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ON THE

# IMPROVED BEET ROOT,

OR .

MANGEL WURZEL.



# IMPROVED BEET ROOT,

AS

## WINTER FOOD

FOR CATTLE.

BY PINDER SIMPSON.

THE FOURTH EDITION.

## LONDON:

Printed by J. Swan, Fleet Street,

AND SOLD BY TAYLOR AND HESSEY,

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1815.

1813



## JOHN HEATON, Esq.

OF

## BEDFORDS,

IN THE COUNTY OF ESSEX.

AS A TESTIMONY OF GRATITUDE

TO HIM,

FOR THE LONG AND FAITHFUL FRIENDSHIP

WITH WHICH

THE AUTHOR HAS BEEN HONOURED,

THIS TRACT IS INSCRIBED,

AND OBEDIENT SERVANT,

PINDER SIMPSON.



## ADVERTISEMENT.

The following observations, experiments, and calculations have been made upon the crops of Improved Beet Root, grown upon a farm at Bedfords, in the county of Essex, containing 600 acres, belonging to John Heaton, Esq. and in his own occupation. The best mode of cultivating this valuable root, with the greatest prospect of success, is a subject well worth the attention of farmers in general, and to those in particular who have strong soils to cultivate, and feel the want of green food for their cattle and sheep in the winter and spring months of the year.

Since the first edition of this little work was published, the Author has obtained many new lights upon the subject, which he has either embodied in the present edition, or published

#### ADVERTISEMENT

in an Appendix. The contents show sufficiently to whom his principal obligation is due, and he is restrained only by motives of delicacy from saying more. The circulation of the work was intended to have been chiefly confined to a few of the inland counties, but the encouragement the Author has received, and which he respectfully acknowledges, has induced him to publish a fourth edition, for more general circulation.

Cheese Cross, Romford. Jan. 1, 1815.

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AND

## FARMERS.

HAVE ENCOURAGED THIS PUBLICATION.

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# IMPROVED BEET ROOT.

AS

## WINTER FOOD FOR CATTLE.

### CHAP. I.

THE garden at Cheese Cross produced a fine crop of the Improved Beet Root. The roots, when about the size of a radish, were thinned out with a turnip hoe, leaving the plants nearly 15 inches apart each way. I selected 60 square yards, 6 by 10, and found the produce to be 360 roots, equal to

29,040 roots upon an acre. They weighed from 1 pound to 12 pounds each, and 10 of them, taken up indiscriminately, weighed 40 pounds. Supposing them, therefore, to average 4 pounds each, the weight upon an acre would be something more than 50 tons. One hundred weight, cut into small pieces for the cattle, measured 2 bushels. The quantity per acre may therefore be estimated at 2000 bushels, 2 bushels are given to each bullock daily: 196 bushels, the produce of only about a tenth part of an acre of garden ground, planted in this way, would keep a bullock 14 weeks.

In Mason's field, on the road from Bedfords to Havering, another fine crop was obtained. The roots, when about the size of a radish, were taken out of the seed bed, and planted in rows, 3 feet asunder, and the plants were about 18 inches apart in each row. I selected 60 square yards, 6 by 10, and found the produce to be 126 roots, equal to 10,164 roots upon an acre. These roots weighed, on an average, 5 pounds each, so that the weight upon an acre would be something more than 22 tons. Each bullock eats I cwt. per day. The produce of 1 acre of ground, planted in this way, would keep 4 bullocks feeding for 110 days.

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In another part of the same field, on the road from Bedfords to Havering, the seed was dibbled in rows, 2 feet apart, and the plants were left 12 inches apart in each row. I selected 60 square yards, 6 by 10, and found the produce to be 270 roots; equal to 21,780 roots upon an acre. These roots average a little more than 5 pounds each. The weight upon an acre would therefore be something more than 48 tons. Each bullock eats 1 cwt. per day. The produce of 1 acre of land, planted in this way, would keep 10 bullocks feeding for 97 days.

### CHAP. II.

This is the third year that Mr. Heaton has cultivated the improved Beet Root with great success, in three different ways; namely, broadcast on ground under garden culture; and, in the field, by dibbling in the seed, and transplanting the roots. The result fully justifies a preference in favour of dibbling in rows 2 feet apart, as will be seen by the following short statement of the produce obtained under each mode of culture.

