a little tough, so as not to crumble to powder, they are put into bags or pockets; the former containing two hundred weight and a half, and the latter, an hundred and a quarter: they are then trodden very close, and weighed by the exciseman.

The second year after planting, full sized poles from fifteen to twenty feet in length, according to the strength of the land, which cost from 16s. to 36s. per hundred, are placed to the hills instead of the seconds, which are removed to younger grounds. Here great care is necessary

not to overpole; for by that means young grounds are often much weakened; and it is equally so, not to over-dung them, as that will make them mouldy.

Fifty cart-loads of well rotted farm-yard dung and mould, once in three years, are generally esteemed sufficient for an acre of land.

Implements and Appendages to the Hop Grounds.

Every hop-plantation of four or five acres, requires an oast about sixteen feet square, which, built substantially with the requisite stowage room, costs from 150*l.* to 200*l.*

This is furnished with a set of picking baskets, about twelve in number, which cost about 5*s.* 6*d.* each. Also a good scale-beam, with weights and scales, which together costs about 5*l.*

A shim made with a frame, like a wheel-barrow, is esteemed the best sort; it costs about 2*l.* 2*s.* This implement is a very useful and convenient one likewise for tearing up weeds on summer-fallows.

A harrow to be drawn by one horse, with a small wheel in front, to go round at the ends of the plantation, and a pair of handles to be holden by the man who follows it, in order to keep it from bruising the binds. This implement costs 1*l.* 15*s.*

A large iron peeler, to make holes in the land for the poles, costs 6*s.* or 7*s.* A hop-dog, to wrench up the poles, costs 5*s.*

PRODUCTIONS.

There can be no certain report made of the produce of the hop-plantations, because, in some years, the growth of these districts is less than two hundred weight per acre, and in others it is fourteen or fifteen: the average may be seven or eight.

CHAPTER

CHAPTER X.

WOODS AND PLANTATIONS.

THE woodlands of the eastern part of Kent are dispersed principally between the great road from Rochester to Dover, and the chalk-hill that runs from Folkstone by Charing to Detling. These woods furnish the country with fire-wood, tillers for husbandry uses, and the dock-yards with timber for ship-building; but the most material part of their produce is the immense quantity of hop-poles cut out for the neighbouring plantations.

*The Management of Woodlands in the District extending
from Chatham-Hill to Charing.*

*Copy of a Paper, presented to the Kent Agricultural Society by
R. Tilden Esq.*

“The soil on which these woods grow, is, for the most part, flint and clay, with chalk at no great distance from the surface. Where chalk is the chief component part of the upper surface, the wood is of slow growth and little value. They are generally cut down from ten to fourteen and to eighteen years growth; and the price varies from 5*l.* to 15*l.* per acre, depending in a great measure on the goodness of the wood, the demand, and the price of poles. Hop-poles are the chief article which make woods valuable in this part of the country; there is not only a constant demand for them at home, but they are carried as far as Maidstone, and to a considerable distance beyond, the plantation there being so very extensive

five as to require more than the woodlands in that situation produce, and the planters preferring the poles which grow upon the hills to those of quicker growth and nearer home.

“Part of the woodland in this district is in the hands of the proprietors, and part is let to the tenants who occupy the adjoining farms. When fit to fell, it is commonly sold by valuation. After the purchase is made, and the leaf is off, the wood is parcelled out among the different workmen employed by the purchaser. The first step is to clear the stocks of the small spray, bushes, &c. These are made up into bavins, bound with two wists †, and are called winter kiln bavins. They should be six feet long, and two in circumference over the bands: the price of making them is 3s. per hundred; and they sell in the woods for 6s. per hundred. If bushes are wanted, the best are bound up in bundles with one wist, at 1s. 6d. per load, consisting of fifty bundles; and they sell in the woods from 7s. to 10s. per load.

“After the stocks are cleared, they are cut down and thrown into ranges, wide enough to admit a team to pass to fetch away the different articles. These are cut out as the stocks are felled, and consist of first and second best poles, first and second ordinary poles, use-poles, stakes, and binders, thatching-rods, austry-rods, hurdle-rods, wheel-timber, piles, and props. The remainder, not fit or wanted for these purposes, is thrown into the range, where it remains to employ the woodmen in the spring.

“The best first poles are chefnut, ash, willow, and maple: their length should be eighteen feet; their price varies from 30s. to 35s. per hundred; chefnut-poles are dearest, varying in price from 15*l.* to 20*l.* per 1000 in the wood.

† Local term for bands.

“The

"The best second poles consist of the same wood as the first, and are only a smaller pole; varying in length from fifteen to sixteen feet. They sell in the wood from 20s. to 21s. per hundred.

"The first ordinary poles consist of oak, gascoign, red birch, beech, and hornbeam; the two last very inferior: their length should be from seventeen to eighteen feet; they sell in the wood from 12s. to 20s. per hundred.

"The second ordinary poles, varying in length from fifteen to sixteen feet, sell in the wood from 10s. to 12s. per hundred.

"Use-poles consist of ash, chefnut, willow, oak, asp, and gascoign, which are too large for hop-poles. They are cut at one halfpenny each, and sell in the wood from $4\frac{1}{2}d.$ to $6d.$ according to the size, length, and goodness of the wood. The largest sort are sold by admeasurement, from $8d.$ to $9d.$ and $10d.$ per foot.

"Stakes and binders are cut out of hazel, ash, oak, willow, and maple; they are bound up in bundles, twenty-five in each; the price of cutting is $1\frac{1}{2}d.$ each; and they sell in the wood from $4\frac{1}{2}d.$ to $6d.$ per bundle. The length of a stake should be five feet; of a binder, from fifteen to eighteen feet.

"Thatching-rods are cut out of the same kinds of wood as the stakes and binders which are not of a proper length for binders, or large enough for stakes. They are bound up in bundles, fifty in each; the price of cutting is $2d.$ per bundle; and they sell in the wood for $6d.$ The length of a bundle should be six feet.

"Austrey-rods are smaller than thatching-rods, cut out of hazel. They are used to bind billet-wood for the London market. They are bound up in bundles, one hundred rods in each; the price of cutting is $2d.$ and they sell at $6d.$ per bundle in the wood: their length is five feet.

"Hurdle-

"Hurdle-rods are cut to make hurdle-gates for folding sheep; they are cut out of the same kind of wood as binders: indeed they are only a small binder, from ten to fourteen feet long. They are bound up in bundles, fifty in each: the price of cutting is 2*d.* and they fell in the wood at 6*d.* per bundle.

"Wheel-timber is cut out of large beech of two or three falls growth: it is used for fellies of wheels; it should not be less than seven inches diameter at the small end. It is cut down for one penny for every length of three feet, and sold in the wood from 7*d.* to 8*d.* per length; if sold by admeasurement, at the same price per foot; if smaller, it is cut out for axle-trees, plough-cheps, and wrefsts. Axle-trees should be seven feet long, and six and a half inches in diameter at the small end; they are cut for 1*d.* each, and fell in the wood for 10*d.* Plough-cheps should be five feet long, and five inches diameter at the small end: they are cut for one halfpenny each, and fell in the wood for sixpence.

"Plough-wrefsts should be four feet long and five inches diameter at the small end: they are cut for one halfpenny each, and fell in the wood for 2*d.*

"Piles are cut out of beech and hornbeam; they are used to prevent the tide from washing away the chalk at the footing of the sea-walls, and are cut of different lengths.

	s.	d.			l.	s.	d.	
12 feet long	1	1 $\frac{1}{2}$	} each.	6 feet long	1	15	0	} per hundred.
11 ———	1	0 $\frac{1}{2}$		5 ———	1	5	0	
10 ———	0	11 $\frac{1}{2}$		4 ———	0	19	0	
9 ———	0	10		3 ———	0	12	0	
8 ———	0	8 $\frac{1}{2}$						
7 ———	0	7						

"N. B. The above is the price of the piles delivered at the place where they are to be used. Land-carriage is 5*s.* per

per hundred for six feet piles, 4s. for five feet, 3s. for four feet, and 2s. for three feet piles. If they go by water-carriage, the price is the same.

“ Props which are used in the coal-mines at Newcastle, are cut out of oak and birch; they should be cut six feet four or five inches long, and be two and a half inches diameter at the small end: the price of cutting is a halfpenny; and they sell in the woods at 2d. each.

“ These are the chief, if not all the articles which are cut during the winter. In the spring, what remains in the ranges is made up, part into summer kiln-bavins, which are made of the smallest wood, and bound with two withes, and should be six feet long. The price of making is 3s. per hundred; and they sell in the wood from 8s. to 9s. per hundred. Part is made into household bavins, being the best faggots which are made; they should be six feet long, and two feet over the band; the price is also 3s. per hundred; and they sell in the woods from 12s. to 14s. per hundred. The remainder is cut out in cord-wood; each stick should be three and a half feet long, the length of the cord fourteen feet, and it should be stacked three feet high; the price of cutting and stacking is 2s. per cord; and the cord sells in the wood from 12s. to 16s.

“ It has been found by those that have been very attentive to the management of their woodlands, that wood, like every thing else, decays and produces fewer poles every fall, unless they are replenished. This is best done in the autumn after the wood is felled. The plants, whether chefnut, ash, or willow, should be taken up from the nursery with as much earth to their roots as can be conveniently done*, and their small roots should be cut

as

* Removing earth with the roots of plants of the kinds here mentioned, is impracticable and unnecessary; no deciduous plants, but
Ame-

as little as possible. Strong plants taken up in this manner, and planted with care, seldom fail. They should be looked over the next spring, to fasten those which the frost may have loosened.

“The tithe of woodlands was, a few years ago, at 2*s.* in the pound; but now varies from 2*s.* 3*d.* to 2*s.* 6*d.* and to 3*s.* † Many clergymen are of opinion that the woods ought not to be cut down, but to be made up in the different articles for sale; but this is not true: if the clergyman and purchaser should disagree, all that the latter has to do, is to sever every tenth perch and leave it: the expence of doing this is found to be about 3*d.* in the pound. If wood therefore is sold at a fair valuation, it appears unreasonable for any clergyman to demand more than 2*s.* 3*d.* in the pound. ‡”

American flowering-shrubs, require earth with them, or will they retain it.

Note by Mr. Randall of Maidstone.

† I never heard of 3*s.* being paid for the tithe of wood; 2*s.* 6*d.* is a common price, and ought not to be called unreasonable; for if the purchaser gives 20*s.* for the wood and 2*s.* for the tythe, amounting in the whole to 1*l.* 2*s.*, the tythe of which will be found to be nearly 2*s.* 2½*d.*; and the expence of felling, and in most cases 2*s.* 6*d.* is a reasonable charge.

Remark by the Rev. Mr. Pryce.

This mode of estimating tythe is erroneous, because it supposes eleventh-tenths of the whole; and by that means makes the tythe too small. The fact is, that the seller can engage only for nine-tenths; and, consequently, the parson's share is a ninth part of the sum the wood sells for, with an addition of a tenth of the price of severing; which in most cases will be found to amount to about 2*s.* 3*d.* in the pound, as Mr. Tilden very justly observes.

Editor.

‡ The practice of laying down the different sorts from the stock to strike into the ground, is a valuable discovery; and I believe rather a local one. They produce hop-poles more quick by this, than in any other way.

Note by a Middle Kent Farmer.

The method is, to select long healthy young branches from the stocks adjoining to vacancies in the wood, and then to dig holes, each about two feet square, and fifteen inches deep, returning the surface mould into the bottom of the hole, and then bending each branch and fastening it down with a peg about ten or twelve inches below the surface, treading over it the remainder of the mould.

Editor.

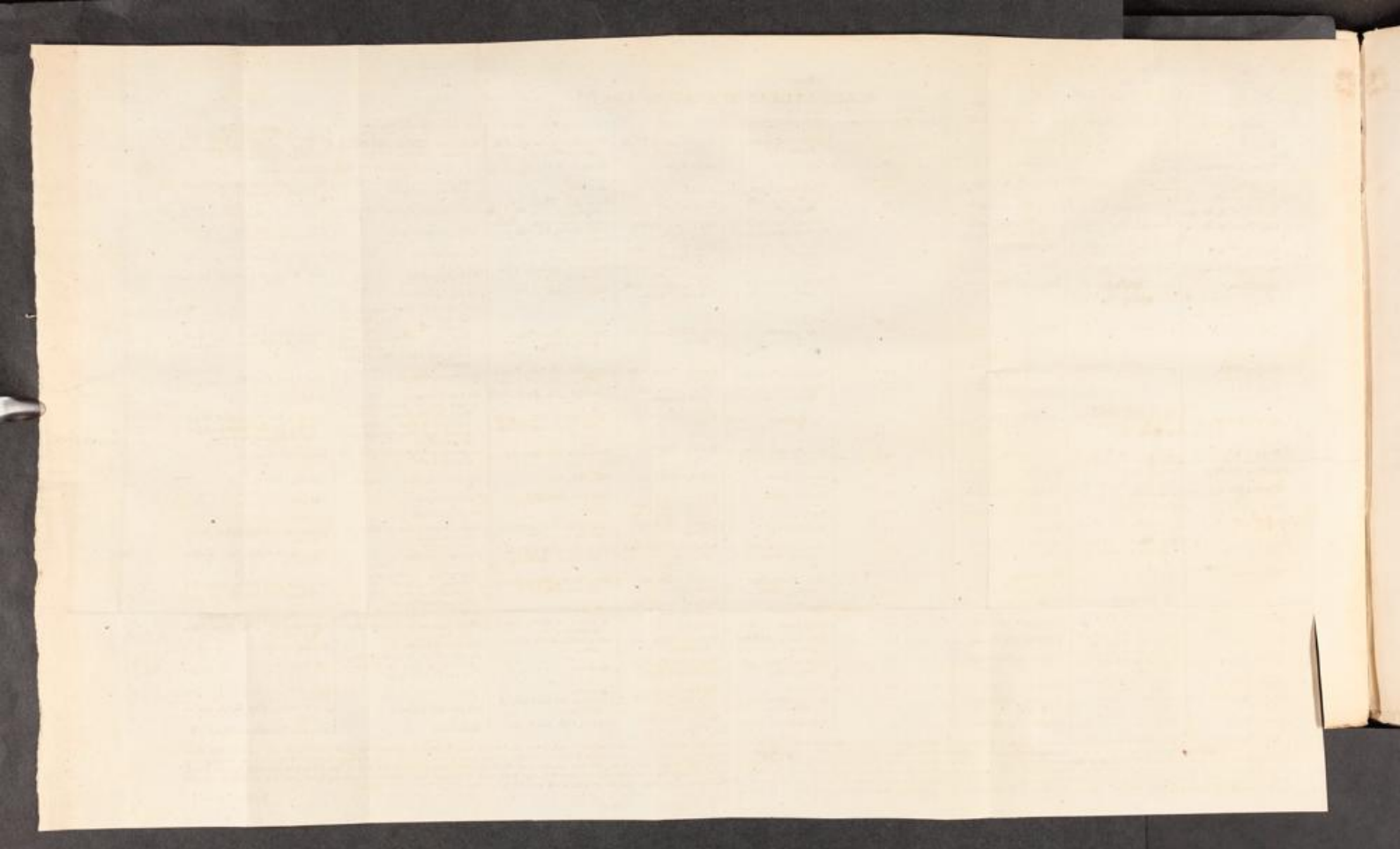
General

AGRICULTURAL SURVEY OF KENT.

