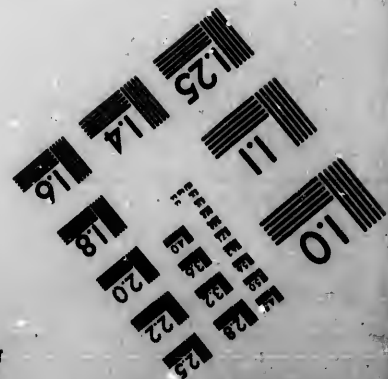
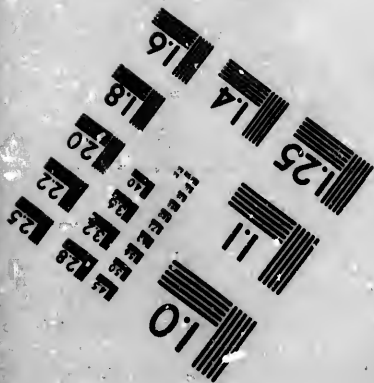
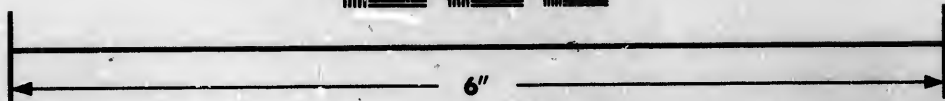
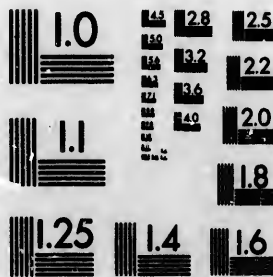


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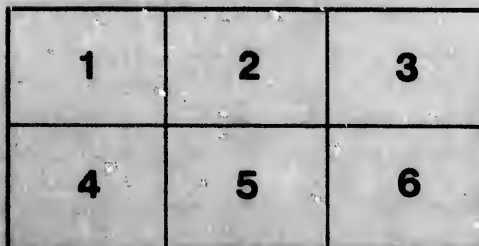
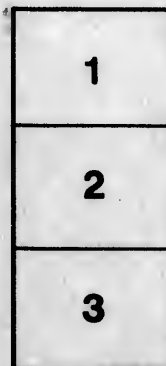
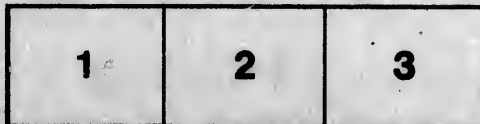
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O F
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O R
PLASTER OF PARIS,
A S
A M A N U R E;
CHIEFLY EXTRACTED FROM
P A P E R S A N D L E T T E R S
O N
A G R I C U L T U R E,
B Y T H E
Agricultural Society in Canada.

L O N D O N:

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ON THE
E F F E C T S
O F
GYPSUM OR PLASTER OF PARIS
A S A M A N U R E.

Extract of a Letter from a Gentleman in the State of Pennsylvania, to his Friend in Quebec.

“ Y O U have, inclosed, some account of the experiments and
“ use of the Gypsum or Plaster of Paris; if any further
“ communication be necessary you shall have it.

“ I see by an account of a late publication of Arthur Young’s,
“ he mentions it as being useful as a manure, but how far he has
“ published the use of it in England I do not know; as yet I have
“ not been able to procure a sight of his treatise.

“ This manure has produced a great revolution in agriculture.
“ The fine watered and banked meadows in this country, are no
“ longer held in the estimation they were; our dry poor uplands,
“ from the effect of this valuable and cheap manure, are infinitely
“ more productive and more valuable than the best low lands; I
“ mean for grass. In short, the value of farm-yard manure is also
“ much lessened, *for it is cheaper for the farmer to purchase the*

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“ plaster

“ plaster at two-thirds of a dollar per bushel for his grass-land,
 “ than to draw out his dung thereon.

“ This discovery exceeds credibility; it puzzles the philosopher, and astonishes the farmer. Indeed, it tells us all reasoning hitherto extended to the principles of vegetation, was without foundation, and that the human race are in a total state of ignorance respecting it.”

Experiments on Gypsum as a Manure.

In answer to your queries respecting Gypsum, or Plaster of Paris, I shall give you as full information as I can, consistent with my own and neighbour's experiments.