Broadcast, on strong land, PRODUCE. spade-trenched, 10 inches deep, leaving the plants after hoeing nearly 15 inches apart each way. ....

50 tons per acre.

Transplanted in rows 3 feet apart, and the plants about 18 inches apart in each row,

22 tons per acre.

Dibbling the seed in rows 2 feet apart, and the plants left 12 inches apart in each

48 tons per acre.

A good crop may be obtained by the broadcast method upon deep, loose soils, or upon strong soils spade-trenched, 10 or 12 inches deep: but by that mode much seed is wasted, and much extra expence incurred in labour, hoeing, and transplanting, before the plants are placed 15 inches apart each way, which is very material to insure a good crop, under that mode of culture.

### CHAP. III.

To those who may have been in the habit of cultivating the Swedish turnip, it may be desirable to point out the advantages which the improved Beet Root has over that turnip. Mr. Heaten had last year, in his Havering Green field, the best crop of Swedish turnips that I have ever seen, upon his farm, during twelve years' attention to the management of it; and his intelligent agent and farmer, Mr. Henry Gibbons, assures me, that he did not see a better

crop between London and Derby, from which latter place he returned in December last.

The Swedes in this field were drilled in rows 24 inches apart, and the plants were left about 9 inches apart in each row. I selected 60 square yards, 6 by 10, and found the produce to be 252 turnips, equal to 20,356 upon an acre. I weighed many of them, and found them from half a pound to 6 pounds each, averaging 2 pounds. The weight upon an acre would, therefore, be something more than 18 tons: less by 30 tons than the produce of an acre of the improved Beet, dibbled in rows 2 feet

apart, and the plants left 12 inches apart in each row.

The improved Beet has other material advantages over turnips. The crop is more certain, as the infant root is not injured by the fly; the ground may be cleared in time to sow wheat upon it, and the Beet attaining perfection, as it does, before the winter sets in, much labour and all the difficulty of getting and carting turnips in bad weather are saved to the farmer.

A bushel of the sliced Beet weighs 6 pounds heavier than a bushel of Swede turnip sliced. Two bushels of it per day satisfies a bullock better than 2 bushels and a half of Swedes; and it is well known, that 2 bushels and a half of Swedes are better than 3 bushels or common turnips. Sheep are fond of the improved Beet after Christmas; so are pigs, young cattle, and cows; and, with hay or straw, it will be found excellent food for young horses. For milch cows, the Beets have a decided advantage over turnips. Turnips, from their rankness, spoil the cream and butter; Beet, from its peculiar sweetness, improves both.

It is strongly recommended to the farmers near London to cultivate this root, and to the cowkeepers in London to consume it: to them it will be found of great value.

Since the above was written, the Author has been favoured with the following information, from a Friend, who left his crop in the ground till spring.

"My Beet in the Old Yard has stood the late severe frost better than any common turnips, and perhaps equally well with the Swedes, very few indeed being injured. Some of them were covered with snow, but others were exposed. They were rather small, having been planted so late as June." I. K.

<sup>&</sup>quot; Feb. 23, 1814."

### CHAP. IV.

For the information and guidance of those occupiers of land, who may be desirous of cultivating the improved Beet Root upon strong land, the next Chapter will contain a particular account of the method used in cultivating that root upon strong land at Bedfords. The method there stated, is that which has been found, on three years' trial, to be least expensive in the beginning, and most profitable in the end.—

The cultivation of this root is earnestly

recommended to the attention of all persons farming strong lands with a view to profit. It should never be forgotten, that 48 tons, the produce of only a single acre, of this root, will make 10 bullocks fat enough for the butcher; and that 6 acres, of equal produce, will fatten 60 bullocks; that the profit on each bullock will be considerable; and that when the business of feeding is over, the yard will be full of rich dung: neither should it be forgotten, that the tenant who sells his straw, cannot partake of any of these advantages.

In proof of this assertion, the following facts are submitted for consideration:

Mr. Heaton bought two lean Welch bullocks, at Harlow Bush Fair, on the 9th of September. They cost together £34. They were pastured on the Rowens till the 20th of November following, when they were tied up, and fed with Beet Root and oat straw till the 9th of February following, when they were sold together, in Romford market, for the sum of £50; yielding in twenty-two weeks, a profit of £16, which is equal to 7s. 3d. per week, for each bullock.