Name of Wood.	To whom they belong.	For what they are in.	Area, supposed to contain.	Surface Soil, generally.	Subsoil.	Produce formerly Natural.	Lesser from Improvements.	Articles for Sale.
Stallfield.	Rev. Mr. Watkin.	Stallfield.	400	Heavy Loam and gravelly Loam.	Heavy Loam and fine Chalk.	Beech, Hornbeam, Oak, Ash, Hazel, Birch, &c.	Some Ash, Chestnut, and Willow planted, felled.	Some Timber, Hop Poles, Cord Wood, Hardly, and various for Basket, and Lanes.
Newenden Bottom.	—	Newenden.	119	Sandy Loam.	Heavy Loam.	As above.	But little done in Planting.	Produce as above.
Richers Wood.	— Chambers, Esq.	Blickner and Hacking.	149	Fine strong Loam.	Heavy Loam.	As above.	Some good young Plantations of Ash, Willow, and Chestnut.	Some Timber and Fencing Poles in addition to the above.
Chalfont Wood.	Earl of Aylesford.	Newington and Milton.	100	Gravelly and sandy Loam.	Gravelly Loam.	Some Ash, Birch, Oak, &c.	Extending good Chestnut Plantation.	Quantities of Hop Poles, Fencing Poles, and all the above.
Long Tunn.	— Bell, Esq.	Thornham and Stockbury.	117	Gravelly and sandy Loam.	Heavy and gravelly Loam.	Some good Ash, Birch, Hornbeam, &c. with tall Oak.	No Improvements made.	Some Fencing and Hop Poles, Cord Wood for Charcoal, &c.
Squirrels Wood.	Mr. Head and Rogers.	Stockbury.	100	Fine and dry poor gravelly Loam.	Chalk in 1 foot, fine gravelly Loam.	Some Birch, ordinary Oak, &c.	No Improvements.	Cord Wood, Basket, and a few Poles.
Emborough Wood.	Earl of Aylesford.	Thornham.	115	Fine and gravelly Loam.	Chalk a foot, fine deep gravelly Loam.	Some good Ash Poles, a few Oaks, Hazels, &c.	No Improvements.	Cord Wood, Hop Poles, Basket, Sashes, &c.
Mount Down.	— Bell, Esq.	Detling and Thornham.	100	Fine and gravelly Loam.	Some chalky, not quite so good as above.	Newly as above.	No Improvements.	As above.
Cockburn Wood.	— Fount, Esq.	Detling.	170	Same as above.	Few Flints, nearly as above.	Some Oak, Hazel, Beech, and a few Ash.	Old Woods and Plantations of Chestnut and Ash. They have recently been killed up, many years ago, with Chestnut, Ash, and Willow; and now again filling up, under Mr. Randall's direction.	Abundance of Hop Poles, Fencing Poles, Sashes, Cord Wood, &c.
Charham Wood.	— Bell, Esq. of Chilton.	Charham and —	500	Fine gravelly Loam.	Stronger Loam with Flints.	Some Oak, Ash Poles, Beech, &c.	No Improvements going on.	Poles, Basket, Cord Wood, &c.
Hight Wood.	—	Aylesford and Beasley.	100	Chalky fine gravelly Loam.	Chalk and fine gravelly Loam.	Some Oak, Ash, Beech, &c.	No Improvements.	As last.
Upper Bell Wood.	Messrs. Read, Sager, and others.	Aylesford and Beasley.	100	Gravelly Loam.	Heavy, flinty, and poor Loam.	Very ordinary Oak, some Ash, Hazel, and Birch.	A most capital improvement for Poles, by Mr. Sager, with Ash; one acre of which Underwood is now of equal value to eight acres of the same age.	Produce a few Poles, Cord Wood, Basket, &c. the Plantation a great many Poles, and the above.
Bridge Wood.	Warden of the Bridge.	St. Margaret's.	1010	Gravelly and chalky Loam.	Gravelly Loam and Chalk.	Some Oak, Ash Poles, &c.	Beginning to improve by Ash and Chestnut Plant.	Poles, Cord Wood, &c.
Chatham Woods.	— Fount, Esq.	Chatham.	370	Gravelly Loam.	The same as above.	Oak, Ash, &c.	Old Improvements still continued.	The same as above.
Sharsted Wood.	Dona and Chaper of Rochester.	Sharsted and Gillingham.	300	Gravelly Loam.	Dona.	Ash, Oak, and Birch.	No Improvements.	The same.
Raiden Park.	Earl of Aylesford.	Raiden and Newington.	470	Dona.	Gravelly Loam and Heavy Loam.	As above.	No Improvements.	The same.
Pendenden Heath Wood.	— Bell, Esq. of Beasley.	Beasley.	70	Sandy Gravel.	Gravelly and sandy Loam.	Good Hop Poles from the few old bushes.	Capital improvement of Chestnuts in poor land.	Abundance of Poles, Sashes, &c.
King's Wood.	Mrs. Bourne, Sir John Paines, and others.	Langley, Leach, Sutton, &c.	1350	Some flinty, and gravelly Loam.	Strong Loam with fine Ragflax.	Large Quantities of Oak, some Hazel, Birch, &c.	No Improvements.	Many Orders Tillery, small Timber, Poles, &c.
Moor Woods.	Lord Romney.	Maidstone.	150	Some flinty, and gravelly Loam.	Gravelly Loam and some Stone.	Oak, Birch, Alder, Hazel, and some Ash.	Improved by planting many Ash, Chestnut, and Willow, but to be the most Ancient of all the neighbouring Improvements.	Some very good Fencing Poles, Hop Poles, Cord Wood, &c.
Crookham Woods.	Mr. John Miller.	Yalden and Hazton.	50	Gravelly Loam.	Gravelly Loam and some Stone.	Oak of indifferent growth.	Some Chestnuts in a flourishing State.	Hop Poles, Fencing Poles, &c.
Barnes Woods.	Lord Romney, and Messrs. Amherst.	Barnes and Aylesford.	100	Sandy Loam.	Gravelly Loam.	A variety of Birch, Oak, Hornbeam, &c.	Much improved by planting Chestnut, &c.	Quantities of good Fencing Poles, Hop Poles, &c.
East Malling Woods.	C. Miller, Esq. and the Hon. Mr. Foley.	Tefen and East Malling.	400	Sandy Loam and Stone.	Gravelly Loam and Ragflax.	Oak, Birch, Birch, Hazel, Ash.	Improved as above.	Produce as above.
Pekham Wood.	Mrs. Bourne, Sir John Paines, and Lord Le Despencer.	Pekham and Moreworth.	500	Gravelly Loam and some flinty.	Deep Loam, heavy Clay, and Gravel.	As above.	As above, with some few Plants of Chestnut, by Lord Le Despencer, on very Gravelly Loam.	The same.
Otham Wood.	Lord Le Despencer, and Mr. Garry, Esq.	Pekham and Otham.	600	The same.	Gravelly Loam.	As above.	But very little improved.	Dona.
King's Wood, by Salford.	— Currier, Esq. and others.	Goudhurst, Crayke, and Tusham, &c.	1800	Gravelly Loam and sandy flinty.	Some strong Clay and Loam.	As above, but more inclined to Oak.	No Improvements.	Fencing Poles, Fire Wood, &c. as above.
Barham Down.	Wals.	Barham and Aylesford.	1000	Gravelly Loam Flinty.	Gravelly Clay, some Flints.	Scrubby Oak, Hazel, &c.	Waste Lands.	From November to March.

It is attended with some difficulty and hazard of success to cause young new planted trees to thrive well in old woods and wastes, the land which is the new ground being occupied by the roots of the neighbouring trees; grass and weeds likewise growing near them, added to their being much excluded from the free air by the neighbouring wood growing round and above them, the new plants often fall the first or second summer; and several of them that continue alive till the following fall of the wood, and then cut down with it, are, from their weakly state, frequently overpowered by the more rapid growth of the established trees, so that they are soon no more. On the average of all that have been planted in these situations, hardly a third is to be found according to advantage, and sometimes not a tenth. Several

extensive experiments are now performing; and, as far as they are carried, promise more success than have been hitherto done through these late dry seasons, in the worst grassy lands. Digging large holes for the plants, and keeping them close, chiefly round them, with some new raised hedges for the purpose, form a considerable part of the Plan; and although these are directed, where planting has been followed, are more than double the value of those sown, which have been neglected; yet, it is considered by the most skillful and experienced, that this practice is still but little understood. A Note p. 35. London.



General Observations on the preceding Table.

The oaks are all cut in the flaying season, for the bark of all sizes. The fencing-poles are either used whole, or cut into gates for sheep. The hop-poles are sorted into three, four, or five sorts, and sold by the hundred. The faggots, or bavins, are made into lengths of five feet; the best for bakers and house-keepers; and on the hills they make inferior sorts, called kilnbrush, which are used for burning lime. Stakes and ethers are cut out before the faggots are made. In the neighbourhood of Chatham they cut some small bundles of brush and cord-wood, for the use of shipping and the metropolis. The woodlands of the Weald are tithe free.

CHAPTER XI.

WASTES.

THE waste lands, the neglected woods, and the impoverished commons, are striking evidences of the necessity and importance of enquiries like the present; and the legislature will have abundant merit in suggesting to the proprietors of these estates a plan of improvement,

ment, from which individuals and the community will derive the greatest advantages.

In the county there are the following commons, viz.

Blean Common,	Charing Heath,
Swingfield Minis,	Lenham Heath,
Stelling Minis,	Pinnenden Heath,
Rodes Minis,	Cox Heath,
Ewel Minis,	Langley Heath,
Stouting Common,	Barming Heath,
Challock Lees,	East Malling Heath,
Baddlesmere Lees,	Seal Chart,
Chart Leacon,	Ightham Heath,
Hotfield Heath,	Wrotham Heath,
Hays Common,	Dartford Heath,
Bromley Common,	Dartford Brimps,
Boxley Heath,	Black Heath, &c. &c.

The whole extent of these commons, I apprehend, does not comprehend more than 20,000 acres. The soil of a few of them consists of a poor cold loam; of others, of a wet stiff clay; but the principal part abounds in gravel and sand. They are in general covered with furze and fern, interspersed with patches of grass; and feed some lean cattle and poor half starved sheep. If they were in a state of severalty, under proper systems of management, they might undoubtedly be made of great value. Inclosures would do much; industry and due attention to the natural produce, and what has been cultivated on similar soils in other places, would do more. Nature is a wise counsellor, and those who follow her advice can, with the aid of art and observation, do wonders in agriculture.

I shall here take the liberty of suggesting to the Honourable Board of Agriculture, the propriety of recommending to the legislature a plan for a general act of inclosure

closure, founded on the principle of Mr. Gilbert's act for incorporating parishes for the support of the poor, so far as that act relates to the calling a meeting, and determining by a majority of two-thirds in number and value of the occupiers, whether their common shall be divided; and, if determined in the affirmative, then to proceed by appointing commissioners, and expediting the business, as in cases where separate acts of parliament have been obtained.

CHAPTER XII.

IMPROVEMENTS.

SECT. I. — *Draining.*

THIS is a subject of infinite importance to the prosperity of this kingdom. Bogs exist in most of the counties, more or less, and in some to a wonderful extent; the whole of which is convertible to the very best land, by proper management.

In Kent we have a great many small patches of boggy and spongy lands, formed by means which will hereafter be mentioned. We have also several extensive parcels of marsh-lands, which in the winter months are frequently rendered totally useless, and of much less value in summer. The quantity of these two kinds of wet lands

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amounts to some thousand acres, the whole of which, at a very small expence, might be improved, in its annual value, at least 1*l.* per acre.

Besides these, there is much land of considerable value that might be greatly improved, by a proper attention to the general principles of drainage.

The different kinds of drainage may be arranged under the following heads, viz.

1. Upland Drainage,
2. Flood Drainage, and
3. Bog Drainage.

Upland Drainage is effected in two ways; either by surface drains, or by hollow drains. The first is done by laying the land in ridges, and leading the water, by means of furrows, into narrow channels made with the spade, and thence by a general conductor to the streams. This kind of drainage is practised only on soils having a clay surface, or any other substance impenetrable by water; and the method used in Kent is to lay the land in flat ridges, either a half or a whole rod in width; if the land is very wet, narrow ridges are made; and if but moderately so, wider ones. When the land is ploughed, the furrows between the ridges are opened with a plough, having a mould-board on each side, by which a drain for the water is made; and at the lower parts of the field a channel is dug out about the breadth of the spade, to receive the water from the furrows, and convey it away as before mentioned. This mode of draining arable clay-soils on hills receiving no water but what falls from the clouds, is found to be effectual; and the flat ridges made with the turn-wrest plough are very far superior to the high round ridges of other counties made by the ploughs with fixed mould-boards; for the flat ridges have the very great advantage of receiving and retaining the small showers equally

equally over the surface of the ridge in summer, when every drop of water is of the utmost consequence to vegetation; while the high round ridges cast off little sudden showers, and the crops growing thereon in dry seasons, are in a starving state for the want of a sufficient degree of moisture. Great objections are made by some to flat ridges, alledging that the surface is more likely to be incrustated and baked together, by the water standing thereon after heavy showers; but even if it should be so, the evil is easily remedied by taking the first opportunity of a dry season in the spring to harrow the surface of a wheat-crop; or, to prevent the mischief, by drilling all crops and hoeing the intervals by hand if labourers are to be had; and, if not, by scuffling the surface with horse-hoes. At any rate, the evil of an incrustated or bound surface, which may be so easily remedied, is not to be put in competition with the advantages resulting from having a level surface to retain the small showers that fall in a dry summer.

The second mode of draining upland is by hollow drainage; which is practised on all land having a porous soil on the surface, and a retentive clay-soil a little below it, which keeps the surface wet till the water is taken away by some artificial means. The method is to cut angular channels at such places, and at such distances from each other, as the nature of the soil seems to require; which must be determined by experienced men from local circumstances; such as, whether the retentive bed of clay be a greater or less depth from the surface; and whether the field to be drained has a greater or less fall for the ready passage of the water. The method of preserving the channels open and free, is various. Some lay flints or stones at the bottom, others green bush-wood; and some make the trench with shoulders towards

the bottom, and lay thereon a tuft of grafs, with the grafs-side downwards, thereby leaving an entire cavity for the passage of the water. In either case, the trench is filled up and levelled with the mould that was dug out of it. These under-ground drains, when they are well executed and made of a sufficient depth, out of the reach of moles and pressure of cattle or carriages, will last from ten to twenty years, and upwards; and land may be drained in this mode at an expence of from 15s. to 30s. per acre, in proportion to the number of channels required. But it should be observed here, that many attempts at hollow draining have been made on boggy and spongy soils without success, owing to a want of the knowledge of the original cause of the mischief; which will be explained when the drainage of that sort of land is mentioned.

II. Flood Drainage. This kind of drainage is very little attended to in some parts of this county; for want of it, many extensive tracts of marsh-land are very much injured; and a benefit, which otherwise would accrue by a great increase of property in mutton, wool, and beef, is thereby lost to individuals and the public.

The mischief of floods is obvious; and, fortunately, so is the remedy, when their causes are known. These are, first, rain falling on retentive lands, whose surface is below the level of the river where embankments are wanting, or are defective. The nuisance in such cases can only be removed by evaporation or machinery*; but it may

* A machine of this kind has been lately erected by Mr. Hooper, of Cottingham, near Deal, which promises to be of the greatest utility, as its cost is very little, and construction simple; it is not likely to get out of repair; and requires little or no attendance, it having a vane which keeps it always facing the wind.

may be greatly lessened by embankments. Under these circumstances, suitable embankments along the river answer a general good purpose; they keep the downfal-water in its proper channel, and the accumulated stream enlarges the bed and improves its outlet.

Secondly, A descent of water from the adjoining hills; the whole of which may be conveyed to the river by embanked channels, in such directions as nature points out.

III. Bog Drainage. All boggy soils consist of a mass of vegetable matter, arising from the surface of the land having been overflowed for ages with water, thereby producing a number of aquatic plants, whose roots form a thick matted turf that contain water, in the nature of a sponge. As these aquatic plants continue their growth upwards, their roots become matted together under the surface, and thereby form the spongy surface of the bog; hence, all bogs are in a perpetual state of increasing depth, so long as they are fed with the necessary supply of water to keep up the vegetation of the aquatic plants.

Dimensions of the Mill and Pump.

Four sweeps, the drivers of each seven feet long, and breadth sixteen inches. The leaders of each are the same length, and nine inches in breadth; these are so fixed, with springs behind them, as to check the velocity in strong gales of wind.

The mill works a square pump fifteen and a half inches by seven in the clear. It is calculated, in moderate gales, to make a stroke in one second of time, by which it delivers two gallons of water, making a discharge in twenty-four hours of 1600 butts, of 108 gallons each. It is planned with a lever, in case of necessity, to work another pump of the same size; which in strong winds would of course discharge double the above quantity. The price, including fixing, is 3*l.* 10*s.*

The use of this mill is to throw out the water from about 100 acres of grass-land, that have heretofore been always under water in a rainy season; occasioned not by the downfal of rain, nor by springs rising out of the land, but by springs issuing from the foot of the adjoining hills, and floods from the higher grounds spreading over the level below, faster than the sewers could take them away. The sewer which did run across this land is now turned round the outside of it, and the land to be drained by this mill is embanked against the floods, so that there will be no water to raise from it, but what falls from the clouds.

Let the supply of water be cut off, and the aquatic plants soon die; by which the bog is no longer a mass of vegetable matter, but becomes a body of firm rich mould, in the nature of a rotten dunghill. This sort of land, therefore, when once it is properly drained, becomes the richest and most valuable: hence it is obvious, that all boggy lands may be increased in their annual value, at least 20s. per acre, and probably to twice that amount.

The springs that occasion the bogs, issue from the foot of the adjacent hills; and the method of draining, or more properly destroying, the bogs, as discovered by the ingenious Mr. Elkington, is so simple, easy, and certain in its effects, that it needs only to be made public, to be generally adopted, and it will then produce the most beneficial effects to the community. For, besides the great increase of national wealth, by the destruction of all the bogs in the kingdom, amounting in value to many hundred thousand pounds a year, the improvement of the health of the neighbouring inhabitants is of the utmost importance; not to mention the increase of population, by the improvement and culture of these now barren and almost waste districts.

It may be presumptuous in me to enter at large into this subject, after the excellent report which has been made on Mr. Elkington's mode of draining, by the worthy president of the Board of Agriculture; but as this Survey when published by the Honourable Board, may fall into the hands of many who may not have an opportunity of seeing the other, I shall just mention such ideas as have occurred to me on this subject, together with the outlines of Mr. Elkington's plan.