The best kind is imported from hills in the vicinity of Paris; it is brought down the Seine by water, and is exported from Havre de Grace. I am informed there are large beds of it up the Bay of Fundy, some of which I have seen nearly as good as that from France; but several cargoes brought from thence to Philadelphia, have been used without effect. It is probable this was taken from the top of the ground, and was, by the influence of the sun and atmosphere, dispossessed of the qualities necessary for the purpose of vegetation. The lumps composed of flat shining *specularis*, are preferred to those which are formed of round particles like sand; when pulverized and put dry in an iron pot over the fire, that which is good will soon boil, and great quantities of the fixed air escape by ebullition. It is pulverized by first stamping it in a stamping mill, and then grinding it in a common grist mill. The finer its pulverization the better; it will thereby be more generally diffused. It is best to sow it in a wet day; but if that is not convenient, it should be a little moistened, when you can sow it at any time. The most approved quantity for grass, is six bushels per acre. No art is required in sowing it, more than making its distribution as equal as possible on the sward of grass. It operates altogether as a top manure, and therefore should not be put on in the spring, until the operation of the frost is over, nor until vegetation hath begun. The general time for sowing it is in April, May, June, July, August, and even as late as September. Its effect will generally appear in ten or fifteen days, after which the growth of the grass will be so great as to produce a large burden at the end of six weeks after sowing. It must be sown on dry

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dry land, not subject to overflow. I have sown it on sand, loam, and clay, and it is difficult to say on which it has best answered, although the effect is sooner visible on the sand. It has been used as a manure in this State for upwards of twelve years. Its duration may, from the best information I can collect, be estimated from seven to ten years; for like other manures, its continuance must very much depend on the nature of the soil on which it is placed.—One of my neighbours sowed a piece of his grass ground six years ago—another sowed a field four years ago, a great part of my own farm was sown in May, 1788.—We regularly mow two crops, and pasture in the autumn. No appearance of failure, the present crop being full as good as any preceding. I have this season mowed about fifty acres of red clover, timothy, white clover, &c. which were plastered last May, July, and September. Many who saw the grass, estimated the produce at two tons per acre; but I calculate for the two crops three tons. Several strips were left in the different fields without plaster, these were unproductive, and not worth mowing.

In April 1788, I covered a small piece of grass ground upwards of two inches thick with farm-yard manure in the same worn-out field. I sowed plaster to contrast it with the dung—I mowed the dunged and plastered land twice last year, and once this: In every crop the plaster has produced the most. You will remember in all your experiments with clover, you should mix about one third timothy grass seed; it is of great advantage in serving as a support for the clover, as it prevents it from falling; it very much facilitates the airing of the clover, and when aired is a superior fodder. The plaster operates equally as well on the other grasses as on clover. Its effect is said to be good if sown in the spring on wheat; but this I cannot say from experience. On Indian corn I know its operation to be great. We use it at the rate of a table spoonful for a hill, put on immediately after dressing. From some accurate experiments last year, and reported to our Agriculture Society, it appears, that nine bushels of additional corn per acre was produced by this much of plaster.—As the use of this cheap and extraordinary manure has now become very general in this State, and many accurate and judicious farmers are now making experiments therewith, I doubt not but its uses at the close of the season will be better known, and further extended; when I shall be happy to make a communication thereof to you.

Experiments, &c. on the Plaster of Paris, made in the Province of Pennsylvania—communicated by a Gentleman in Quebec, Member of the Agricultural Society.

Copy of a Letter from ROBERT MORRIS to JESSE LAWRENCE.