These two bullocks were tied up twelve weeks each, in which time they ate eight tons 2 cwt. of Beet Root, the produce of only one-sixth part of an acre of land, cultivated according to the method recommended in the following chapter.

### CHAP, V.

THE METHOD HERD IN THE CULTIVATION OF THE IMPROVED REET ROOT UPON STRONG LAND AT REDFORDS.

IT may be proper, in the first place, to state what is meant by strong land. The surface soil is loamy, and from 4 to 12 inches deep, upon a bed of strong clay mixed with gravel. It is too heavy, and generally too wet, in the winter, even for sheep to eat a crop of turnips on the ground; and although good turnips are grown upon it, it is always necessary

to draw them for the sheep, stall-fed cattle, or for cattle in the yards. The ground is prepared to receive the seed, and cleaned in the same way as it would have been for Swedish turnips. As that part of the business is so well known to all farmers, it is not necessary to enter into detail upon it.

In the middle, or latter end of the month of April, the furrows are set out with the plough, 2 feet apart, and double ploughed; that is, the plough returns on the furrow to the point whence it set out, forming a ridge between each furrow.

Double ploughing with a common plough is preferred to single ploughing with a double mould board plough, because it affords a greater depth of loose earth than the double mould board plough would produce.

In these furrows, the manure, which should be in a rotten state, is deposited, after the rate of six cubic yards to an acre.

The ridges are then split by the plough going and returning the same way as before mentioned, leaving the manure immediately under the middle of the new ridges. A light roller is then passed along the ridges, in the middle of which the seed is dibbled, so that the plants may receive all the benefit which can be derived from the manure.

The seed is deposited about an inch deep whilst the moisture is fresh in the earth, and covered by drawing a garden rake along the rows.

After this, the light roller is again passed along the ridges, and the work is finished.

When the plants are about the size of a radish, they are hoed with a turnip hoe, leaving the plants in the rows about 12 inches apart. If any of the seeds fail, and there happen not to be an even crop, the roots, where they are too thick, are drawn out before the hoeing takes place, and fransplanted, to fill up the vacant places, and insure a full crop, which is always certain, inasmuch as 99 plants out of 100, thrive and do well. In transplanting, care is necessary to prevent the point of the root from turning upwards.

The weeds, whilst the plants are young, are kept hoed, but after the head of the plant has once spread, no weed can live underneath its shade, and

the expence of hoeing afterwards is very trifling indeed.

The whole of the crop is taken up in the month of November, in dry weather. The tops are cut off near the crown of the plants, and the plants, when perfectly dry, are piled up in a shed, and covered with straw sufficiently thick to preserve them from the frost. They kept last year till the latter end of March, and they would have kept much longer.

The seed may be had of Cochran, seedsman, in Duke Street, Grosvenor Square; of Messrs. Gibbs and Co.

Half Moon Street, Piccadilly; and of Mr. Mason, Fleet Street. From 3 to 4 pounds of the seed will be sufficient for an acre of ground, prepared and dibbled according to the method here stated. The price last year was 7s. per pound, but it may probably be less hereafter, as the growers of the root, so long as that high price continues, will of course save their own seed, and thereby lessen the demand from the seedsman.

# THE METHOD BEFORE DESCRIBED ELUCIDATED.

Form of the ridges before manuring.



The tops of the ridges about 2 inches broad, a. a. a. Intervals of 24 inches from one a to another. Depths about 12 inches from a to b. Furrows where the manure is deposited, b. b. b.

Form of the ridges after splitting and rolling.



Tops A. A. A. 9 inches broad, in the middle of which the seed is deposited. Situation of the manure B. B. B.

Situation of the manure B. B. B.

#### CHAP, VI.

IT will not be supposed, by any intelligent farmer, that where the quantity of the Improved Beet Root given daily to a bullock is stated, it is meant that it should be given without dry food. It may, however, be necessary to say, that the same dry food must be given with the Beet as is esually given with turnips. Mr. Heaton last year gave out straw only, and the bullocks did well upon that food, and were sold to profit. No doubt they

would have been ready for the butcher sooner, had good hay been given to them: but this fact may be relied upon, that fresh bullocks, fed upon the Beet Root and oat straw, will, in 3 months time, get fat enough for the butcher.