Water falling from the clouds, in rain or in dews, on the surface of the earth, descends in perpendicular directions through all porous soils, such as chalk, stone, gravel,

gravel, sand, &c. until it meets with a bed of close tenacious earth; of which clay is the principal and most retentive: the water being there stopped in its descent, bursts out over the edges of the bed of clay, in the nature of a spring; from thence it flows down the sides of the hill, and produces a bog. The hills containing sand, rock, and gravel, in this county, and I suppose in most others, have beds of clay at their base, lying considerably above the level of the bottom of the vales which intersect the hills. The method practised so successfully by Mr. Elington, is to cut off these springs from their source by deep channels, in lines nearly in the direction of the valleys, thence conveying the water down to the rivers or sewers below.

When the direction for a drain is marked out, it is necessary to begin at the bottom next the river, carrying the trench gradually up to the spring-head, under the guidance of a spirit level: a fall of an inch in four or five rods, is sufficient to carry off the water. As the workmen proceed in making the trenches for the drains, holes are made in them with a boring auger, in order to tap the springs, and let out as much water as possible. If, from the situation of the land and soil, it is necessary to make very deep channels, then drains of stone or brick are laid, and the drain is covered in with the earth that is dug out; but otherwise, open trenches will answer every purpose.

The mouth of the drain should be laid on a little green brush-wood, to prevent its sinking into the earth. If any trees are found near the direction of the drain, they should be dug up, as otherwise their roots are liable to get into the drain; where they grow with such rapidity as to burst or choke it in a few years. If a small quantity of water only is expected to come down the drain, a breadth of four or five inches is sufficient; but if a quantity is

found issuing from several springs, or comes from a considerable distance, by which an accumulation of water follows, then the drain should be about six or seven inches wide. If made with bricks, and the soil on which they are laid is a soft quicksand, they should be laid flat; but if clay or firm earth, laying them on their edges will do; the depth of the drain should be greater at the lower end than at the upper; namely, three bricks at the lower end, two in the middle, and one at the upper part.

H. Darrel, Esq. of Cale-Hill (very much to his honour) is the first who has undertaken bog-drainage in this county, under the direction of Mr. Elkington. He commenced his operations in the spring of 1795, and has, in the course of about eight months, very effectually drained about seventy acres, which were worth about 7*s.* or 8*s.* per acre, and now will very shortly be to him invaluable, on account of their situation, close to his mansion; but, independent of that circumstance, this land will be increased in its annual value full 20*s.* per acre: by which, he has the acquisition of an estate of 70*l.* per annum for an expence not yet ascertained; but which will hardly exceed 200*l.* or 300*l.* Cattle have sometimes been laid up on these bogs, so that they have been obliged to be drawn out by ropes from places which, in one year or less, from the time of the drains being cut, are become firm enough to bear the tread of horses.

SECT. II. — *Paring and Burning.*

OF all the improvements in the cultivation of land that have been hitherto made in Kent, this stands foremost; some of the very worst land having been made to produce excellent crops; and poor chalky downs, of scarcely any value in their original state, are by paring and burning made to produce good turnips and clover,
and

and crops of corn, often equal in value to double the fee-simple of the land. Instead of the land being injured by the operation, as some theorists imagine, provided it be under a proper system of management and fairly dealt by, it is put into a progressive state of improvement, from the time of its surface being burnt. It has frequently happened, that land, after burning, has been sown with corn four or five years in succession, without being folded with sheep, or any part of its produce ever returned in manure; even charlock and other weeds have been suffered to remain, by which it has been annually burthened with a double crop: hence it has been left in an impoverished state, and the burning is unjustly condemned for the mischief done by the negligence and rapacity of the cultivator.

Let the land, when burnt, be perfectly cleaned from charlock and other weeds, by growing turnips until the weeds are totally eradicated by hoeing, &c.; let the turnips be fed off the land, by sheep lying on the land day and night; then sow it with barley and clover; the latter to be fed off with sheep, folding them on the land for wheat. Lastly, return the straw produced upon the land in manure mixed with clay or loam, or any other fresh earth that is near at hand, for a second Norfolk rotation, which may be repeated; or the land may be sown with sainfoin, to remain till a turf is formed fit for paring and burning again. This plan being pursued, the practice of burning the soil will not give any cause of complaint, either to landlord or tenant. Theorists exclaim, that by paring and burning, the staple of the land is reduced, and the soil is wasted; which may be somewhat true: but all this is very immaterial, if fine crops of corn can be produced where none ever grew before, and the land at the same time be improved.

The

The method of paring most in use, is with downshare or breast-ploughs, taking off a turf as thick as the nature of the soil will admit, from half an inch to two inches; the thicker the better, provided there be a sufficient portion of vegetable matter contained within it, to make it burn well; the expence for paring it a moderate thickness, where the land is not very flinty, is 20s. per acre; for laying it up in heaps and burning, 10s.; and for spreading the ashes, 3s. A coat of manure is thus produced on the land, of from eighty to one hundred-and-sixty cart-loads per acre, for the trifling expence of 33s. A hundred cart-loads of dung, purchased from neighbouring towns and villages, at the distance of three miles from the land, would cost, carriage home included, ten times the price of downsharing, and yet would not improve the land more.

Where the land is well covered with turf, it may be ploughed for burning, about two inches deep, with a common plough, drawn by a pair of horses, early in the spring; and as soon as a drying wind sets in, the turf may be laid in heaps, and burnt by labourers for 1l. 1s. per acre; which will produce near two hundred cart-loads.

All waste banks inaccessible to the plough, and slips along road-sides, are dug with a spade, and burnt to ashes for 6d. a cart-load, of about thirty bushels.

These ashes, carried out on fallows in June, at the rate of twenty cart-loads per acre, afford a most excellent dressing for a crop of turnips.

SECT. III. — *Manuring.*

THE sorts of manure commonly in use in this county, are dung, sheep-folding, chalk, turf-ashes, foot, coal-ashes,

ashes, sea-weed, woollen-rags, and lime; with a variety of other manures, too numerous and trifling to be particularized in a general report.

Dung of horses, cattle, and hogs, is mixed together in large heaps, and laid in the fields intended to be manured, usually on a layer of fresh earth, a foot or two in depth, dug out of hedge-rows, waste banks, or useless spots of land. When the heap of dung is made up, some persons give it a covering of mould; and it is an excellent practice to keep it moist, and prevent evaporation. After it has lain a month or two to ferment, it is trenched over at the expence of 3*s.* 6*d.* per hundred cart-loads; and then, after lying a few weeks longer, it is fit for use. This manure is laid on the land at the rate of from forty to sixty cart-loads of twenty bushels each per acre. The expence of carrying out the heap, when conveniently situated, is about 15*s.* per hundred cart-loads, and for spreading, 3*s.* 6*d.*

The principal part of this sort of manure is carried out for wheat or beans. Some farmers dung for barley, and others for turnips.

Manuring with the sheep-fold is practised on fallow-lands in the spring months, after barley sowing, for turnips; then on fallows or clover-lays, for wheat; and when that season is over, the fold is removed to either wheat stubbles or turnips, in order to fold the land for the succeeding crop of barley or oats.

Two hundred sheep will fold about an acre in a week; the value of which is from 20*s.* to 30*s.* in proportion to the time of the year; the last folding in the autumn, next to the ploughing for wheat, being the most valuable.

Chalk is used to great advantage as a manure on some wet, stiff soils, having no calcareous earth; in quantity, from fifty to eighty cart-loads per acre. Its beneficial effects

effects are said to last twenty years, and the value of it is often estimated between outgoing and incoming tenants, when lately laid on, as high as 5*l.* per acre.

There are many soils, however (indeed throughout the greatest part of this county, where chalk is in plenty) which derive no benefit from it. Some farmers, from observing the beneficial effects of chalk as a manure at other places, have been tempted to use it on their lands; where it has proved to be of no kind of use; and much time and expence have been entirely thrown away.

The best method of using it, is to spread it early in the autumn, in order that it may be thoroughly drenched with rain, that the frost may have its full operation upon it; by which means it is well pulverized when the thaw comes on, and will mix the more readily with the soil.

Old grafs-lands on wet sandy or clay soil, over-run with furze or rushes, are greatly improved by chalk.

Turf-ashes, if spread on poor chalky thin lands for turnips, at the rate of about twenty cart-loads of thirty bushels each per acre, will seldom fail to produce a good crop: and it is well known, that if once a good crop of turnips can be obtained on such poor lands, a good foundation is laid for future improvements.

Turf-ashes are often used for wheat, and sometimes for other crops; but there is no application of them so advantageous as that of using them for turnips.

Soot is a valuable manure for a top-dressing on sainfoin, clover, lucern, and meadows: it is usually purchased at the neighbouring towns for 6*d.* per bushel, and sown on the land at the rate of forty or fifty bushels per acre, early in the spring.

Coal-ashes are a good manure for the same purpose; but not so much used, on account of their consumption in the manufacture of bricks: the price at the towns is about

about 2*d.* per bushel: they are sown on the land in the spring, at the rate of four or five chaldrons per acre. Cold, wet, clay meadows are much improved by them.

Sea Weed. This is a most excellent manure, being a mass of vegetable matter, strongly impregnated with salt. Immense quantities are sometimes thrown by the winds and tides on the shores of Thanet; from whence it is carted through sloping passages in the cliff to the land.

When a quantity comes ashore, after a gale of wind, the farmers set all hands to work, to get as much as possible while the tide serves, lest the next should carry it away; and if it happens in the night, they work at it then till stopped by the waters coming on. Some farmers will get up in one tide two or three hundred cart-loads. Those who live at a distance, hire small spots of land, of a few perches, to lay the fresh weed upon as they get it; and carry it away to the farm at a more convenient opportunity. It sometimes comes ashore in quantities that amount to several thousand cart-loads; and perhaps all swept away by the next tide. The principal method of using it, is by mixing it in layers among the farm-yard dung in the mix-hills. It is of great use in helping to rot the dry part of dung carried out of the farm-yard in summer.

Woollen Rags. The chief use of these as manure, is to lay them round the hills of hops, &c.: the method is to open the hill, and place the rags, ready cut into small pieces, two or three inches square, close round the roots, a little below the surface of the land, and immediately cover them up with mould. A ton of rags per acre is the usual quantity, which is about two pounds and a quarter to every hill of hops: they cost from 4*l.* to 6*l.* per ton. For dry gravelly soils, this is a good manure, as
the

the rags operate in the nature of a sponge, to retain the moisture in a dry season, and thereby support vegetation; but, on the contrary, in a rainy summer it is supposed they do great injury, by producing the mould.

Lime. The tenants of the Weald of Kent are bound by the covenants of their leases, to lay on their fallows a hundred bushels of lime per acre; and they generally lay on double that quantity. This lime is made of chalk, from the hill which runs through the county from Folkestone to Maidstone, &c.; and is brought from the distance of twenty miles to some of the parishes, though there is excellent limestone in the centre of the Weald; and even in the parish of Bethereden, famous for a fine limestone, called Bethereden Marble, chalk-lime is preferred; and the chalk to make it is procured at a considerable distance.

The lime is dispersed in heaps, of a load or two at a place, during the summer, and spread with a shovel out of a cart before the last ploughing for wheat; which is generally sown in the month of October. Lime is very little used in any other part of this county: it has been tried on various soils in East Kent, such as chalk, clay, loam, and hazel-mould, without any apparent good effect.

Sand has been spread, at the rate of a cart-load a perch, upon stiff cledge soils, without being of any use; and tanners bark, at the rate of fifty cart-loads per acre, has been spread on chalk soils, and ploughed in for turnips, succeeded by barley: both crops very inferior where the bark was laid on, to that of some adjoining land manured with turf-ashes.

Kelp, ground to powder, has been sown at the rate of twenty cwt. per acre on pasture, sainfoin, and clover, without any sensible effect. There can be no doubt, but

but that many valuable discoveries may be made, as to the use and effect of other substances as manures, through the aid of chymistry: but theorists in that science are too apt to recommend compositions which, when put to the trial, prove useless. Writers, therefore, on this subject, should be cautious how they recommend expensive manures, without proof of their utility.

S E C T. IV. — *Weeding.*

THIS county has long been noted for its clean crops of corn: and a slovenly farmer is an object of reproach to all his neighbours. The husbandry of East Kent and the middle of the county, about Maidstone, is extremely neat. There are three different modes of weeding the corn used here (viz.) horse-hoeing, hand-hoeing, and hand-weeding. The bean and pea-crop is invariably horse-hoed two or three times; the first, as soon as the rows appear; they are then hoed by the hand along the sides of the furrows, with a plate about five inches wide; as soon as that is done, they are horse-hoed a second time; and if a second hand-hoeing is thought necessary, it is repeated; and then the beans are horse-hoed a third time with an earthing plate, to raise the mould against their stems.

Pease are seldom horse-hoed more than twice; both crops are usually looked over by women and children, who pick out by hand such weeds as the hoes have left. Many other crops of corn in rows or drills, such as canary, barley, wheat, and oats, are both horse and hand-hoed; and all crops in most kinds of land in the eastern part of the county, but more particularly in the best lands, are weeded in this manner: A gang of from ten to twenty, chiefly boys and girls, walk through the
corn

corn in June, and the beginning of July, attended by a careful man to look after them; and with angular weed-hooks cut up thistles and other weeds; at the same time, pulling up by the roots such weeds as will easily draw.

It is contrary to reason and nature, to expect that the earth can produce a full crop of corn, and a crop of weeds at the same time; and therefore, if the weeds are eradicated, most certainly a better crop of corn may be expected.

The poorest land which stands most in need of every assistance that art and industry can give it, is generally most neglected; crops of charlock in full bloom are seen on some chalky downs in the month of June, overtopping the puny half starved corn, dazzling the eyes of the beholder with its lustre, but blasting the hopes of the penurious cultivator. However, it is much to the credit of Kentish farmers, that there are not half the weeds to be seen now on the poor lands that there were twenty years ago. The good lands have always been kept very clean.

Thistles are often cut out of the corn with small spuds*, in the same manner, from grass-lands; but the best and most certain method of destroying thistles on grass-lands, is to let them alone till they are in full bloom, and then to mow them with a scythe; for if they are cut while young, they produce fresh shoots from the sides of each plant; but when mowed in full bloom, the stem is hollow; by which the rain-water and dews descend into the heart of the plant, and it soon dies.

S E C T. V. — *Watering.*

THE practice of irrigating meadows, is an improvement of infinite importance; by which, many poor

* Chisel-shaped.

grass-

grafs-lands are made to produce abundant crops, and good lands are made much more valuable; but I am sorry to say, the practice has yet very few friends in this county.

There are many rivers, rivulets, and rills flowing through various parts of Kent, offering their streams for the melioration of many thousand acres of grafs-lands; some of which are at present poor, and unproductive, and at too great a distance from manures, to receive any aid of that kind.

The waters being properly thrown over these lands, would render them capable of producing a much greater quantity of hay, and of maintaining an increased number of valuable animals; thereby greatly adding to the stock of manure for the improvement of other lands, and ultimately increasing the employment of labourers, and consequently adding to population.

Before any attempt is made to irrigate the land, it should be well drained; then, having the command of the water, good crops may be produced at pleasure.

Bogs, when drained, and the soil is become a firm compact body, will become by irrigation, the richest meadow, and be increased in their annual value from 1*l.* to 2*l.* per acre; and, as water is always at command on an old bog, the expence of laying it out for irrigation must of course be very trifling, in comparison with the magnitude of improvement.

There are two material objects obtained by this practice at one time; namely, manuring the land, and watering it.

It is a well known fact, although seemingly a paradox, that irrigating is most beneficial in the greatest floods of rain; because then the waters are most impregnated with rich particles of manure, washed down from the arable up-

L

lands;

lands; and when thrown over meadows, form a thick sediment, that operates as a rich and fertilizing manure.

It is to be observed, that although these lands are remarkably kindly for sheep, particularly ewes and lambs in the spring, they are certainly productive of the rot, if sheep are put upon them in the autumn.

A gentleman in East Kent, a few years ago, turned a little rill over a meadow, and made his grass grow very luxuriantly; and, not being acquainted with the business, frequently, in the autumn, turned a large flock of sheep into it; the whole of which he lost the following spring by the rot; and the land has never been irrigated since.

It must be obvious to every one, that to have the command of water, by which a dry soil can be saturated with moisture in a burning time, must be the means of promoting vegetation, when otherwise the grass would be dying away.

When farm-yards are situated on a declivity, the washings and overflowings of them are invariably turned into conductors, to lead them away to distant rivers. This is entirely throwing away a great treasure, which might be conveyed at pleasure to any adjoining field below the level of the farm-yard †.

† For further information on this subject, see Boswell's Irrigation, and Mr. Davis's excellent Account of Wiltshire.

CHAPTER XIII.

LIVE STOCK.