“ AFTER the conversation which passed between thee and me, on the subject of Plaster of Paris, I conceived it might not be improper to give thee an account of the several trials which I have made with it as a manure for land. Perhaps it might have been in the year 1775, that it was recommended to me as a manure for land; I accordingly purchased five bushels, yet my faith therein was so weak, that it lay by me until 1778, when in the month of March, I sowed at the rate of $2\frac{1}{2}$ bushels per acre, on some ground which I had tilled and sowed with clover feed the spring preceding, leaving a piece in the middle not sown, and likewise on each side. That season, where there was no plaster sown, the clover stood on the ground about 12 inches high; but where the plaster was sown, the clover stood upon an average 34 inches high. This ground I sowed for about four seasons after; I found it to have less grass every year, though that which was sown with the plaster, had as much more in proportion as the first year. I afterwards ploughed up all this ground except $\frac{1}{4}$ of an acre; upon this I again put Plaster of Paris in the year 1785, and no other manure whatever since 1778, and it is now in much better order than it was at that time, and it has produced me about two tons of hay every year since, for the first crop, and a tolerable good second crop, and sometimes a third crop, or very good pasture; though the last time I manured it, I put in the proportion of six bushels of plaster to an acre. I have likewise made many experiments otherwise; I have tried it with Indian corn, where it does tolerably well; with buck-wheat, and it makes it grow so rapidly, that it has always fallen down, and I have lost my crop. I have tried it with wheat, and it is not possible to discover that it makes any difference when sown on the crop; but when it is sown on grass ground, and this ground turned up and laid down in wheat, it is amazing the advantage it is of to the crop. Last fall was a year, I put down about eight acres of wheat, which I harrowed in, and then sowed clover seed, which came up and looked very fine in the fall; but the winter being very

very severe, with but little snow, the clover was dead in the spring; when I sowed it again with clover seed, and about six bushels of Plaster of Paris to the acre, and by harvest time I had clover all over the piece, above 12 inches high, and which I mowed in about two or three weeks after my wheat was cut; I believe I might have cut a full ton of hay off from each acre, and I am well satisfied, that if I had not put any Plaster of Paris on it, I should not have had any grass that I could have cut.—I have likewise sold this manure to many people in this State, as well as in New-Jersey, Maryland, Delaware, &c. and after trial, their applications to me have been very great, which induces me to believe they have found the like benefits from the use of it as I have myself.

With respect, I am thy friend,

ROBERT MORRIS."

Philadelphia, Feb. 15, 1789.

I, CLEMENT BIDDLE, Esq. Notary Public for the Commonwealth of Pennsylvania, duly commissioned and qualified, do certify, that ROBERT MORRIS, miller and farmer, of the county of Philadelphia, by whom the foregoing writing certified by him in his hand-writing, to me well known, is a person of good character and reputation, and that I have been on his farm, and have seen great appearance of improvement in the produce thereof, from the use of Plaster of Paris, and am of opinion, that credit is due to his certificate before written, relative thereto. The said Plaster of Paris came from Nova Scotia, and is of great repute.

In testimony whereof, I have hereunto set my hand, and fixed my notarial seal at Philadelphia, this 18th day of February, 1789.

(Signed)

CLEMENT BIDDLE, Notary Public.

*Copy of a Letter from Mr. H. Wynkoop, of Verden Hoff,
Bucks County, Pennsylvania, 13th August, 1787, to the
President of the Agricultural Society at Philadelphia.*

“ S I R,

“ CONVINCED of the utility of the Plaster of Paris as a grafs manure, I communicate to you for the information of the society, an experiment which I lately made. In the month of March last, as soon as the snow was off the ground, and so settled as to bear walking upon the surface, I spread eight bushels of the Plaster of Paris upon two and a half acres of wheat stubble ground, which had been sown the spring before (in common with the rest of the field) with about two pounds of red clover seed for pasture; this spot yielded about the middle of June five tons of hay. A small piece of ground within the enclosure, and of similar quality, having been left unspread with the Plaster, afforded an opportunity of distinguishing the effects of plaster of Paris as a manure; for from the produce of the latter, there was good reason to judge that my piece of clover, without the assistance of the plaster, might have yielded one and a half tons of hay; so that the eight bushels of the pulverized stone must have occasioned an increase of three and a half tons of hay upon two and a half acres of ground, in addition to which it is now covered, to appearance, with between two and three tons fit for the scythe. This soil has been in course of tillage about fifty years, and never had any dung or manure upon it, but yet was what might be called good wheat land. As the effects of the plaster were thus powerful upon such kind of ground, there is good reason to conclude they would be much greater upon a soil previously manured.

With due respect, I am, &c.

(Signed)

To the President of the Agricultural
Society in Philadelphia.

HENRY WYNKOOP.”

I do

I do hereby certify, that the above named HENRY WYNKOOP, is a person of undoubted good character, and worthy of credit; and I do also further testify, that the Plaster of Paris is much used as a manure in the neighbourhood of Philadelphia, and that it is generally held in high estimation by those who have tried it as a manure.