It may also be necessary to observe, that not a word, here stated, is intended to apply to such light turnip soils as will bear the trampling of sheep, without injury to the land. Mr. Heaton have not sufficient knowledge of the management of turnip land, of that description, to say, whether prudence would warrant any trial of the Beet

Root upon a large scale, on such soil, to be eaten on the land.

Where a field, selected for a crop of Beet, happens to be in a foul state, the seed had better be sown in a garden, and the whole field planted with the young Beet, when of the size of a radish. This will give time for cleaning the ground, and fitting it for a crop; for, although the Beets are destroyers of weeds, it is not meant to recommend the sowing them on foul ground, or in any way to encourage a slovenly system of farming.

Although manure has been used in

the cultivation of this root, it is not absolutely necessary; and, if not in a rotten state, it does mischief. Good crops have been obtained at Bedfords without manure, and without injury to the succeeding crops of corn. Beet is fed from a depth considerably below the reach of the plough, as generally used; so that it does not draw the surface soil in which corn is fed.

The method of cultivating the Beet Root here recommended, is the same as that which is used in the cultivation of turnips, in Northumberland and other parts of the north, with this exception, that the rows there are 27 inches apart. There may be reasons in the north for still preferring that space, but in Essex the effect of it, in the cultivation of Beet Root, would be, that, instead of 48 tons per acre, 43 tons only would be obtained. Experience has proved, that the roots do not get to a larger size in rows 3 feet apart, than they do in rows 2 feet apart. It may, therefore, fairly be presumed, that they would not be larger in rows 27 inches apart; and if not larger, the weight of the crop, per acre, must be less, because the plants decrease in number as the rows increase in space.

The advantages that would arise

from the cultivation of these roots, upon a small part of every strong-land-farm throughout the kingdom, must be obvious. Calculations might be given that would astonish and almost exceed the belief of most readers. Such calculations, however, in general, are but little attended to, and it is thought better to omit them, hoping that enough has been said upon the subject, to fix the attention of every person interested in the cultivation of land.

#### APPENDIX.

Workington Hall, Cumberland, March 9, 1814.

SIR,

I had the pleasure of receiving your obliging favour last night, with two copies of the publication on Mangel Wurzel. I have cultivated that root for some years with success. From the Bishop of Derry I learnt to apply the leaves to soiling my milch cows and pigs. The leaves of a good crop are from 10 to 15 tons per acre. I have

steeped the seed and mixed it with sand previous to sowing, by which means it vegetates immediately. I have had 60 tons per acre on 3 feet stiches, 9 inches between the plants, and have kept the roots good till the middle of May. I have given the seed to many of my cottagers, who have grown the roots for their pigs, and they have found them to answer well.

I am, &c.

J. C. CURWEN.

### Barrowby, Lincolnshire, December 15, 1814.

SIR,

For the last four winters I have constantly fed my milch cows with Beet, but I never exceeded, I believe, a bushel per day to each; not from any apprehension of ill effects when given in larger quantities. My object was, to make it last the longer, as the milk and cream were evidently much improved thereby. The cows always had plenty of hay with the Beet, and when the weather, or rather the state of the

land would admit, they were turned into a grass field adjoining my farm yard.

Mr. Turney, of Sedgbrook, who has finished off some bullocks this Autumn, whilst at grass, with Beet, has given it with great good effect to his milch cows for the last two winters, and he is at this time keeping a new-calved heifer upon it.

I may add, that I have always found the milk to be increased in quantity, as well as improved in quality, whilst the Beet was used. As to the weight of my crop, this year, it is much less than usual. My land, you know, is old garden ground, and produced a crop of Beet last year, Swedes the year before, and carrots in 1811. A tenacious loam, on clay, difficult to work in the Spring. On this I got only 7 cwt. 2 qrs. on 6 yards by 10, which is after the rate of 30 tons per acre.

I am, &c.

JONATHAN KENDAL

Stag Brewhouse, December 18, 1814.

SIR,

Herewith you receive my report of a small piece of land, planted with Mangel Wurzel by Colonel Elliott. I have been as correct as possible, and have to observe, that I think the culture of it well worth the attention of every farmer.