SECT. I.—*Cattle.*

THIS not being a dairy or grazing county for cattle, we have no particular breed that may be allowed the appellation of Kentish Cattle. The sort bought in by graziers to be fattened for sale in the marshes of East Kent, are from North and South Wales, which are brought by the Welch drovers to Canterbury and other markets; and the chief part of the dairy-cows are selected from those droves: others are a mixture of those and home-bred cattle, of various sorts and shapes. The principal object as to a cow here, is the giving a large quantity of milk. If a cow, though ever so ugly, is a good milker, and produces a cow calf, it is often reared for the dairy. There are no ox-teams used here; which is partly the occasion of there being but little attention paid to the size and shape of the cows.

It is somewhat extraordinary, and much to be regretted, that, in a county where agriculture is arrived at such great perfection, there should be so little attention paid to the breed of cattle.

In West Kent, the dairies are small, seldom exceeding six or eight cows, and those are home-bred, between those of Staffordshire, Wales, and Suffex. Some of the small dairies of three or four cows, have the Welch sort only.

In the Weald of Kent, the cattle are of the Suffex breed, both for the pail and plough.

Some farmers are more careful in the choice of bulls and breeding-cows than others; but there is not that attention paid to this department of farming business as in the midland counties. The finest bull of this district would hardly sell for twenty guineas, although he may be very handsome in every respect, and weigh, if killed, fifty or sixty score. These cattle are almost invariably of a deep red colour, and remarkable for a kindly soft skin. Their bone, in proportion to their great size, is small. The best of them have a great breadth of loin, and length of sirloin and rump, with a small head and neck; their horns are short, and stand upwards. They have a ready disposition to fatten; and seem to deserve the attention of the curious in cattle, as much as any sort in the kingdom. If the same care was taken here in breeding them, as is done in other counties, the breed might be greatly improved; and probably some of the best might be found equal in value to a Shakespear †, or a Brindle Beauty ‡.

Within these few years, some cows have been brought from the islands of Alderney and Guernsey, for the use of the dairies of gentlemens families. These are a very small ill-made kind of cattle; but they are remarkable for giving milk of a very rich quality, yielding a greater portion of cream, and making more butter from a given quantity of milk, than any other kind of cattle; the butter too is of a beautiful yellow colour, and is highly

† A bull-calf, so called, sold at public auction, at the sale of the late Mr. Fowler's live stock of Rollwright, near Chipping Norton, for 29*l.* 8*s.*

Since sold for four hundred guineas.

‡ A cow, thus named, sold at the same sale for 273*l.*

esteemed

esteemed for its fine flavour. Whether these kinds of cows will preserve their superiority in this respect many years, if bred and kept in this county, time only can discover; but it is most probable, that soil and climate will operate in the course of time, so that there will be no perceptible difference in the quality of the cream and butter between these and common English cows.

An experiment was tried here last summer between a large home-bred cow, of eight years old, and a small Alderney, two years old:

	gal.	lb. oz.	
The home-bred cow, } in 7 days, gave }	35,	which made 10 3	} Butter.
The Alderney cow, in } the same time, gave }	14 ———	6 8	

The cattle which are fed in Romney Marsh, are taken into keep chiefly from those farmers who keep lambs during the winter. Thus, by a temporary exchange of stock between the farmer and the grazier, each party is accommodated; for if the grazier could not put out his lambs in the winter, he must alter his present system of grazing; and the upland farmer would be very much distressed with his bullocks in the summer, when his pastures are reserved for hay, or fed with his dairy. The farmer keeps the lambs about thirty weeks from the beginning of September; and the grazier keeps the bullocks about twenty weeks from the middle of May.

Some graziers buy Welch calves in the autumn, put them out to keep in farm-yards for the winter, and in the spring place them among their sheep, where they get fat in a few months, and weigh from eighteen to twenty-two score each.

A very few oxen are fattened, which are bought in from the plough-teams of the wealds of Kent and Sussex:

they are very large, and have a reserve of the best grass to themselves. From their size, they require a longer time to get fat than the smaller sorts: they usually weigh from forty-five to seventy score each.

Before concluding this section, it may be proper to observe, that farmers at different parts of this county have been, and still are, in the habit of fattening oxen, and other cattle, in stalls, on potatoes and hay, or straw; others on turnips and cabbages, and hay or straw; and likewise on oil-cake and hay. By these means the cattle are frequently made very fat: but it is generally observed by the most experienced men, that this system is not profitable, the chief advantage being that of raising a supply of good manure for the arable lands: a consideration, which by some is not thought to be of sufficient importance to pay for the risk and trouble of attending stall-fed oxen.

S E C T. II. — *Sheep.*

KENT has long been famous for a fine breed of sheep, called in the county, Romney Marsh Sheep; but in Smithfield, where great numbers are sold every week, Kent Sheep. They are remarkable for arriving at an extraordinary degree of fatness at an early age, and for producing a large fleece of very long fine wool. These circumstances combined, render this perhaps the most valuable of any breed in the kingdom, not excepting the famous Dishley sort, whose wool, confessedly, is very coarse.

Their carcases and legs are rather long, and bones large, in comparison with some other breeds; they have no horns; and their faces and legs are white.

The fat wethers at two years old, weigh from twenty-two to twenty-eight pounds per quarter.

Their

Their wool is the combing sort of the first quality, being very long and fine; the fleeces of the young sheep are about five pounds weight, those of the ewes six, and the fattening wethers eight or nine pounds each. This Marsh is supposed to produce twenty pounds of wool per acre, which, for 44000 acres within the county, is 880,000 pounds of wool, or 3666 packs per annum. But as the greater part of the land has above four sheep per acre at shearing-time, and as the average weight of the fleeces is certainly above five pounds, the annual growth of this Marsh, in the county of Kent, is probably full four thousand packs.

This is the principal sort of sheep kept in this county. There are, however, many of the upland farmers who keep those of Wiltshire, Dorsetshire, and the South Downs. As these will, no doubt, be properly described in their respective County Reports, I shall forbear to mention them here.

The management of sheep in the different parts of Kent, is as follows:

In the eastern part, the flock-farmers buy in lambs at Romney Fair, the twentieth of August, at from 12s. to 14s. each, and when they have kept them two years, they either sell them lean to the fatting-grazier, or make them fat themselves on turnips, and pea or bean-straw. Sainfoin and clover hay are generally too valuable at the watering places to be used for that purpose. Oats, and cullings of garden-beans, are sometimes given to finish them in the spring. When these two yearling sheep are sold in the autumn to the graziers, the price is from 24s. to 28s. each; and when made fat, produce from 34s. to 42s. according to their size and fatness †.

† Since returning the original report to the Board, prices have very considerably advanced.

The few sheep bred in these marshes are of the same sort, except some small parcels of Dorsetshire and South Down ewes, which are bought to make early fat lambs; and the ewes are made fat in the autumn.

Almost the whole of the sheep kept on the upland farms of East Kent, are the true Romney Marsh breed; whose carcases and bones being large, and wool long and heavy, they require rich land and good keep to make them fat. It seems quite contrary to reason and nature that they should be equally adapted to rich marsh-land and poor chalky downs; and consequently they are not so fit for this district, at least the chalky part of it, as the South Down sort, whose natural soil is a fine turf on chalk-hills. Impressed with this sentiment, the surveyor himself has, for these seven years past, kept no other than South Down sheep, and has every reason to be satisfied with them; his flock is about 1000; — 400 of which are breeding ewes.

The sheep in the Isle of Shepey are of the Romney Marsh sort, true Kents. The soil being much inferior to Romney Marsh, the sheep are somewhat smaller; and, from the same cause, their wool is lighter and finer. Some graziers get rams from Romney Marsh; others prefer their own sort, and but very few, if any, pay that attention which it is their interest to do, to the wool of the rams they use. The wethers are fattened at three years old, then weighing from twenty to twenty-four pounds per quarter.

In West Kent, a flock of sheep under a shepherd, and folded at night, is a very rare sight; it is only a very few of the largest farmers who follow that practice.*

The

It is only a few years since the practice of folding at all in Middle Kent has prevailed (except on very large farms); perhaps the smallness of them in general may have been, in some respects, the cause of it. The practice

The sheep mostly kept in this district are the South Down sort, bought in wether-lambs, at the autumnal fairs on the Downs, chiefly at Lewes, the second of October. They are kept the first winter on stubble-land, with grass and a few turnips, and on grass and seeds in summer; and frequently are fatted on turnips the next winter, before they are quite two years old: this is become the favourite sort within these few years, and increases annually in this district.

The other sorts of sheep kept here, are the West Country, from Wiltshire and Dorsetshire; the wethers are brought in at all ages, to be fattened on turnips.

There are hardly any sheep bred in the Weald of Kent, excepting a few for early fat lambs, of the Wiltshire and South-Down sorts.

Some of the Wiltshire wethers are bought in to fatten on turnips; and a few South Down wether-lambs are bought in the autumn, and kept on the driest parts until they are two years old, and then made fat for sale on turnips or meadow-lands.

It has been mentioned that the grand system of management in Romney Marsh, is that of breeding, rearing, and fattening sheep; and it remains only to describe the mode.

The rams are usually put to the ewes, allowing one to forty or fifty, and sometimes sixty, from the twelfth to the sixteenth of November, and stay with them about five weeks. The ewes live entirely on the grass, without any hay, during the winter: in deep snow they scrape with their feet, and obtain a subsistence, although they then lose flesh, and sometimes become very poor by their

practice of it is now gaining ground, even on the smaller farms, as the advantages attending it are too obvious to escape common observation.

A note by a Middle Kent Farmer.

yeaning

yeaning time. This Marsh produces many twins; but a great number are lost, so that most graziers consider their crop not a bad one, if they wean as many lambs as they put ewes to ram.

The lambs are weaned the first or second week in August, and very soon after put out to keep to the upland farmers of the county, where they remain till the fifth of April, at from 2s. to 3s. per score, per week. When they return to the Marsh, they are put on the poorest land, or such fields as the grazier thinks want improvement by hard stocking; which is here called tugging a field, and is held to be of great service. These young sheep are placed in the fields in proportion to what it is judged each will maintain, from the fifth of April until August, which is at the rate of from four to eight per acre.

The wether-tegs in the autumn are removed to the fattening, and the ewe-tegs to the breeding grounds, among the two and three yearling ewes. The wethers remain till July or August following, when, as they become fat, they are drawn out and sold to the butchers at the Marsh markets, or are sent to Smithfield. The two yearling wethers, when fat, at this season weigh from twenty to twenty-eight pounds per quarter; and some of the largest and best fed, a few pounds more. The old ewes, here called Barrens, are put to fattening as soon as their milk is dried after the third lamb, which is at the age of four years, on some of the best land; where they are placed from two to three per acre for the winter. These, in favourable winters, are sometimes made fat and sold in the spring, soon enough for the same field to take in a fresh set of wethers, and make them fat by the autumn; but this can only be done by light stocking.

The

The practice of fattening sheep on turnips, assisted by oil-cake, corn, hay, sainfoin, &c. is greatly in use among the upland farmers of this county; not so much for the profit by feeding with those articles, as for the great improvement of the soil where the turnips are fed off. The manure from sheep fed on oil-cake and turnips, is reckoned very enriching to the land.

A great number of fold-flocks of lean sheep are kept by the farmers of the eastern part of this county, of from eight to twenty score in number. These are each attended by a shepherd, who removes the fold every morning to fresh ground, at six o'clock in summer, and at break of day in winter; the flock is then driven away to the most inferior keep at the first part of the morning, and is returned into the fold for two or three hours in the middle of the day, while the shepherd goes to dinner; in the afternoon it is gradually led to the best keep on the farm, that the sheep may return full fed to the fold in the evening.

Great caution is necessary in feeding sheep on clover in summer, and on turnips in the first part of the winter, as otherwise they will die in great numbers, by being, what is provincially termed *blown*; which is occasioned by taking the clover and the young turnip-tops into the stomach too hastily when the sheep are hungry, so that there is not sufficient time for digestion; by which the air is generated to such a degree in the stomach, that great swelling ensues, and the animal soon dies.

Attentive shepherds will, in the first instance, take care to feed their flocks so as to prevent this disease, by keeping them from such strong food while they are hungry. As yet, we seem not to have any effectual remedy for this disease; but the South Down farmers say that half a pint of linseed oil, given to a sheep when first *blown*, is a certain cure.

S E C T. III. — *Horses, and their Use in Husbandry,*
compared with Live Oxen.

THERE are many very fine teams, each consisting of four horses, in the hands of the farmers of the Isle of Thanet and East Kent, some of which were bred here from a sort that has been long established; and others are a cross, between the old Kentish cart-mares and stallions from the midland counties, or half-bred Flemish; and within these few years, there have been several very good mares brought from Flanders, which have cost from 26*l.* 5*s.* to 42*l.* each. Black is the favourite colour; and there are but few of any other; they are from fifteen to sixteen hands and an half high, with much bone, and good action. They plough with four in winter, and work an acre and an half in a day; and in barley-season with two, and then plough two acres a day, with a *mate* to lead the horses.

Many farmers have great pride in their fine teams; which are often too fat to do the quantity of work in a day they ought.

In the Isle of Shepey, the horses for the plough are bred principally from a sort that has been in the isle time out of mind. The mares are covered by stallions that come over from other parts of the county in the season; they are somewhat of a size smaller than those of other parts of Kent, where the land ploughs much lighter. Whether smaller horses are found to answer best here, it is not easy to determine; but it is natural to suppose, that such very stiff heavy land must require strong horses; it seems, therefore, that the breed of them here is become small from neglect; and it would perhaps be better if more attention was paid to the breeding and rearing the colts in these parts.

In

In West Kent there are many fine teams of cart-horses, but very few are bred there; the farmers buy them of dealers, who bring them at the age of three, four, and five years, from the midland counties.

The Weald is the only part of the county where oxen are generally used for draught. Here it is common to see horses and oxen together, both in the plough and on the roads; eight or ten oxen, with a horse or two before, to lead them along: frequently ten oxen, without any horse, are seen drawing a plough; which would be much more expeditiously done by four horses. An acre a day is the common yoke for eight or ten oxen in wet, heavy, land, where four horses would plough an acre and a quarter. On farms having a greater portion of rich meadow than arable, it perhaps may be proper to employ oxen as beasts of draught, because they are in a growing state, and increasing in their value to fatten; and because they are fed at a small expence on good pasture-land; but on farms not having a greater portion of pasture than arable, and that pasture not being rich good land, the expence of supporting the requisite number of oxen, exceeds the expence of supporting the requisite number of horses. There is besides, another disadvantage attending the use of oxen: the slowness of their pace is apt to lead the ploughmen into slothful habits, which are seldom got rid of. By some it is contended, that oxen are so valuable to fatten when they have worked for five or six years, that, on that account only, they ought to be more used as beasts of draught; but it should be recollected, that horses, when they have worked the same time, are more valuable than oxen, because they will then sell for more money, and will work eight or ten years longer; during which time, they will

will earn by their labour, perhaps double the value of a lean ox at nine years of age ; and therefore the value of an ox, after working five or six years, is not a sufficient argument to recommend them for general use.

When horses have laboured a great many years, as a great many do, they owe their masters and the public nothing ; and therefore they ought not to be condemned as beasts of draught, in favour of oxen, when their labour is done, and because they are only fit for the hounds.

In short, neither of these animals is to be generally recommended in preference to the other. Nature has provided situations best adapted for each of them.

The breeding of horses is not practised in this county as a separate branch of business, as in many parts of the north : but there are some farmers who breed a colt or two annually ; though not so many of late years as heretofore.

The great supply of draught-horses is from the midland counties, brought hither while colts and fillies, by dealers who attend the fairs and markets.

SECT. IV. — *Hogs.*

THE hogs of the eastern part are of various sorts, some farmers preferring large, and others small ones ; but there are none very large and coarse. The smaller sorts are those mixed with the Chinese breed. They are fattened at the age of eighteen or twenty months, for the use of the family of servants in farm-houses ; and made to weigh from ten to twenty-five score each. The Chinese fatten readily, but are generally thick hided, and do not bear the cold well ; and from their tenderness, are very apt to hide in stable-dung, and get the mange.

A great

A great number of pigs are reared in this district, and fed on the corn-stubbles for the butchers, which are killed in the autumn for roasting-pork, at the age of three or four months, then weighing as many score pounds each.

Some are fattened and killed at from six to twelve months old, and sold to small families in the neighbouring towns and villages, or to pork-butchers, who retail them in fides and quarters to those families. The business of rearing and fattening hogs for sale, is generally considered as a bad one.

In the western part of the county, there are a few farmers who have the larger kind, or Berkshire breed, of hogs; but in general, they are mixtures of many different sorts.

Little attention is paid to this animal, though the breed might, doubtless, be very much improved with proper care.

Many hogs are kept in the woods of the Weald of Kent in the autumn, on acorns, and fattened on corn in the winter.

Pork is the chief food of farm-house servants and labourers in husbandry in this county; and there are very few of the industrious workmen that do not fat a hog or two every winter. When hog-corn, such as beans and pease, is very dear, the farmers often let their workmen have a reasonable quantity at an under-price. This tends to keep up a mutual good understanding between the farmers and their labourers.