(Signed)

Philadelphia, June 30, 1789.

SAMUEL POWELL,

President of the Agricultural Society.

Letter on the Use of Plaster of Paris as a Manure, taken from a Publication, entitled, The American Museum.

HAVING, for four years past, made use of a large quantity of Plaster of Paris, or Gypsum, as a manure upon a variety of soils, and under different circumstances—I beg leave to lay before you the result of my experiments, together with some observations, respecting the nature of this fossil. I am the more anxious to comply with my duty to the society in this respect, because many of our fellow-citizens are losing the great advantage to be derived from the use of this manure; entertaining an opinion, that it does not, in itself contain any nutriment to plants, but that it acts merely as a stimulus to the soil, by which, although vegetation is for a short time rapidly promoted, yet the ground becomes exhausted, and is left a dead inert mass.

1. In the year 1785, I sowed three acres of light soil, containing a little clay, with barley and clover. In the month of April, the following year, I divided the field into three parts, and strewed six bushels of French Gypsum on No. 1; the same quantity of the American Gypsum, brought from the bay of Fundy, on No. 2; and left the intermediate space, No. 3, without any. On cutting the first crop, that year, little difference could be observed; the second crop produced double the quantity of grass, where the Gypsum had been put; and the succeeding year, the difference was still greater in favour of this manure.

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Early in October 1787, the clover lay was ploughed once, about four inches deep, was sowed with rye, and in that rough state was harrowed. The rye was of a superior quality, and double the quantity on No. 1 and 2, of that on No. 3. After harvest, the rye-stubble was ploughed, and sowed with buck-wheat, when a striking difference was still observable in favour of the Gypsum, and which continues in the present crop of Indian corn.

2. In April, 1787, I sowed three acres of potatoe ground (a light loam) with barley and clover. Just as the barley was above ground, some Gypsum was strewed diagonally across the field, about eight feet wide. Little or no difference could be observed in the barley; but in the month of September following, there was a striking difference in the clover, in favour of the manure, which would have afforded a good crop of hay, whilst the remainder of the field was but indifferent. I have frequently put Gypsum upon grain, without observing any immediate difference in the appearance of the crops.

3. In April, 1786, six acres of poor singlass soil, situated on German-Town hill, were sowed with oats; the ground not having been manured for twenty years, it produced a crop not paying expenses. In April 1787, one half of the field was covered with Gypsum, six bushels to the acre. The latter end of the same summer, that part, on which the manure had been put, produced good pasture of blue grass and white clover, whilst the remainder afforded little but a few scattered weeds. In October, the field was ploughed once, and sowed with rye; at harvest, the former produced ten bushels to the acre, the latter not above five.

4. A field of fifteen acres, a light loam, was, in April, 1784, sowed with barley and clover, the produce only twenty bushels to the acre, the ground not having been sufficiently manured. In 1785, it produced a good first, and a tolerable second crop of clover. In 1786, the first crop but tolerable; the second very indifferent, and therefore pastured. In the spring 1787, I wished to try if Gypsum would not renew the clover. In the month of April, the whole field was covered with Gypsum, six bushels to the acre, except the width of twenty feet, through the middle of the field. St. John's wort, mullain, and other weeds had taken such possession of the ground, that, although the manure produced a great luxuriance of grass, yet, being full of weeds, it did not answer for hay; and therefore was pastured until October, 1788:

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the whole was then ploughed eight inches deep, with a strong three-horse Dutch plough: last April, it was well harrowed, and cross-ploughed, four inches deep, with a light two-horse plough, leaving the sod at the bottom. The field was sowed with spring barley; at harvest, the difference of the crop was astonishingly great in favour of the part where the Gypsum had been put, two years before. This ground is now under wheat and winter-barley, which have a promising appearance: the rotted sod being turned up and mixed with the soil, affords a strong nourishment to the present crop.

5. I put a quantity of Gypsum, three years ago, on several small patches of tough sod; it produced a difference in the strength of the vegetation, which is still observable.—From the above recited experiments it appears—

1st. That there is no difference between the European and American Gypsum.

2d. That Gypsum acts as an immediate manure to grass, and afterwards in an equal degree to grain.

3d. That one dressing will continue in force several succeeding crops.