The latter end of April, 1814, ten poles of land were sown with Mangel Wurzel, 20 inches distance, in drills; the plants in the row thinned to about 15 inches. The land poor, consisting

principally of brick rubbish and road scrapings, with a slight coat of rotten dung previous to the sowing. It had two hoeings after the plants were thinned. The plants in two of the rows, about the centre of the piece, were set out 2 feet apart, but these were not larger than where they were at 15 inches.

On the 8th of November the whole crop was taken up, and, after cutting off the heads, were packed up in a loft. To prevent any incorrectness in calculating the weight by the number of the roots, the whole crop was weighed, which amounted to 3 tons, 1 cwt. 56

pounds, which is according to the rate of 49 tons 4 cwt. per acre. A large portion of the roots weighed from 7 lbs. to 12 lbs. each. When the rows were first thinned, some other pieces were planted with the spare plants, but these did not succeed so well: they were much less than the others.

Flogs are remarkably fond of this root, and thrive very fast with it: cows are also very eager after both leaves and root. Colonel Elliott began feeding his cows with the Mangel Wurzel in July; the weather being very dry, we were very short of grass. We began with the leaves, and soon after with the

roots of two pieces, which were transplanted. The cows looked well and increased in their milk, and were partially fed with the roots till the crop was taken up. The roots were then sliced, and as much of them given to the cows (with a little hay) as they could eat; the milk increased immediately, and the cows improved in flesh.

My opinion is, that the Mangel Wurzel is a mast valuable article of food to the farmer; because, in a severe winter, when turnips are in general destroyed, these roots, properly stacked in a dry place, and covered so as to prevent severe frosts from injuring

them, will be a certain supply of nutricious and fattening food, (if cultivated in sufficient quantity) until the spring grass is fit to turn in upon. I should conceive, if the seed is put into the ground in the month of May, after the manner practised in drilling turnips on ridges, that no doubt can be entertained of obtaining a full crop. As Mangel Wurzel exceeds all other winter food, from being preserved under cover without injuring the quality, so it will prevent a recurrence to the expensive food of oil cake or corn.

I am, &c.

G. T. BOULT.

Kentish Town, December 29, 1814.

SIR,

Having presented one of your books to Mr. Richard Laycock, a considerable farmer and cowkeeper at Holloway, with a request that he would cultivate the root, he did me the favour to make choice of a piece of land, containing 1 rood and 20 perches, which had been part of a field, composed of brick earth or strong clay, in the procurement of which, the field had for several years past been dug

over to a great depth below the original surface. On this piece he caused a quantity of soil and rotten dung intermixed therewith to be laid, and the ground levelled, about 10 or 12 inches deep. In the month of May he commenced dibbling the seed in rows 2 feet asunder, and 1 foot apart in the rows; but, for want of time, only about one third part of the crop was got in by this mode. The remainder was transplanted in the middle of June. The whole of the land was kept perfectly clean, and, while confined to the upper soil, the plants made rapid progress. Had the subsoil been of a vielding nature, the crop would have been

extraordinary; but it was observable, although the tap roots were particularly vigorous, that so soon as they had penetrated to the unbroken clay, they invariably divided and turned off in a horizontal direction, and afterwards threw out fibrous shoots withoutnumber. The seed was procured from a nurseryman at Fulham, and was particularly good. Very few of the plants ran up to seed; those that did so, were not suffered to remain, but were taken up and given to the cows, as were also the lower leaves, which were repeatedly stripped off in considerable quantities. In the middle of November the whole crop was drawn off and weighed, after being cleared of the tops and loose dirt.

The produce was 15 tons and a few pounds over, average weight of the roots, 5½ pounds. Correspondent produce 40 tons per acre.

Although this experiment on Mr. Laycock's land falls short of those stated in your Treatise, yet, when the extreme unfavourableness of its situation is considered, that of an exhausted brickfield, the deficiency is easily accounted for. Indeed I cannot help thinking its result such, as to hold out considerable temptation to occupiers of strong clay farms, whereon turnips cannot successfully be cultivated, to

make trial of a root, which, with previous winter plowing, promises more profit than can be obtained from any other crop that I know of\*. The increase of live stock and radical improvements of such farms must necessarily follow.