SECT. V. — *Rabbits.*

THERE is but a very small portion of this county employed as rabbit-warren. Brabourn Lees, near Ashford, and

and some small warrens near Folkstone, are the only ones that I know of. The rabbits on Brabourn Lees have some years, like sheep, been infected with the rot. However valuable they may be to the proprietor of a barren soil, yet they are often a nuisance, by the mischief they do in the neighbouring corn-fields.

Their skins, when in season, are nearly as valuable as their flesh; and they are very prolific.

S E C T. VI. — *Poultry.*

GEESE and turkies, fowls and ducks, are bred in this county sufficiently to supply the inhabitants, and a few to spare for the supply of the shipping that sail from Gravesend and the Downs.

The price of poultry is very much increased within these few years. Turkies now sell as high as 6*s.* or 7*s.*; geese, 4*s.* or 5*s.* each; and ducks and fowls, 3*s.* 6*d.* to 4*s.* per couple.

S E C T. VII. — *Pigeons.*

THIS kind of poultry, if it may be so called, is not in such plenty as some years back; a number of pigeon-houses have been destroyed, on account of the mischief they do to the thatch, as well as the corn-fields. The dung of them is valuable to sow on clover; but it is an article procurable in so trifling a quantity, as hardly to merit notice. The value of pigeons is about 5*s.* or 6*s.* per dozen.

S E C T. VIII. — *Bees.*

THE few bees there are in this county, are chiefly in the hands of the small farmers and cottagers. There are some

some instances of the latter class sometimes paying their rent by the sale of their honey and wax. There is, no doubt, a certain extent to which the quantity of bees might be increased; but what the increase might be, it is impossible to say; it seems, however, that a great many more might be kept, and, to appearance, without any expence or injury to any kind of crops; and, if so, it certainly is a thing well worth the attention of the Honourable Board, to propose some method of encouraging an increase of them †.

CHAPTER XIV.

RURAL ECONOMY.

SECT. I. — *Labour — Servants — Labourers —* *Hours of Labour.*

THE price of labour varies in different parts of the county. The regulating medium for all task-work, is the value of the day's labour.

† See Wildman on Bees,

M

Price

Price of Labour.

	<i>s. d.</i>	<i>s. d.</i>
Labourers per day, of ten hours, from	1 6	to 2 0
Thrashing wheat, per quarter † —	2 0	to 3 0
Barley — — —	1 4	to 1 8
Beans — — —	1 2	to 1 8
Oats — — —	1 0	to 1 6
Pease — — —	1 6	to 2 0
Canary feed — — —	6 0	to 7 0
Clover feed, per bushel —	5 0	
Spreading dung, per hundred cart-loads, } twenty-four bushels each —	3 6	to 4 0
Turning dung — — —	3 6	to 4 0
Making hedges, per rod —	0 2	to 0 4
If plashed and bound —	0 6	
Hoeing beans per acre, first time —	3 0	to 3 6
Ditto, second time —	4 0	to 4 6
Pease — — —	3 0	to 4 0
Dutch-hoeing canary and barley, per acre	1 8	to 2 0
Common hoeing — — —	3 6	to 4 0
Hoeing turnips, per acre —	5 0	to 6 0
Reaping of wheat per acre —	8 0	to 16 0
Mowing barley and oats —	1 8	to 2 6
Binding and shocking —	1 8	to 2 6
Cutting beans and binding —	5 0	to 6 0
——— pease without binding —	4 0	to 5 0
——— canary or radish feed —	6 0	to 7 0
Mowing fainfoin —	2 0	to 3 0
——— clover hay — — —	2 0	to 3 6
——— clover feed — — —	2 0	to 2 6
——— grafs in the marshes and meadows	2 6	to 3 6

† This year, 1795, by the badness of the crop, some farmers pay 10s. per quarter.

Waggoner's

	£.	s.	d.	£.	s.	d.
Waggoner's wages per annum,	10	0	0	13	0	0
and board —						
If a married man, and boards	10	10	0	0	10	6
himself, per week —						
Second ploughman, at per annum	9	0	0	11	0	0
Third ditto —	8	0	0	10	0	0
Waggoner's mate —	6	0	0	9	0	0
Second plough-boy —	4	0	0	6	0	0
Third ditto —	3	0	0	5	0	0
Bailiff —	12	0	0	16	0	0
Dairy-maid —	4	0	0	5	0	0
Cook-maid —	4	0	0	5	0	0
Shepherd, per week —	0	9	0	0	10	0
Womens wages for weeding, per day	8			0	0	10
Children, from ten to thirteen years old	-			0	0	6
Value of ploughing an acre of land	0	7	0	0	10	0
A harvest-man for five weeks,	3	10	0	4	0	0
with board —						
Without board —	5	5				

Hop-Garden Labour.

	£.	s.	d.	£.	s.	d.
Per day —	0	1	8	0	2	0
Digging, per acre —	0	15	0	1	0	0
Cutting, per acre —	0	5	0			
Poling —	0	10	0			
Sharpening old poles —	0	2	0			
Tying —	0	10	0			
Crowning, a shovelful of mould	0	1	6			
to every hill, when cleaned of						
superfluous bine —						
Half hilling —	0	3	0			

† With wheat and pork at reduced prices.

	£.	s.	d.	£.	s.	d.
Whole-hilling, or second operation	0	2	6			
Summer-hoeing, per acre	—	0	5	0		
Picking by the basket, of five bushels	}	0	0	7	to	0 2 0
Drying, per week, with a quart of strong beer per day		1	1	0		
Composition for tithe, per acre	0	10	†	to	1	5 0
First year of poling		5		to	0	7
Bagging, per bag	—	0	1	0		
———— per pocket	—	0	0	9		
Sharpening new poles, per hundred	0	0	6			
Shaving	—	0	1	6		
Drawing new poles into the ground, per hundred	}	0	0	3		
Stripping poles of the bind, per acre		0	2	6		
Opening the hills, per acre	0	3	6	to	0	5 0
Stacking poles, per acre	—	0	2	6		
Annual expence of an acre of hop-ground, from	}	20	0	0	to	30 0 0
Cleaning marsh-ditches, per rod		0	1	0	to	0 2 0
Cutting ant-hills, per acre	0	5	0	to	0	11 0
Carting them together	0	5	0	to	0	11 0
Value of ploughing an acre of land in stiff marsh-lands	}	0	10	0	to	0 12 0
Thatching, per hundred square feet		0	3	0	to	0 3 6
Carpenters per day, and 4d. allowance for beer	}	0	2	4	to	0 2 6
Bricklayer, with like allowance		0	2	6	to	0 2 8

Since the commencement of this survey, the scarcity of labourers, and high price of all kinds of provisions, have together made the price of labour much higher than

† The most general price.

above

above stated; but some parishes allow corn at a low rate to their workmen, instead of raising the price; others raise money for them by assessments; and some pay an additional price for the labour.

Upon the whole, the price of husbandry-labour is nearly double what it was thirty years ago.

In most parts of this county the labour is done by the piece; which is by far the best method for the employer, the employed, and the public; because the labourer has the opportunity, by greater exertions, of earning more money; and the master has more business executed by the same hands. The master's eye is only necessary to see that the work is properly done; and the community is benefited in proportion to the additional quantity of labour thereby performed by the same number of inhabitants of the country.

When a number of labourers work together by the day, much time is lost by idle conversation. Servants wages are not so much increased in the last thirty years as the prices of labour; about twenty per cent. being the full of the advance.

The scarcity of yearly servants is much greater along the coast than in the interior of the county; and their general conduct and behaviour are much better in the inland parts.

Labourers, since the commencement of the war, by emigrations to the army and navy, are become exceedingly scarce; and the price of labour is of course advancing. The hours of labour, in summer, are from six o'clock in the morning till eleven; and from one in the afternoon, till six in the evening, allowing half an hour for breakfast, in case that meal is not eaten before six o'clock; and then working till half past eleven; so that the standard day's labour is ten hours; but there are

few instances in which it is strictly adhered to. In winter, the time of working for a day is as long as daylight will permit, making the dinner-time as short as possible.

Upon the whole, a day's labour is generally much shorter than formerly, owing partly to the scarcity of workmen, who well know that if one master will not give them their hire for a short day, another will; and partly to the inattention of masters and their bailiffs to the hours of working.

S E C T. II. — *Provisions.*

THE easy communication between all parts of this county and the metropolis, renders the markets of Smithfield and Mark-lane the regulating medium, by which the prices of all kinds of provisions that are sold in the county are governed. If wheat rises 2s. per quarter at London, it immediately does the same at all the markets in the county; and if butchers meat is plentiful, and falls in price in Smithfield, it soon lowers in the country markets.

The supplies necessary for the army and navy, in time of war, must contribute to increase the demand for provisions; at the same time, two extreme dry summers, with one of the severest winters ever remembered, have contributed to decrease the supply. The latter causes, however, have principally occasioned the present scarcity, and consequent high prices of provisions. A decreased supply will always operate in raising the price of any commodity; but if to that is added an increased demand which must be supplied, the effect is doubled, and prices rise in proportion. A medium price can only be found in a just balance between supply and demand. Since
the

the beginning of this survey, the price of bread is advanced about cent. per cent.; and butchers meat about twenty per cent.

The present Prices of Provisions, December, 1795.

Mutton 6d. beef 5½d. veal 8d. pork 7d. bacon 8d. butter 12d. and good Cheshire cheese 7d. per pound, of sixteen ounces avoirdupois; potatoes 8s. to 10s. per sack of nearly 200lb. neat; coals 36s. per chaldron of thirty-six bushels; a half peck loaf of best wheaten bread, 2s.

SECT. III. — *Fuel.*

COALS are brought from Newcastle and Sunderland to all the maritime ports of Kent, and from thence are distributed to the interior parts, seldom exceeding 30s. per chaldron in time of peace.

Faggots of wood are found in plenty in the western and middle parts of Kent. The bakers, who formerly heated their ovens with wood, now in many places use coals, and, by experience, find it more advantageous: the decreased demand for fire-wood, by the new method of heating ovens, is amply compensated to the growers of wood, by the great consumption of faggots for burning bricks and lime. Turf and peat are very little used. Tanners bark, after infusion, is dried and formed of a convenient size, and becomes an article of fuel in the vicinity of tan-yards. In the eastern part of Kent, fire-wood for heating ovens is sometimes so scarce, as to sell from 16s. to 20s. per hundred of brush-faggots; each five feet and a half long, and three feet in girth.

CHAPTER XV.

POLITICAL ECONOMY.

SECT. I. — *Roads.*

THE principal road in this county, is that leading from London to Canterbury, which of late years has been much improved and kept in excellent order by the commissioners, who have immense sums at their disposal; and materials are everywhere near at hand: but it is somewhat extraordinary, that their power is not extended eastward to Deal, where there is such a resort of shipping. I am told, that this short space of sixteen miles between Canterbury and Deal, is the only part of the road from the Landsend to Deal that is not supported by turnpikes. The turnpike roads in other parts, are also, in general, very good, except some cross turnpike roads in the Weald, which are as bad as can be imagined; being even impassible for coaches or chaises very frequently in winter. The money collected at the gates on these roads, is barely sufficient to pay the interest of the sum borrowed; which is an evil that calls aloud for a remedy. The cause of the badness of these roads is a want of materials; the soil being a deep soft clay, without any mixture of gravel, flints, stone, or chalk, or any other good materials within a moderate distance.

The cause of the evil being thus seen, a remedy should
be

be fought; and what Nature has denied, Art and Industry should endeavour to supply. Bricks, burnt very hard, would make an excellent road, if laid on green furze, and covered over thinly with gravel. Fields, along the roads where there are no woods, might be sown with furze, for the purpose of burning bricks; and kilns might be erected at proper intervals. Thus the bricks would be made on the spot, and brought into use at an easy expence. Roads thus formed in those parts, would open communications that would probably lead to a variety of improvements.

Three hundred and forty thousand bricks are sufficient to pave a mile of road nine feet wide; the expence, therefore, is not very great. Paved roads have been made in Lancashire, which cost from fifteen to twenty hundred pounds per mile.

Where surveyors of the highways are attentive to their duty, the common roads are, in general, tolerably good; but I am sorry to observe, that there are a great many parishes whose roads are much neglected, the full composition for the statute duty not being collected, or the duty not performed.

If the full statute duty were performed, or the money arising from a full composition, were laid out with judgment and œconomy, there are few parishes that would stand in need of turnpikes, except in the Weald, or other places where there are no materials. But if three days duty only is compounded for, at four shillings and sixpence per day, and that money is injudiciously expended, as is too often the case, good roads cannot be expected. Upon the whole, the highway act is fully adequate to the purpose of making good roads; but the fault is in those who should carry it into execution.

One

One very great evil in the expenditure of the highway-money is, the lavishing it in the employment of carts to fetch materials from a great distance; when, perhaps, a labourer, with a pick-ax, would find sufficient on the spot for one-fifth of the expence.

SECT. II. — *Canals.*

EXCEPTING the navigation from Maidstone to Tunbridge, by small barges, and that I believe is not an artificial one, we have no navigable canals. This county being almost surrounded by the sea and the Thames, and intersected by the Medway, canals are the less necessary.

There are, however, many situations where navigable canals might easily be made, and some which would probably prove a source of great convenience and wealth to the neighbouring inhabitants and proprietors of estates.

Of these the river Stour seems to be the first object, as it certainly might be made navigable to Lenham. By such a navigation the Kentish ragstone would be conveyed to Ashford, Canterbury, and Sandwich, for paving or building, or for exportation; likewise oak-timber might be brought, at an easy expence, from the Weald of Kent to the port of Sandwich, for ship-building and other purposes; so might hops, fruit, bark, corn, &c. from the interior of the county to those towns; from whence would be returned coals, and such other goods as are now conveyed at a great expence to those parts by land-carriage.

S E C T. III. — *Fairs.*

THE old established fairs in this county are so numerous, that there is hardly any place to be found without one; but they are of trifling import when compared to the great stock-fairs of other counties. If, instead of several autumnal sheep-fairs, now annually held in East Kent, there were only one, there probably would be more business done at that than all the rest; and the establishment of a good sheep-fair, in the spring of the year, would be a great convenience to both buyers and sellers.

In 1792, a wool-fair was proposed by the worthy Baronet who represents the county, to be held at Ashford; which met with general approbation, and has hitherto been very numerously and respectably attended; and although not much business has as yet been done at it, on account of the prejudices of the buyers, who fancy that it is meant as a combination of the sellers, yet it is presumed, when those prejudices are done away, this meeting will be found a measure of great public utility to all parties concerned. There are considerable fairs, for the sale of fat and lean cattle, at Maidstone, Ashford, and other places in the Weald of Kent.

The Kentish Almanack mentions the time of holding all the fairs in the county; and Owen's Book of Fairs, those of the whole kingdom.

S E C T. IV. — *Weekly Markets.*

ALMOST every town in the county has a weekly market, where every kind of provision and vegetables are sold. The two cities of Canterbury and Rochester are well

well supplied by markets, under regulations of the respective corporations.

The Market-house at Canterbury has lately been rebuilt in an elegant stile: to defray the expence of it an additional tax was laid upon butter; which so offended the farmers in the neighbourhood, that they entered into an agreement to bring no more to market, but to expose it for sale at a place without the liberties of the city; and instead of spending the money at the city-shops adjoining the market, it was carried away to purchase goods at other places. The citizens, finding that their interest lay in a free sale for provisions of every kind within the city, took off the additional toll.

SECT. V. — *Commerce.*

THE chief part of the agricultural commerce of this county, is that of exporting corn to the London markets; very little is sent to foreign ports directly from Kent, though much of the Kentish corn goes abroad, when corn is exported, from the grand receptacle, Mark-lane market.

At the towns of Maidstone and Chatham, and all others on the coast, there are several hoys, carrying from three to five hundred quarters of corn each, which are continually going to London with the produce of the land, and returning with grocery, &c. for the supply of the country.

The soil and climate of this county being better adapted to the growth of corn than of grafs, no cheefe or butter is made for exportation, nor a sufficient quantity for the consumption of the inhabitants; the deficiency, therefore, commerce supplies from other parts of the kingdom.

SECT.

S E C T. VI. — *Manufactures.*

THE manufactures of this county are very trifling; probably owing to the successful attention generally paid to agriculture and grazing. It has been observed by sensible writers on agriculture, that where manufactures most flourish, the land is most neglected; and this county is an instance of the truth of the observation. There is hardly any county to be named where agriculture is arrived at such perfection, or where there are so few manufactures as in this. There are some, however. At Canterbury, silk has been manufactured to a considerable extent; but it is now giving way to cotton. Much credit is due to Mr. Callaway, for his spirited exertions in this branch.

At Dover and Maidstone are manufactories of paper, of all sorts. At Stoner, near Sandwich, and the Isle of Grain, are salt-works. At Whitstable and Deptford are large copperas works; and in the Weald of Kent, bordering on Sussex, are furnaces for casting iron.