Gypsum not producing any remarkable beneficial effects, when used as a top dressing to grain, may arise from two causes; first, from the small quantity made use of, which is lost in the rough ground; and secondly, from the short time of its application. It has been found of advantage to Indian corn, but in this case, it is absolutely necessary to apply it immediately to the corn, as it appears above ground, and that in a considerable quantity—I have put it on grass ground every month in the year, except during the severity of winter, and have found, that early in April is preferable to any other season; at which time, the grass just shooting, the small particles of the gypsum are detained about the roots, and prevented from washing away. On stiff clay soils, it will produce an increase of vegetation, but not sufficient to pay the expense of the manure.

It may be difficult to point out the origin of Gypsum, or to ascertain clearly the principle, on which its nutritive quality of vegetables

getables depends : we shall, however, with diffidence, submit our conjectures on this subject, to the consideration of the society.

Gypsum, which has acquired the name of Plaster of Paris, from its abounding in the neighbourhood of that city, is of a stony nature, yet soft, and easy to be scraped with a knife. It is found in many parts of the earth, in very great quantities, forming hills of a considerable extent, as in the vicinity of Paris, in the Bay of Fundy, in Russia, and in many other parts of the world. It is found under different appearances.

1st. Crystallized into transparent plates, which can be easily separated with a knife, and which in some parts of Russia, are said to be so large, as to answer the purpose of glass.

2d. Of a fibrous texture, and composed of oblong concretions, lying across the mass.

3d. Composed of small crystalline grains ; this species is called alabaster, when it has a hardness capable of receiving a polish.

In Mont Martre, near Paris, all the above varieties are found, and also a stratum of a less perfect matter, filled with small shells ; a specimen of which, I have in my possession : I have also a beautiful specimen of the crystallized Gypsum, lately brought from the Bay of Fundy.

All kinds of Gypsum, however different in exterior form or appearance, have a perfect resemblance in their chemical and essential qualities.

It is generally allowed, that Gypsum is principally composed of calcareous earth, but it is not so well ascertained with what substance it is united, which prevents it from having the power of quick lime, when burnt. Regarding calcareous earth, as forming the basis of this substance, it may be necessary to take notice of the different forms under which calcareous earths appear.

That which is in the greatest quantity, and properly called calcareous, is distinguished from the rest by the effect which fire has upon it, in converting it into a quick lime ; all others should rather be termed alkaline absorbents. Calcareous earth appears in a variety of forms ; there are very considerable strata of it in
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the bowels of the earth, as marble, lime-stone, and chalk, which differ only in the degree of purity, or mode of concretion.

It is often found in veins, filling up the rents or cavities of mountains, and is called calcareous spar; some of which contain a quantity of this earth, but not in a pure state: some are perfectly transparent; and from being found in Iceland, are called Iceland crystals.

The matter with which vegetable and animal substances are incrufted, or penetrated by the waters of particular springs, so as to retain their external form, but lose their nature, and become stone, is generally of this kind; and shews that this earth is capable of being dissolved by water, and being introduced into the texture of animal and vegetable substances. This earth also produces the large and pendulous columns and cones that are found hanging from the roofs of large caves, as in Derbyshire.

The stoney shells of all crustaceous animals, from the coarsest, to the coral and pearl, are composed of this earth, and a small quantity of animal glue. A viscid fluid proceeds from the surface of the animal, which becomes a tough membrane, and gradually hardens into this form. The shells of all kinds of animals, together with all coralline concretions, consist of the calcareous earth, united with a small proportion of animal glue.

Marl is an alkaline earth, but cannot be converted to quick lime: it is composed of calcareous earth and clay: and its value, as a manure, is estimated in proportion to the quantity of calcareous earth which it contains. Marls assume a variety of colours, but are properly divided into shell and stone marl.

Shell marl is composed of the shells of shell-fish, or other aquatic animals, which are sometimes entire, and often decayed, or mixed with other earthy substances.

Examining this matter, as occurring in different places, it may be distinguished into fresh-water marl and the marl of sea-shells. The first is composed of a small fresh-water wick or snail: this animal, when alive, is not easily discoverable, the shell being much of the same colour as the stones covered with the water: but great numbers of them are to be found in many small brooks,
particulary

particularly in their passage through the low wet grounds: as the animal dies, the shell is deposited.