I am, &c.

PETER POTTER.

<sup>\*</sup> This description of soil in some seasons is too wet to warrant the removal of a crop of Mangel Wurzel in November. When grown on such soils to be used early in the winter, the crop may be taken up in October; if intended for use in the cold spring months it may remain, with perfect safety, till the ground is sufficiently dry to prevent harm being done by the wheels of carts and the trampling of horses.—EDITON.

#### Lineroft House, Lichfield. December 13, 1814.

SIR,

I have for your information weighed and taken a pretty accurate account of my small crop of Mangel Wurzel, which I have lately gathered out of a garden belonging to my farm. The length of the garden is 62 yards; and the breadth of the part sown 12 yards, and the produce, according to my firm belief and best calculation, is 4 tons, 6 cwt. 40 pounds, and I am well convinced in my own mind, that

had I properly attended to the culture of this root, I might have obtained a much greater produce, even in that space of ground; for, you will observe, I have not strictly adhered to the plan laid down in your little publication. In the first instance, the ground was very foul at the time of sowing, and the plants, when growing, were about 18 inches apart one way, and nearly one yard the other; there being only 13 rows in the space of 12 yards, and the garden too surrounded with trees, so that I consider every thing was unfavourable. I further beg leave to state as my opinion, that as the ground is very strong, it is not well adapted to the growth of Beet, and as most of the roots were transplanted, they had not a fair chance.

Transplanted roots are seldom so good as those which have not been removed. I have given Beet Root, for two years past, both to feeding and milch cows with good effect.

I am &c.

J. PADMORE.

Wheston, Tideswell,
December 16, 1814.

SIR,

My Beet Root this year was sown upon light dry limestone land, of good quality, perfectly clean, but in a high situation and cold climate. The seed was partly sown in beds a yard and a half in width, partly drilled, and partly dibbled in ridges at the distance of 38 inches, and the plants left 12 inches apart after hoeing. The rows drilled came up much the best, and continued altogether the finest plants. They were thinned and hoed early-

The dibbled seed missed in a great number of places\*; the vacancies were supplied from the drilled rows, transplanted at different ages, and at different times of the year, (as the season suited for the purpose,) but none of them grew in size or luxuriance\* equal to those left standing in the drilled rows. In the beds the plants were extremely numerous, but hey had not the same advantages of being thinned and hoed so early as the drilled rows, and they were in general small in size.

I had a most productive supply of green food to the fold yard, during the

\* Probably planted too deep,-EDITOR.

months of September and October, from the tops, and during the latter month many of the plants which had run to seed, were also taken up and consumed in the same way. They were given to milch cows morning and evening, during milking time, and to store pigs in the fold yard.

The produce on 6 yards by 10 was 206 roots in number, and 477 pounds in weight, to which may be added about one-tenth more for plants consumed before the crop was taken up.

I think the Beet Root affords a very material increase to the stock of green food, of the best quality in the Autumn. months, and, when grown near enough to the farm yard to be taken daily as wanted, without too great an expence in labour and carriage, that mode of consuming the leaves and some of the roots may be resorted to with great advantage, and it may be found a resource of no small use in dry seasons.

Cattle in general eat both the root and top with eagerness. Pigs prefer them to any other vegetable food. I have occasionally given the roots in winter to horses, and particularly to brood mares and to foals, with hay, and they have invariably done well.

I am, &c.
JOHN SHAW.

These and many other letters have been received by the author from gentlemen residing in different parts of the kingdom, recommending, from their own experience and success, the culture of the improved Beet Root, to those farmers who have yet to learn its value. In so doing, they are not actuated by any sordid motive or selfish principle. To do good to others is their aim, and to promote the public welfare the utmost of their ambition.

FINIS.

in how 1824 . pulled a bed of man: gel worsel, the red, it stord on fifty Jour roods of ground, hart of an hop garden where the plant was not grubbed but only horsted; the rolls filled twenty one horse carts, and wasly half a me more; one cast loadwas weighed and found to contain just halfa Jon, so that the whole produce. from a low one gasser third of an dere was rather better than lew tons. Burrorth Suffer.

J. Swan, Printer, 76, Fleet Street, London.

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182 200 20 Rest of governs Gas produces to tor of consts = 12 her dere