Gunpowder is made at Deptford and Faversham; and at Crayford there are large works for printing of calicoes, and the whitening of linens. Sandwich was formerly famous for a particular kind of flannel, and some other woollen goods; and the inhabitants were increased and enriched by the establishment; but the business has long been driven from thence to the northern counties, by the increased price of labour in Kent. An attempt has lately been made, by a spirited young man in that town, to carry on an extensive manufactory in coarse woollen and linen goods; which promises well. Sacking and hop-bagging have always been manufactured in sufficient quantity for the consumption of the county.

It

It seems to have been an error in the politics of this country, to have bestowed so much attention to the encouragement of manufactures, in preference to agriculture. Had the same encouragement been given by parliament, for the last fifty years, to agriculture as we have seen given to manufactures, we, probably, by this time might have had many thousand acres of land, that are now desolate wastes, in a high state of cultivation, and covered with a healthy race of inhabitants. The lower classes of the people employed in agriculture, are always the most healthy, and get the most comfortable living; and by their residence in the country, at a distance from great towns and populous villages, are more out of the way of temptations to vice and idleness. Let the cottages of the farmers labourers be examined, and compared with those of the manufacturers in great towns; the former will be found comfortably clad and well fed, while the latter are often starving in rags and filth.

There can be no doubt but that agriculture and manufactures are mutually dependent on each other; but it must be bad policy to encourage any one at the expence of the other.

S E C T. VII. — *Poor.*

THE poor of this county are generally well taken care of by the parish-officers, and their opulent neighbours. The greater the scarcity of provisions, and the more the appearance of distress among the poor, the greater is the extent of charitable contributions, over and above what the law provides for maintaining them. The poor laws are such, that no person need be in distress for provisions, if it be not his own fault. Those who are capable of labour, are sure to find employment among the farmers;

farmers; for in an agricultural county like this, workmen are always wanted. It is only in manufacturing counties where there can be any real distress among the poor. Those who are incapable of labour, the law has amply provided for. The sober and industrious labourer in Kent, unless he has a large family, cannot with propriety be called a poor man; because, by his industry, he can always procure a comfortable maintenance, equal, if not superior, to the little farmers (usually called peasants) of some foreign countries; or perhaps to some small tenants of this.

SECT. VIII. — *Population.*

I AM sorry it is not in my power, from the number of my avocations and the length of time this survey has already taken me up, to give to the Honourable Board full satisfaction on this section.

Mr. Hafted informs us, that by modern calculations, Kent is supposed to contain 40,000 houses, inhabited by 200,000 persons, of whom 60,000 are able-bodied men.

“ When the militia was altered to the present mode,
“ the return made from this county of able-bodied men
“ fit to serve in it, was 16,757 in West Kent, and 9,164 in
“ East Kent; in all 25,921: according to which, the
“ proportion of militia-men allotted for this county by
“ parliament, was, for West Kent, 621; for East Kent,
“ including the city of Canterbury, 339; in all 960.

CHAPTER XVI.

OBSTACLES TO IMPROVEMENT.

THE principal obstacles to the general improvement of this county, are the payment of tithes in kind, the corn-laws, and the prohibition to export wool in its raw state.

That the payment of tithe in kind does operate against improvements is evident, from the immense quantity of poor uncultivated land in most parts of this county where the tithe is paid, remaining in its barren state; while some of the same sort of lands, where farmers happen to have the tithe themselves, are improved and cultivated to a high state of perfection, and made as productive as some of the best lands.

The corn and wool-laws were professedly enacted to keep down the price of those articles; if, therefore, they do operate according to their original intention, it needs no argument to prove that they are obstacles to improvement.

The rights of commonage on the barren heaths of this county, is certainly an obstacle to their improvement. Short leases are likewise great obstacles; no man of common prudence will spend much money on his farm to improve it, unless he has a security of reaping the benefit of it himself; besides, if he does so, he must be aware that he is throwing out a great temptation to an
illiberal

illiberal neighbour to bid for his farm, or to a rapacious landlord, to take advantage of his liberality and industry.

Respecting the legislation and police of corn, I am not competent to give information on these heads to the Honourable Board; but it is my humble opinion, that were there no corn laws, there would be a much greater quantity of corn grown; and, if so, the markets would be filled, the prices lowered, and, by the increase of quantity, the farmers, and ultimately the land-owners, would be enriched. The dread of a low price must evidently tend to deter a farmer from cultivating and improving his land with a view to grow more corn; hence the intention of keeping corn low has the effect of raising it, by discouraging its cultivation. On the other hand, were laws enacted with the intention of making corn dear, in all probability, by the very idea of such a prospect, cultivation would be so much extended, as to make corn plentiful and cheap.

CHAPTER XVII.

MISCELLANEOUS OBSERVATIONS.

SECT. I.—*Agricultural Societies.*

IN January 1793, a Society for the encouragement of Agriculture and Industry, was established at Canterbury, under the patronage of Sir Edward Knatchbull, Bart. and Filmer Honeywood, Esq. the members for the county.

Officers for this Society are annually elected; and those for the present year 1795, are,

PRESIDENT.

SIR JOHN HONEYWOOD, *Bart. M. P.*

DEPUTY PRESIDENT.

Henry Godfrey Fausset, Esq.

STEWARDS.

James Tillard, Esq.

Mr. John Boys.

TREASURER AND SECRETARY.

Mr. John Jacob.

A com-

A committee, consisting of twenty-four members; twelve of which are annually nominated in the following manner :

The President first appoints a new member; then the person so appointed nominates one of the old committee, who mentions a new one; which goes on alternately till twenty-four are appointed.

*A Sketch of the Kent Agricultural Society,
as published by the Society.*

“ The advantages that the public are likely to receive from the institution of Societies for encouraging Agriculture and Industry, and the benefits that have accrued to those parts of the kingdom in particular where they have been already formed, first gave rise to the idea of the establishment of one in this county. To shew the utility of such an institution, it will be necessary only to state what are the CHIEF OBJECTS OF ITS ATTENTION.

“ To excite by premiums, and otherwise, a spirit of emulation among the ploughmen :

“ To encourage a spirit of industry among the labourers :

“ To reward the labour and industry of those poor labourers and cottagers who shall breed up, or have bred up, the greatest number of legitimate children, either without any or with the smallest relief from their respective parishes :

“ To encourage diligence and industry in servants, of both sexes, employed in husbandry :

“ To promote the knowledge of agriculture, by encouraging experiments on those subjects which are of the most importance to it; by distributing rewards to such persons as shall raise the largest and best crops of natural

tural and artificial grasses, and the several sorts of grain, on any given quantity of ground; the nature of the soil being taken into consideration :

“ To encourage the improvement of waste lands, by inclosing, draining, manuring, raising plantations; and by the introduction of vegetable food for cattle :

“ To encourage the improvement of the breed of all sorts of live stock, and to provide for their health better than has been hitherto done :

“ To promote all improvements in the various implements belonging to the farmer, and to introduce such new ones as the experience of other counties has proved more valuable than those now generally used in this.

“ And as there is hardly any object of rational improvements which may not be brought within the influence of such institutions, by a proper distribution of premiums, the attention of the Society will always be directed, in proportion to the support it shall receive, to every thing that may hereafter appear most likely to conduce to the prosperity of this county in particular, and to the good of the community at large.

“ As it is the wish of this Society, that its utility should become as extensive as possible, it is earnestly requested that all persons who approve of the institution will give it their support. Subscriptions may be paid into the hands of the Treasurer, or into either of the three Canterbury banks; or into the banks of Messrs. Brenchley and Co. Maidstone, and Messrs. Day and Co. Rochester.”

The rules and regulations for the government of this Society are well drawn up; and its finances are at present in a flourishing state. A great many servants and labourers have received the Society's premiums for long and faithful services, and for bringing up large families. Among other premiums, is one of 10*l.* 10*s.* for a double turn-wrest plough.

Books of the transactions of this Society are to be had at the printing-office, Canterbury, price 6d.

Some years since, a society was established at Maidstone, called the Kentish Society, for promoting every branch of useful knowledge through the county of Kent. This was begun under the patronage and support of the late Lord Romney, the Earl of Stanhope, and the present Lord Romney, then the Honourable Charles Marsham. Whether it was by aiming at too much, or from a want of support in subscriptions, that it fell to the ground, I am not competent to say.

About a year ago, an attempt was made to establish another society at Maidstone, upon less general principles; but joining some other sciences with Agriculture. There was a great number of the names of the first of the nobility, gentry, and yeomanry, who, by public advertisement, called meetings at Maidstone, in order to settle the business; but either from want of a full attendance, or of subscriptions, their efforts were not attended with the desired success.

SECT. II. — *Weights and Measures.*

THE difference of the weights and measures, is an evil in trade and agriculture that most certainly requires a remedy, though the evil is much less in Kent than in many other counties. The pound weight is the avoirdupois, of sixteen ounces; and the stone of meat, eight pounds at some places; and at others, fourteen pounds. Most heavy goods are sold by the ton, consisting of twenty hundred weight, each of 112 pounds.

Since the late determination in the Court of King's Bench respecting the measure of corn, all local mea-

tures have been abolished, excepting the standard Winchester bushel, which contains 2150.4 cubic inches. Before that determination, we had three different sized bushels in the town of Sandwich (viz.) eight gallons and a quarter the country measure; eight and an eighth the town measure; and eight gallons the London, or Winchester measure. In some parts of the county, the bushel contained eight gallons and a half; in others, eight and three-fourths; in some places nine gallons: and in most of the eastern parts of the county, twenty one quarters were allowed to the score, measured with a large bushel.

The rod is five yards and a half, or sixteen feet and a half; and the acre, the true statute measure of 160 rods or perches.

Corn is now invariably sold by the quarter, consisting of eight Winchester bushels. Hay, straw, and hops, by the ton. Apples and potatoes by the sack, of about three bushels and a half, and sometimes by the sieve, a basket containing about a bushel.

Butchers meat is usually sold in East Kent by the score pounds, and in West Kent by the stone.

CONCLUSION.

CONCLUSION.

Means of Improvement, and the Measures calculated for that Purpose.

A FAIR commutation for tithe is the measure best calculated for the improvement of this county.

This would be a spur to invention and industry, and lay a foundation for a variety of improvements, especially in poor barren districts.

There is a great deal of poor land that requires as much money to be spent in bringing it to its utmost state of improvement, as will purchase the fee-simple of it.

But there are very few farmers who will do that, with the prospect before them of another person's enjoying the tenth of the produce.

Waste Lands. There is scarcely an acre of land to be found in this county, but what might be converted to some valuable purpose.

The gravelly and sandy heaths, when once put into severalty and properly cultivated, would produce good turnips, feeds, and corn.

The cold clays and wet commons, no doubt, would likewise produce good corn, or make inclosed meadows or pastures.

Draining. The bogs of this county are but few in number, and small in extent: but, whatever the quan-

tity, they might certainly, at a very small expence, be made at least of six times their present value. In the middle and western part of Kent, there is a great number of small vales of marsh-land liable to be flooded in the winter; which might be effectually drained at little expence, were they under a commission of sewers, with proper powers.

In other parts of the county, there are very extensive tracts of marsh-land often entirely under water for many weeks together, to the great loss of individuals and the public. This is an evil which certainly can, and ought to be remedied.

Every mechanical contrivance that tends to lessen the labour of the husbandman and his expence, may be justly reckoned an improvement. Under this head, the new invented thrashing-mills are of the first importance.

There are many situations in this county where a small rill of water runs by a farm-yard, with a sufficient fall to turn a water wheel. Wherever farms are thus fortunately circumstanced, the expence of thrashing out corn may be reduced full one half; and the labourers, who otherwise would be constantly in the barn, by this means, may be spared for carrying on improvements in manuring, draining, and various operations in husbandry: so that, although the labourer may be deprived in one instance of his employment, he is amply recompensed in the other; for employment accumulates with improvement.

These appear to me to be the principal means of improvement, and are such as will probably introduce many others. Thus a commutation for tithe, and the cultivation of the waste lands, would produce turnips, clover, mutton, and wool, where those articles have
never

never before been raised. In these productions, a foundation would be laid for the cultivation of corn, to feed the human and animal species, and for the employment of manufacturers.

Hence would spring a reciprocation of interests to the farmer and manufacturer, and an accumulation of benefits to mankind in general.

APPENDIX.

A P P E N D I X.

A Note on Hops, by a Gentleman stiling himself a Middle Kent Farmer; inserted in the Margin of the Original Printed Manuscript, circulated for Remarks and Observations by the Board of Agriculture.

THE author of these pages, an East Kent * corn-farmer, appears to write in a most sensible judicious manner on subjects falling within his immediate observation.

On the plantations of the middle of Kent, and resident as he has been forty miles from them, he has had very little opportunity of informing himself; for can it be supposed a stranger who comes into a town for a very few days, which I learn from the parties he quotes for his information, was the case, should procure sufficient (at best at second hand) information to write so fully or so correctly, as the large and very populous district I quote, well known under the appellation of Middle of Kent, ought in justice to have; and in which the largest capital, in proportion to its extent, is employed in agriculture, perhaps of any part of England of a similar size, and considering it is almost without manufactures as populous in proportion. I was informed by one of the

* The Editor has been a hop-planter upwards of twenty years, the greater part of the time on a large scale, and he has often had opportunities of seeing the Middle Kent plantations. His enquiries at Maidstone confirmed him in the sentiments he has expressed in this report.

parties

parties he went to ask information from, previous to this Work making its appearance, that he came very much prejudiced in favour of the part of the county he came from; and I was, in some measure, prepared for rather a partiality, which it is natural for us all to carry about us for our native spot; nevertheless, I did not expect, by much the largest plantation of England †, and the original spot from whence the hops were dispersed to other parts of it, should have passed off with only five and a half short lines, in which the whole growths are condemned in a lump in the words of Mr. Boys. "This plantation some years grows great crops of hops; but the quality of them is much inferior to those of Canterbury and East Kent."—In reply to this, I doubt not but he will find, from the kindliness of the land generally to the growth of hops, that on an average of all years, and particularly of the difficult ones, Middle Kent exceeds in quantity those of Canterbury and East Kent: and as to quality, on the generality of good grounds, they cannot be exceeded by any growing in England. Real judges of hops allow it. And the largest growths round Maidstone, from the following places, Linton, Loose, Otham, East and West Farley, Watlingbury, Teston, East and West Peckham, Maidstone, East and West Sutton, Yalding, Hunton, Boughton, Malling, and many other places, where the soils are rocky, are principally consumed by the London brewers; not but that there must be situations where, in so very large an extent, hops are planted of a very coarse sort, because no others will grow; but they are easily distinguished by the most common observer, by the largeness, coarseness, and harshness of the leaf and feel; and they want condition, the most valu-

† The Canterbury collection of duty takes in a very large proportion of the grounds close to Maidstone.

able quality. But because in the outskirts such grow, and in situations where no hops ought to be planted, are all the hops growing in the heart of the county to be condemned for it, and included in a general censure, and only the spot where Mr. Boys is a very small grower †, hops are to be found that are good? Is there not a similar difference in the quality of East Kent hops?

I am well aware that Farnham, in Surrey, may be urged as an instance against the Kent hops being equal to any, on account of the very superior prices they sell at. But until the consumers generally become judges of the quality of hops, I do not admit the price at market of particular growth to determine the quality. Perhaps the quality of no article is so little known by the consumer as that of hops. The colour being a clear bright green, or the nearer it approaches to it, and their being clear of the large green leaves and strigs, which are apt to drop in while picking the hops, together with a handsomely ornamented thin covering of cloth, are the criterions for a good price at a country market, and particularly for the consumption of the western counties, where Farnham hops principally are sold for very high prices.

Now, my opinion of the quality that hops ought to possess, are these: 1st. They ought to be ripe before they are gathered; and in getting so, they pass from a green to a rich yellow colour. 2dly. They ought to grow on a soil that, instead of enlarging the size of the hop and strig, grows them full of farina (provincially, condition). 3dly. They ought to be very thoroughly, but slowly dried, and then be packed for market in the thickest covering that can be found, as that preserves

† He has about twenty acres. *Editor.*

their

their strength. The colour of those hops that hang till they are ripe, can never be so beautiful as if they were gathered green; for they are generally bruised by the wind at the equinox, the time of their ripening. But the quality of their bitter is superior in flavour, goes farther, and will never deceive in brewing, like the early-gathered ones, keeping good if home dried provincially, or full dried for years. In all these qualities, the Middle Kent hops are not exceeded by any §. Yet it is the practice of Middle Kent, the inhabitants not being sufficient by three-fourths to gather in the crop of hops, to employ people coming from London (on account of the great extent of their plantation) who do not pick them quite so free of the very fine green small leaves growing on the bine with the hops as they do at Farnham, or indeed, as some are in East Kent. Yet those small leaves do not prejudice the quality of the bitter; and if they do no other good, they shew the manner in which the hops have been dried to the buyer, from their consequent clear or muddy colour; and are a guide in that very important property of the hop, and are so far of service. But where this is carried to an extreme, as I have seen it done in both East and Middle Kent, it becomes a fault.