The second, composed of sea-shells, constitutes much greater collections, and is found in innumerable places now far removed from the sea. That, most particularly described by naturalists, is a collection of this kind in Touraine, a province in France. The part of the country, where it is found, contains several square-miles of surface; and wherever they dig to a certain depth, they find this collection of shells, composing a strata of twenty feet thick. The country at present is one hundred and eighty miles from the sea.

The stone or clay marls bear more or less resemblance to clay; they are very various in their colour and other appearances, but agree in containing a quantity of clay united with calcareous earth, so as to effervesce with acids—the stone marls are harder than the clays, but upon being exposed to the action of the sun and frost, they crumble into powder, which is easily mixed with the soil, though some of them require a very long time before they are divided fine enough to be completely mixed with it.

These are the principal forms in which calcareous earth is found. They all derive their origin from the calcareous matter of shells; for we find relics of shells in by far the greater number of lime-stones, chalks, gypsums, and marbles.

From the natural history of these fossils, and their effects in promoting vegetation, we may conclude that they contain in themselves a certain nourishment to plants, arising from a concentration of the animal glue existing in their original state of shell-fish.

Too much pains cannot be taken to engage our farmers generally in the use of these valuable manures.

RESOLVED, as there are very extensive beds or quarries of plaster stone in several parts of the gulph of St. Lawrence, steps be taken by the secretary to procure a small quantity from
different

different places in the gulph, that proper trials may be made of its efficacy as a manure, to be communicated to the public, if it succeeds, recommending to those who may be employed to procure the Gypsum or plaster stone, to distinguish that which may have been exposed to the spray of the sea or overflowed by the salt water, from that which has never been wet but with the rain.

AGRICULTURAL OBSERVATIONS.

As the improvement of agriculture ought to be the object of every country, so the knowledge of every useful discovery should be communicated to the people :—the following extracts of letters, received from a gentleman of veracity, and a considerable farmer for many years in Pennsylvania, may therefore deserve particular attention.

Extract of a letter from Philadelphia, dated Sept. 16, 1788.

“ For the information of the farmers in Great-Britain, I acquaint you, that nine bushels of Plaster of Paris, ground fine, and sowed on grass-ground, proves in this country preferable to any other species or quantity of manure : on sandy or loamy land it answers best ; hundreds of our farmers make use of it. I have made experiments on upwards of fifty acres in different parts of my farm, and all have succeeded beyond any manure I ever saw. The spring of the year has been esteemed the best season for sowing it ; but I have sown it in March, April, May, June, July, August, and I know no difference in its effect. You will observe it is only a top manure, therefore must be sown on a sward of grass : it is peculiarly good for white and red clover : it may be broke by hand, and afterward sifted, but we stamp it, and then pass it through our mill-stones ; it must not be calcined. The effect is truly astonishing, and baffles both the farmer and the philosopher. An old field of mine, in which I had wheat last year, was sown with the Gypsum about ten days after harvest ; early in September I cut from it upwards of two tons of clover per acre, which was sown on the wheat in March. Pray prevail on some of your gentlemen farmers to make the experiment.”

Pennsyl-

Pennsylvania, June 1. 1790.

“ I wrote to you some time ago, respecting our manuring with the Plaster of Paris : I have now experienced it upwards of three years ; others have used it upwards of fifteen : it exceeds any thing ever known. Pray prevail on some person to sow a small quantity of red clover in a dry soil ; a few days will evince its power. Six bushels to the acre I use, and it is preferable to fifty loads of the best dung. This you must think extravagant ; it is so, and yet true. I have contrasted it for three years with dung in that proportion, and the result is my assertion : I have upwards of one hundred acres now under plaster, applied in various ways, and on different soils ; it has in no instance failed ; the last I made, I shall relate as follows :

“ In April 1789, I ploughed the end of a poor sand hill, which by long and bad culture had been totally exhausted ; it contained no grass, but was covered with wild onions ; the next day, after ploughing, I sowed it with oats, clover, and timothy ; when the oats were a few inches high, I sowed a strip through the middle of the field with plaster ; the ground being poor, the oats were not knee high at harvest ; the clover where the plaster was not sown, was very small and poor ; but the strip on which the plaster was sown, produced clover near as high as the oats. As soon as the oats were cut, I sowed all the stubble with plaster ; in October the ground produced upwards of a ton and an half per acre ; and I now think the crop superior to the best acre you ever saw.

“ The land I sowed three years ago, I mow twice, and pasture the bad crop ; not the least failure yet appears : I intend to renew a part of it, by way of experiment, with three bushels of plaster per acre, after my first mowing, which will be in eight days.

“ It is generally esteemed to continue good from five to seven years ; it is much used in this country, and is travelling Westward and Eastward. I saw last week several fields done with it near Reading, in this State, about sixty miles from the river. A spoonful on a hill of Indian corn, will increase the quantity about ten bushels per acre, and it is found to ripen two weeks earlier. The grass as well as hay raised from it, is found more nutritive than any other ; so much so, that cattle fatten in near half the time. Were I to write a volume, I could not tell you all its advantages.”

The

The soil of the plantation of the above writer is a loam, more or less mixed with sand, having a few inches of black mould on the surface, and not a cold clay.

The Plaster, generally made use of in the United States of America, is imported from Havre de Grace, and some from Halifax in Nova Scotia, but of a much inferior quality, unless got at a certain depth. The plaster is found in Yorkshire, and in some other parts of the kingdom, but whether equal in quality to that in France, experiments will discover.

An Account of the Use of Gypsum as a Manure.

Extract of a Letter from a Gentleman in America, to his Friend in London.

I intended to have given you an account of the use of Gypsum, or what is generally called Plaster of Paris, as a manure, and the effects of it at large, but this I must defer to another opportunity; at present I shall only say, that it is the cheapest and most effectual manure yet discovered; six bushels are quite enough for an acre. It must be first pounded in a stamping mill, and then ground in any common grist mill; the finer it is pulverized the better; it must be ground unburnt. The method of putting it on the land is by sowing it in the broad cast as you sow wheat: the only care necessary is to make the distribution as equal as possible. The experiments that have been made of it in America, have been chiefly on grass; it is sowed on the sward as soon after vegetation has commenced as you please, and after that till September; it is best to sow it in a drizzly day, but if sown in a dry day it ought to be moistened before it is sown, to prevent its blowing away, and the distribution being unequal.

The effect of it will shew itself in six or seven weeks; and the product from heretofore unproductive land, will be at least two tons

tons per acre. It is almost equally good on all kinds of soil, sand, clay, or mould, but it shews itself soonest on sand. Its continuance is from six to ten years, according to the nature of the soil, like other manure. Many experiments have been made; half of a field has been sown with this plaster, and the other half covered two inches thick with barn door manure, and the plastered has been found most productive; on Indian corn the increase by plaster has been eight bushels per acre, by only putting one table spoonful on a hill. There is no kind of doubt but it will equally well answer the purpose on wheat, if sown in the fall, or early in the spring, when vegetation has commenced. The utility of this manure, and the cheapness of it, has in Pennsylvania depreciated the value of barn manure, as it is found much cheaper to put on this plaster, than to cart the manure from the barn to the fields. On cabbages and turnips it is equally effectual.

By the use of this manure the uplands, which were worn out, and from their sandy texture, were abandoned, have now become more valuable than the finest intervals, or bank meadow lands. In Pennsylvania, from sandy heights they annually cut two crops of grass, the first yields two tons, and the latter one; and after six years the produce has not abated.

You well know the lands in Pennsylvania, opposite to Trenton, which are naturally sandy, and soon worn out; those lands, from the use of the plaster, now give the above crop, and some of them have been plastered upwards of six years past, and there is yet no diminution of the product.

The plaster used in Pennsylvania, as procured from hills in the neighbourhood of Paris, and when pulverized and fit to sow, is worth two-thirds of a dollar per bushel; some has been used there that was collected at Nova Scotia, which was found equally strong and good, while other parcels that were carried from Nova Scotia, was almost unproductive. The reason most probably was, that it was taken from the surface, where, by being exposed to the frosts, atmosphere, &c. &c. it had lost its virtue. What the properties are that give it this amazingly vegetable and nutritious quality, I must leave to you and other naturalists and philosophers to discover; the facts I give you, and leave you to assign the cause.

I hope

I hope to see the use of it introduced into England, and I have no doubt, but in a few years, our barren heaths will be turned into fine grass lands, and the present invaluable part of the kingdom be made useful. The best kind of the plaster is that which has shining flat specula in it.

F I N I S.

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