Another Note, by the same Gentleman.

A corn-farmer coming from such a fertile spot as the low rich lands of East Kent, with inexhaustible supplies of rich manure furnished by the sea ||, and without any part of the farm robbing the rest, as is the case with all hop-farms, should be reminded, that the principal farms

§ East Kent hops generally sell for most money. *Editor.*

|| He lives on high chalky hills, at too great a distance from the sea, to get any of the supplies of manure alluded to. *Editor.*

of

of Middle Kent are hop-farms; and corn makes only a secondary consideration with them †.

In favour of our farmers and soil, it may with justice be urged, that, when our corn-land is robbed of its proper return of manure by our hop-grounds; and theirs, on the contrary, has the whole of what is made from it, and one-third on the average added to it from the sea, I trust that what Mr. Boys, who is unacquainted with our stile of farming, may on a superficial view think negligence or want of skill, will be more rightly placed to the want of manure to supply the waste our hop-grounds make, by returning no manure back again. An acre of hop-ground requires twenty good sized cart-loads of well mixed and rotted dung and mould annually. Allowance may therefore, with propriety, be claimed for the corn and meadow-lands bearing less luxuriant crops than the soil and same management under different circumstances would do. When it is considered that one-tenth, and with many one-fifth, of a farm is under hops, as well as the consumption of dung with it, will not the high state of cultivation of Middle Kent appear extraordinary? For certain it is, that the greatest exertions (without a regard to expence) are made to replace the waste of manure, as well as to render all the crops productive. In consequence, the very considerable expediture of our farms in labour, &c. has occasioned this district to be the most populous of any other part of the county, or perhaps of England, where there are no manufactures carried on.

A farm that has twenty-one acres of hops, requires seven hop-ground men, at least, to look after it; but two and a

† This is more a condemnation of the husbandry than a proof of its superiority; because, confessedly, the corn-land is sacrificed to the hop-grounds. *Editor.*

half acres of hops to one labourer on a farm, is as much as he will well manage; and for the most part, they are employed the year round.

A Description of the Soil in the Isle of Shepey, with Improvements that may be made upon the Arable Lands there, submitted by W. FAIRMAN.

THE soil of the uplands in general is, as Mr. Boys observes, a very stiff and wet clay; and that of the low marsh-land only differs from it in having a mixture of shells and sea-sand, which makes it sufficiently porous, and of course, sound and dry.

The system of managing the arable part of the uplands is in general vague and indefensible; yet there are some farmers whose practice is worthy both of notice and imitation.

The misfortune is here, as in all soils of a wet and close texture, that the farmer has to expect but a short time in the spring and autumn for the cultivation of his land; and he must be subject to much inconvenience from the want of a variety of soil, as it is hardly possible to find employment for his men and horses one half of their time*; and a great strength must necessarily be kept to avail himself of a favourable opportunity when it offers. Soils similar to these uplands will absorb a prodigious quantity of water; which they will retain till the sun and winds evaporate it, and from that state they hastily

* They might get sea-sand and shells for manure. *Editor.*

become

become crusted; and here it is, in my opinion, that the skill of the most assiduous farmer is baffled; the contraction of the surface, most certainly is injurious to vegetation; and to prevent it, great efforts should be used.

Why do they find the natural grass come best in their wheat stubble? Why so seldom fail of a good crop of wheat and beans, where an early season is obtained? And why do they succeed so well after a severe frosty winter, where a good plant is preserved? The reason to me is obvious, that an ashy or dusty surface is obtained, which repels and prevents the penetration of the sun and winds; and instead of every limb of vegetation being torn off by the contraction of the soil, the plants are nourished and become vigorous, by the progress they make in the horizontal position; and the fibrous roots, from running through a soil in that state, become elastic, and expand with greater powers. To get land into this state should be the grand object; and to attain it, I shall beg leave to submit my observations to that effect, under three heads, viz.

1st. Early sowing.

2dly. Land draining.

3dly, and lastly. Proper materials for altering the texture of the soil.

I. Early ploughing for the wheat-season, whilst the land is in a dry state, must be of infinite use; and the land that is intended for the spring-corn, for the same reason, ought to be ploughed as early as possible, that it may lie rough through the winter for the frost to have the greater power over it; the farmer will then get a good season, if he will wait; and he need not fear a severe drought, as the land in that state will always retain the moisture. I do not pretend to advance, that late ploughing will never succeed; I have seen the reverse, though the chance is ten to one against such practice; but
when

when it has proved fortunate, a very dry time has set in, followed by a deluge of rain sufficient to wet a clod through of an hundred weight: for several years back, a clod of half that size might have remained the whole summer perfectly dry within side, and of course too stubborn to be broken by common workmanship: a season in this case must be lost. Summer-fallowing must be of infinite use to clean and pulverize the land, and to receive such compost, and manure, as may be thought best to dress it with.

II. Land-draining, which is of great importance on soils so very wet and tenacious as that of the uplands in this island; and every field lying with some declivity, is well situated for such improvement. Surface-draining has been much practised; but I have seen it hurtful, from the method some farmers have pursued, by drawing the furrows directly down the declivities; the water, by that method, gains too much force, and washes away the earth from the roots of the plants, which occasions the corn and grass to turn yellow. It is certainly found to be the best method to plough fields of this description the contrary way, and to lay the land in small ridges to catch the water, that it may be conducted down the field by frequent large drains, across the furrows, at least fifteen inches in depth. I must confess, I am a greater advocate for under-draining, notwithstanding it is done at a considerable expence, as it is the most effectual, and will be in the end the cheapest; for it will last, if done with wood in a proper manner, twenty years; and if done with stone, I may say for ever. It is but right that I should explain myself for being so very partial to under-draining. Where draining is necessary, the pores of the earth are evidently obstructed; and I am persuaded the obstruction is principally in the second stratum of the earth, or what

Mr. Boys very properly terms the subsoil; and, from some observations, I am positive in my opinion. It is very common to see the water stand on ploughed land where the furrows are quite open to the bottom; and by digging a hole about the size of a half hoghead barrel, I have seen it taken off to a good effect; and instances too are perpetually occurring of deepening ponds that will not hold water afterwards.

III. Proper materials for dressing and altering the texture of the soil.

In the article of manure, Mr. Boys very properly takes notice, that the sea furnishes an inexhaustible supply of sand and shells, called Sea-shingle, that greatly improves arable land. To prove their use, I will attempt it by comparison. Strange as it may appear, it is very evident that all the low flat marsh-land in this island, supposed originally to be the sediment of the sea, is never too wet, notwithstanding the soil is stiff; and the instant you ascend the uplands they are found soft and wet in the winter season; and a horse would sink over his pasterns, when not fifty yards below, the print of his shoe would scarcely be seen. The land that is thus affected loses full half its value: This wonderful circumstance of the lowest land being the most dry, I attribute to a portion of shingle or sea-sand, as I first mentioned in my description of the soil, deposited by the sea, and occasioning the necessary filtration of the water through the soil.

I have only to add to the foregoing observations, that under-draining, and manuring with sea-shingle, appear to be the most rational and adviseable methods to improve the uplands of this island: and I recommend, as an experiment, under-draining with shells only.

Having

Having mentioned to Sir John Sinclair, an idea I had long entertained, that vegetables dried on a kiln might be rendered useful to sailors in long voyages, he directed me to procure some potatoes, and dry them on his account: I accordingly purchased four sacks, which I dried on a common hop-oast, and sent them to him in March last, with the account in a letter, as under.

SIR,

IN two matted parcels, by the Endeavour Sandwich Hoy, I have sent you the produce of four sacks of potatoes, after being kiln dried.

The expence and weight of them, before and after drying, are inclosed.

I got the potatoes pared, and have dried the whole, that you may see the effect, and try what experiments with them you may think proper; and I have had twenty-eight pounds of the white sort ground; the meal of which is sent in the parcel to which it belongs.

I think the expence of drying would have been less, if the quantity had been greater, because the oast-cloth was not sufficiently covered to prevent the heat escaping too fast. I found it very difficult to get the thermometer up to 104. On account of the small quantity to dry, I used my least kiln, which is an oven-oast; by which the colour of the potatoes is more yellow than it would have been if dried on a cockle.

I beg leave to recommend to you to send a small cask of them a long sea voyage, to be returned to you, that you may see how they keep, and what use may be made of them on their return. I have long been of the opinion

that all kinds of vegetables might be thus dried for the use of sailors.

I have the honour to be,

SIR,

Your most humble Servant,

Belthanger,
March, 20, 1795.

J. BOYS.

EXPENCE.

	£.	s.	d.
2 Sacks of White Potatoes, at 10s. 6d.	1	1	0
2 Sacks of Early Brown ditto -	1	1	0
Two men, three hours each, washing them	0	1	0
A man attending oast, and drying, two nights and one day	0	4	0
Two bushels of cinders -	0	2	2
Two bushels and a half of Welch coals	0	4	4½
Seven women, a day and a quarter each, paring and slicing them, at 9d. per day	0	6	8
	3	0	3¼

Linen bags, mats, &c. as package, no part of the expence.

Weight before and after drying.

	cwt.	qr.	lb.		Qrs.	lb.
2 Sacks, white potatoes nt. wt.	3	0	19	{ dry best	2	9
				{ parings	0	19½
2 Sacks, Early Brown	3	0	10	{ dry best	2	12
				{ parings	0	21¼

The four sacks of potatoes were well scowered with a broom in tubs of water, and then, by women, pared and cut in slices, about one-fifth of an inch in thickness; which

which were laid on a small oast, about twelve feet square: when thoroughly dried, they became extremely brittle, and were easily ground to meal between a pair of corn-stones.

As potatoes may be thus dried in slices, if well washed with the rind on, the expence of paring might be saved; and the slicing might be done by an instrument; so that the whole expence, when potatoes are at 10s. 6d. per sack, would be only about 36s. per hundred weight when dried.

The expence of washing, slicing, and drying, if the slicing were done by an instrument, it seems by this account, would be about 9s. per cwt. on the dried substance; and it would be considerably less if a large quantity were done at one time. It may be thought, that even that expence is too great; but if it should be found that potatoes, or other vegetables, can be dried so as to preserve their nutritive qualities in long voyages, the expence in such case will be no object.

The following is a Copy of Correspondence on this Subject, between the Honourable Board of Agriculture and Victualling Office, &c.

To T. M. Ruffel, Esq. Captain of his Majesty's Ship St. Albans.

SIR,

Victualling Office, 8th July, 1795.

THE Board of Agriculture having, through their President, Sir John Sinclair, sent to this Board a small quantity of potatoes sliced and dried, and of some meal ground from them, prepared by a Mr. Boys of Betshanger, in Kent; and conceiving this method of curing that root may prove to be a valuable discovery on board ships, requested that a part thereof might be furnished to some

ship going on a long voyage, in order to ascertain whether potatoes in the before-mentioned state will keep on ship-board, and particularly in hot climates, without being attacked with weevils or other insects,—we beg leave to inform you, that, being at all times desirous of promoting any discovery that may have a tendency to benefit his Majesty's service, we have ordered two kegs, the one containing a proportion of the dried slices, and the other of the meal, to be sent to our Agent at Portsmouth, with directions for his putting them, with your permission, on board his Majesty's ship *St. Albans*, under your command; and we have therefore to request you will be pleased, in due season, to cause the kegs to be opened, and to report to us the state of preservation in which you shall find the potatoes so cured to have kept, that we may communicate the same to the Board of Agriculture.

We are, Sir,

Your most humble Servants,

*G. Cherry, F. J. Hartwell, F. Stephens,
R. S. Moody, J. Hunt, W. Boscawen,*

(Copy) *W. Gosling.*

St. Albans, St. Helens, 18th December, 1795.

GENTLEMEN,

IN obedience to your direction, I have at different periods, and in the different climates to *St. Helena*, and back again, inspected into the state of the prepared potatoes; and beg leave to give it as my very humble opinion, that both the sliced and the meal retain all the essential qualities of the potatoe, unimpaired, although

APPENDIX.

199

though somewhat altered in colour. They are now lodged in your office at Portsmouth, with my advice to your Agent to forward them to your Board.

I am, with great respect,

Gentlemen, your obedient

and very humble Servant,

T. M. Russell.

Examined, W. W. (Copy) *W. Gosling.*

Commissioners Victualling.

To Sir John Sinclair, Baronet.

SIR, *Victualling Office, 9th January, 1796.*

AGREEABLY to the letter we had the honour of addressing to you on the 1st of July last, in return to yours to our Chairman, dated the 27th of the preceding month, we beg leave to acquaint you, that we caused a part of the potatoes, sliced and dried, and of the potatoe-meal, which had been prepared by Mr. Boys of Bethanger in Kent, and which we received from you through our Chairman, to be forwarded to his Excellency Governor Hunter, at New South Wales; and the remainder, contained in two small kegs, to be put on board his Majesty's ship *St. Albans*, bound to *St. Helena*, under the command of Captain *J. M. Russell*; each of whom we requested would, in due season, inspect into the state of preservation in which such potatoes and potatoe-meal should be found to have kept, and to report the same to us.

Captain *Russell* has in consequence informed us by his letter, dated the 18th of December last, that he had at

different periods, and in the different climates to and from St. Helena, inspected into the state of the potatoes so prepared, which had been put under his charge; and is of opinion, that both the sliced and the meal, retain all the essential qualities of the potatoe unimpaired, although somewhat altered in colour; and he having also returned the said kegs to us, we herewith transmit to you copies of the letter we wrote to him, and of the report he has made thereupon; together with the kegs, containing the remainder of the potatoes and meal for your inspection.

We beg to add, that as soon as we receive Governor Hunter's Report upon the subject, the same shall be transmitted to you.

We have the honour to be,

Sir, your most obedient

humble Servants,

*G. Cherry, F. Stephens, G. P. Towry,
R. S. Moody, J. Hunt, W. Boscawen.*

Examined. (Copy)

*The Editor is favoured with the following, by a Gentleman of
the Faculty in East Kent.*

THE disorder, called *blowing* in cattle, is a species of colic, arising from an over-distention of the first stomach with air. In this stomach the food is only slightly macerated; during which process, a gentle fermentation takes place, and at the same time a quantity of fixed air is generated.

generated. When this air is in a moderate quantity, it helps to throw up the cud; first, by gently distending the stomach, it forces it to contract: the air then rises into the mouth, and carries with it some of the food, thus partly digested, to be masticated afresh.

If an animal of this kind eats too greedily of very fuculent food, fermentation takes place so rapidly, and the stomach becomes so much distended, that it loses the power of contracting; consequently, the cud cannot be forced into the mouth; the stomach becomes more and more distended; by which means the orifices become entirely shut up, and, unless soon remedied, the animal dies.

To cure this complaint, two things are required; to stimulate the stomach, and to check the fermentation. The following I think likely to answer both purposes:

Lime-water, a gallon; ginger, in powder, an ounce; opium, half a dram; gin or brandy, a pint. Digest all together, and keep in a bottle well corked.—A sheep may take a quarter of a pint every hour; a bullock a quart, in the same manner. I prefer lime-water for the menstruum, because it will absorb much more than its own bulk of air; consequently, it will not increase the distention of the stomach.

If any kind of drink is required, or is in the least admissible, lime-water is proper.

*Abstract from the Orchardist:**Drawn up at the Desire of the Board of Agriculture, 1796.*

 THE ORCHARDIST.

THE orchards of the kingdom are a material branch of its agriculture; and it is expected the standard fruit-trees will soon be much improved, from the exertions of THOMAS SKIP DYOT BUCKNALL, Esq. who has been very assiduous in establishing the science of Orcharding, as patronized by the Society for the Encouragement of Arts, Manufactures, and Commerce, and published in the 11th, 12th, and 13th volumes of their valuable Transactions, conformable to the practice introduced at Sittingbourne, in the county of Kent, in the year 1790.

In those books, not only what ought to be done, is fully pointed out, but many useful hints are given to guard the planters and fruit-growers against the usual effects of neglect and mistakes, both in the trees and their culture.

There are also observations on the suitable manures; and great stress is laid upon proper soil, position, and judicious

SHELTER.

The Author's express wish, in each publication, tends to make most trees in an orchard

HEALTHY,

Large, Handsome, and Productive.

The

The operation is properly called the System of Close Pruning and Medication; as the governing principles for establishment of health begin by cutting close, making the trees perfectly clean, and destroying the numerous insects, vermin, and microscopic creatures that make such great havock on fruit-trees, by constantly eating and fretting the tender bark, which prevent the wounds from healing.

He maintains, that the baneful effects of canker may in part be prevented in the more delicate fruit-trees; as the first cause of canker arises from an *animalcule* something like the cochineal fly, and which is effectually destroyed by the medication: and the medication will, in great measure, stop the oozing of gum in the several species of cherries, and other stone-fruits. Further he observes, insects are great depredators on the delicate fruit-trees, by eating off the blossoms and leaves in the spring.

The Orchardist, by a little attention, for there is no mystery, may nearly guard against the respective evils affecting the trees; and the whole system is grounded upon the regular operations of nature in the productions of vegetation; the working, or laborious part, is expressed in so clear and concise a manner, that it can hardly be misunderstood; many of the thoughts are new, and the whole process well worthy the attention of the respective fruit-growers. Do not look for perfection; it is sufficient to come near it.

The Society has fully sanctioned the name of Orchardist, in page 211 of the 12th volume; and the author has advanced as an incentive, to induce every one to be careful in the culture of their trees, that he entertains no doubt, but by easy means after ten years, the improved

proved value of the orchards and standard fruit-gardens throughout the kingdom, must amount to an increased product beyond what they yield, at present of more than three hundred thousand pounds per annum; which most assuredly must be ranked as a national object.

The reader, in looking over the before-mentioned Transactions, should examine a short sentence in each of the prefaces; the index will point him out the other parts. The planter is referred to the 12th volume and continuations, with the proposed premiums, class 74, 75, 76, from page 22 to the bottom of page 25, in the 13th volume; but lest the books should not be at hand, a copy is annexed, shewing how the trees ought to be prepared for planting. According to the author's opinion, great part of the trouble and expence of pruning would be saved, if the heads of the trees were but looked to in time; and he expresses it thus:

Page 213. " The prevention of a disease is preferable to a cure, therefore, if possible, chuse the trees
 " the year before they are to be planted, and see that
 " they are properly pruned in the nursery, by taking off,
 " perfectly close, all rambling and unsightly branches,
 " leaving the heads to three or four good leading shoots.
 " From this forecast, the trees will not require pruning
 " for some time; and having no wounds to heal, the year
 " they are transplanted, will greatly accelerate their
 " growth. Be sure the trees are young; and do not
 " plant any galled, fretted, or cankered plants.

" Also guard against planting too deep; and when the
 " trees are taken up, keep the roots as long as is convenient, which will give them a disposition to run
 " horizontal; from which, the roots being more under
 " the

“ the influence of the sun, the sap is richer, and produces the sweetest fairest fruit.

“ Chuse the ground carefully, &c. Here landlord, tenant, and workman, should look to planting as expressed in the Transactions, and observe position; determining to establish shelter on the three cold sides of the freest growing trees which the country produces; which will much contribute to keep off the blights, and protect the fruit from the severity of the winds in autumn, when often half the crop of fruit is thrown from the trees before it is ripe.

“ All over redundant wood should be taken off, that the tree may have an uniform head; and the more the range of branches shoot circularly, a little inclining upwards, the more equally will the sap be distributed, and the better will the tree bear. Also keep the branches clear; for sunshine and shade are unalterably the cause of sweet and sour fruits.

“ It is perfectly within the nurseryman's art to produce all his standard fruit-bearing trees, with stems large and smooth, buds full and round, leaves broad and open, without the tree being much disposed to canker or gum; and this is given as the character of a valuable tree.”

For this, and Moss, see page 167, in the 13th volume; and a hint is given to “ desire the nurseryman to be attentive in his *grafts*; for more depends upon it than is imagined; as from the graft being full, well wooded, clear, and properly chosen, the fruit will be both larger and higher flavoured, though the soil and culture may be the same. Also, the health of the *wood* of the tree is most materially affected during the whole

“ time

“ time of the tree’s existence, by the proper maturity
 “ the scion was in at the time it was first entered into the
 “ flock.”

In page 270, is an abstract of the working, or laborious part, that it may be seen at one point of view: and let it be remembered, if the tree is well pruned, it continues of the same size after the pruning is finished, as it was before; “for the rule is, to keep the branches out of the reach of cattle, then let them follow their natural growth; for each species has a growth peculiar to itself. *For Medication, look to volume 12th.*

“ Abstract of Practice. Let every stump, the decayed
 “ or blighted branches, with all those which cross the
 “ tree, or where the leaves curl, be taken off close,
 “ smooth, and even; pare down the gum close to the
 “ bark, and rather a little within, but do not destroy
 “ the rough coat; open the fissures, out of which the
 “ gum oozes to the bottom; cut away the blotches, and
 “ pare down the canker; then anoint all the wounds
 “ with the medication, smearing a little over the can-
 “ ker which was not large enough to be cut; score the
 “ tree, and rub off all the moss, but do not shorten a
 “ single branch: follow the surgeon’s rule, go to the
 “ quick, and no more; act with observation, and each
 “ practitioner will improve the science.

“ A tree, under such care, *must*, with its remaining
 “ free shoots, run large; which requiring a great flow of
 “ sap, will keep the roots in constant employ; and
 “ from that very source, *necessarily* establish permanent
 “ health.”

THE END.

ERRATA.

Page 5, line 4, should be read as under :

By an exact account taken of Minster, in Thanet, January 1, 1794, there were found to be in that parish 149 houses, 696 inhabitants, viz. 359 males and 337 females: of these in 16 farm-houses, were 110 males and 57 females; and in 133 houses, inhabited by tradesmen, labourers, and widows, there were 249 males and 280 females. The average number of inhabitants, male and female, to each farm-house, &c. &c.

Page 6. line last, *for* washing, *read* waisting

8. l. 2, *for* cooks, *r.* lookers

22. l. 21, *for* compotent, *r.* component

28. l. 21, *for* called, *r.* call

Ibid. l. 22, *for* that, *r.* than

35. l. 15, *for* impropiator, *r.* impropiator

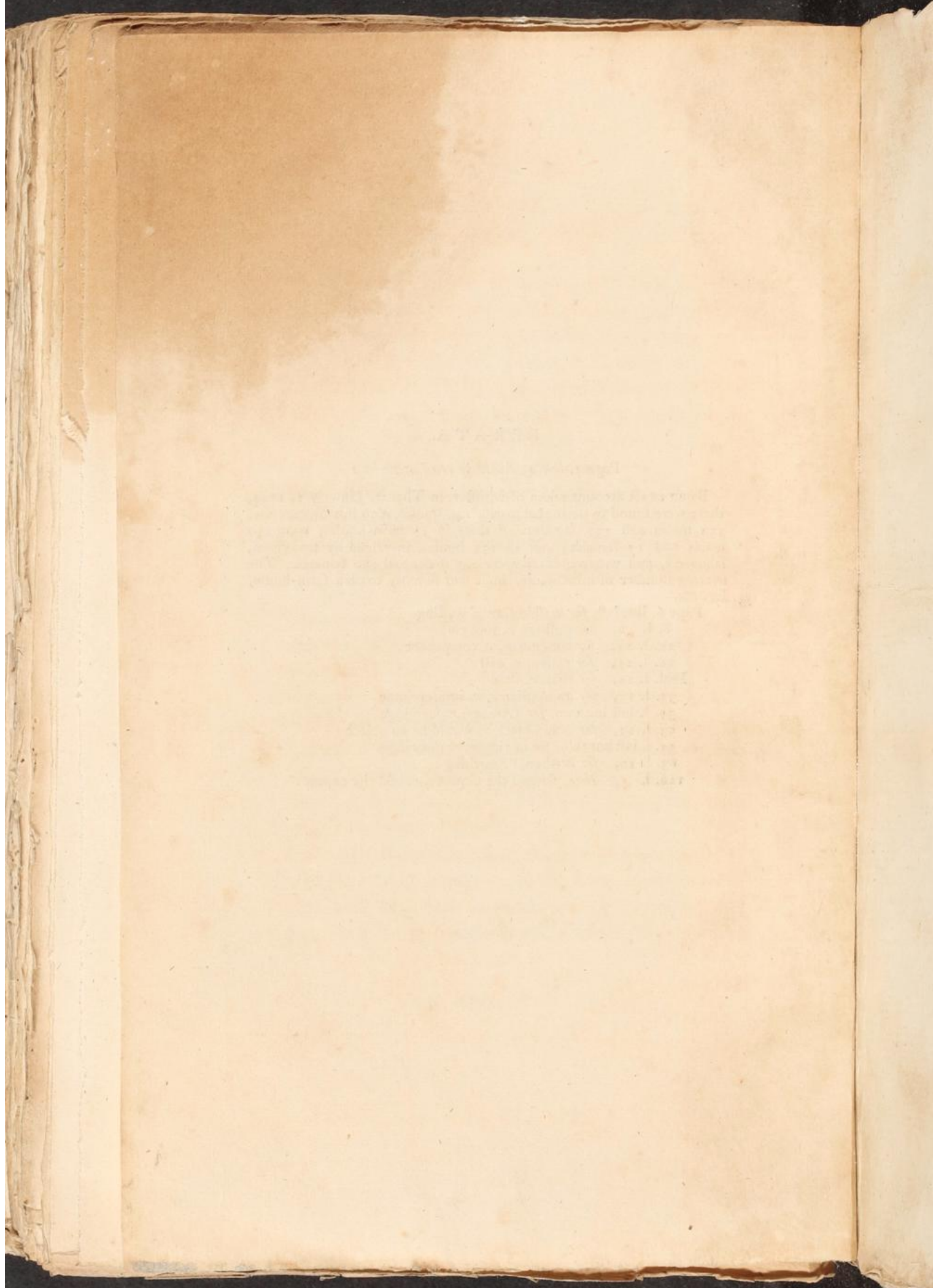
37. l. last but two, *for* Lymage, *r.* Lyminge

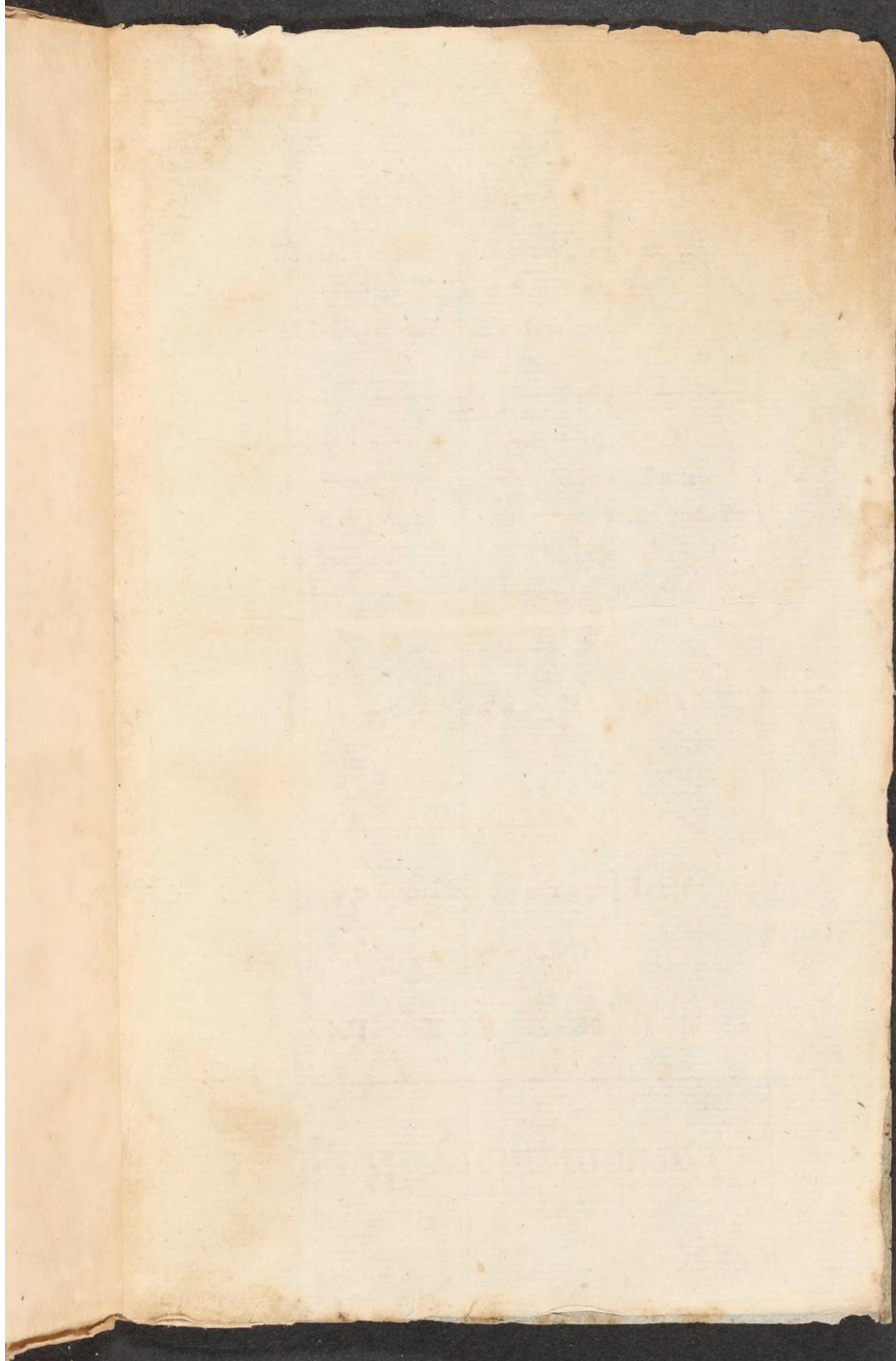
53. l. 13, *for* is an object, *r.* would be an object

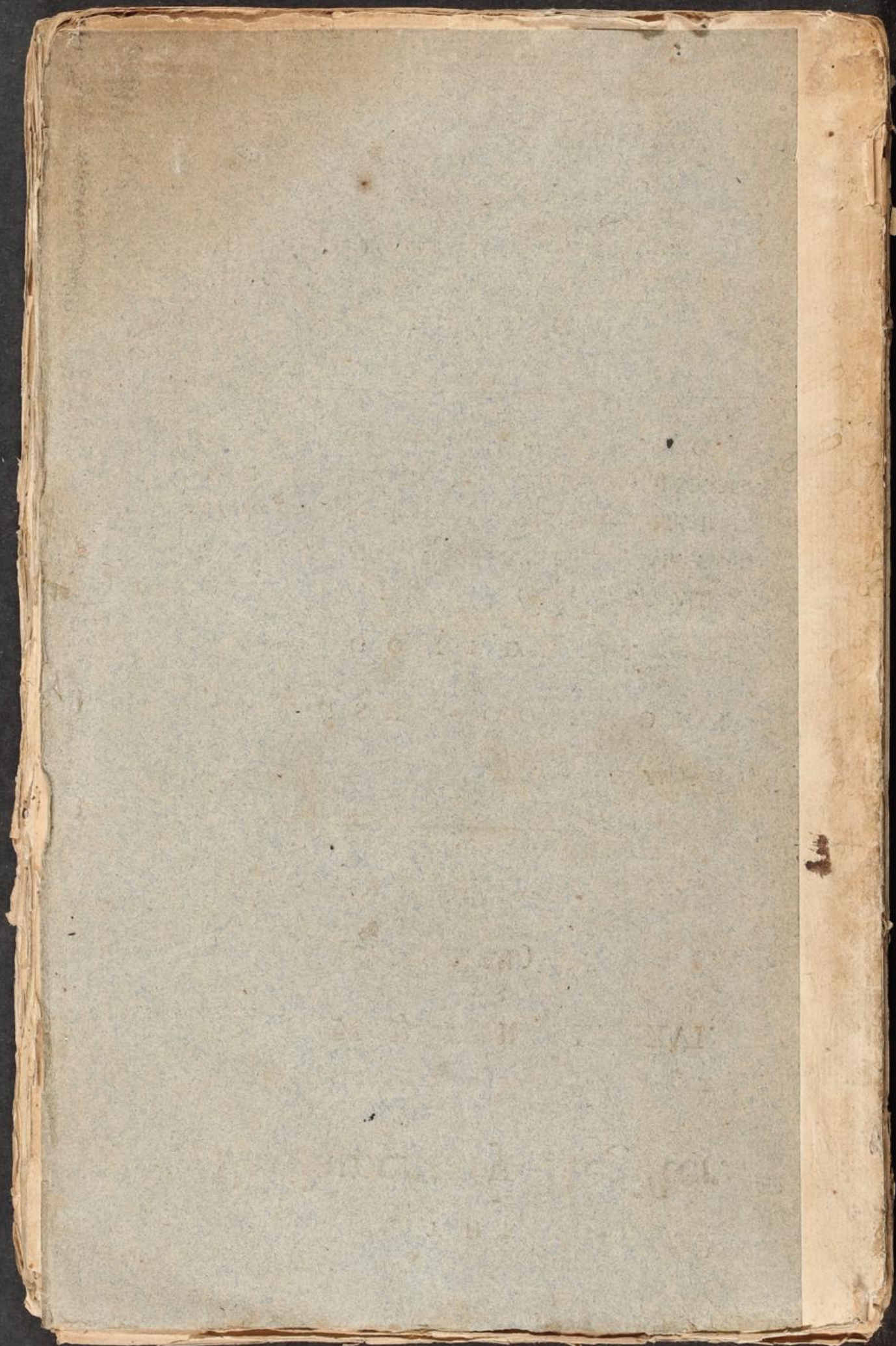
55. l. last but two, *for* or ridges, *r.* nor ridges

63. l. 10, *for* earthen, *r.* earthing

126. l. 5, *Note, for* and the expence, *r.* add the expence







563







