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Peter Henderson & Co's.
AMERICAN FARMERS MANUAL.
35 & 37 CORTLANDT ST. 1899
NEW YORK.

- - INDEX - -

AND TABLE OF QUANTITIES REQUIRED PER ACRE.

	Page.	Sow (if alone) per acre.		Page.	Sow (if alone) per acre.
Agrostis stolonifera—See Creeping Bent.....	8	2 bushels.	Lucerne—See Alfalfa.....	14	12 lbs.
" canina—See R. I. Bent.....	8	3 bushels.	Lespedeza striata—See Japan Clover.....	15	14 lbs.
" vulgaris—See Red Top.....	9	3 bushels.	Meadow Foxtail.....	8	3 to 4 bushels.
Alopecurus pratensis—See Meadow Foxtail.....	8	3 to 4 bushels.	" Fescue.....	11	2½ bushels.
Anthoxanthum odoratum—See Sweet Vernal, peren.	9	3½ bushels.	Mammoth or Pea Vine Clover.....	15	12 to 14 lbs.
Avena flavescens—See Yellow Oat Grass.....	12	3 bushels.	Medicago sativa—See Alfalfa.....	14	12 lbs.
" elator—See Tall Meadow Oat Grass.....	8	4 to 5 bushels.	Millo Maize—See Douras.....	17	4 to 5 lbs.
Arrhenatherum avenaceum—See Tall Meadow Oat Grass.....	8	4 to 5 bushels.	Millet, German and Hungarian.....	17	½ to 1 bushel.
Awnless Brome Grass.....	13	35 lbs.	" Pearl, Egyptian, Cat-tail or Horse Millet....	17	{ Drills, 5 to 6 lbs.
Alsike or Hybrid Clover.....	15	8 lbs.	" Japanese (In drills, 10 lbs. per acre).....	16	{ Broadcast, 8 lbs.
Alfalfa Clover.....	14	20 lbs.	Mangels.....	30	6 to 8 lbs.
Artichokes.....	26	8 to 10 bushels.	Melilotus alba—See Bokhara Clover.....	15	10 lbs.
Australian Salt Bush.....	26	2 lbs.	Onobrychis sativa—See Sainfoin.....	26	3 to 4 bushels.
Beet Sugar.....	32	6 to 8 lbs.	Orchard Grass.....	9	3 to 4 bushels.
Bermuda Grass.....	13	8 lbs.	Oats.....	21	3 bushels.
Bromus inermis—See Awnless Brome Grass.....	13	35 lbs.	Poa nemoralis—See Wood Meadow Grass.....	11	2 bushels.
Bokhara Clover.....	15	10 lbs.	" pratensis—See Kentucky Blue.....	12	2 to 3 bushels.
Broom Corn.....	17	8 to 10 lbs.	" trivialis—See Rough Stalked Meadow Grass.....	9	1½ bushels.
Buckwheat.....	22	1 bushel.	" arachnifera—See Texas Blue Grass.....	13	6 lbs.
Barley..... (Sow broadcast, 2 to 2½ bushels)	22	1½ to 2 bus. drilled.	Phleum pratense—See Timothy.....	12	10 to 16 qts.
Beans, Field.....	26	1 bushel drilled.	Potatoes.....	27 to 29	12 to 14 bushels.
Cynodon dactylon—See Bermuda Grass.....	13	8 lbs.	Peas, Field.....	26	3 bushels.
Creeping Bent or Fiorin.....	8	2 bushels.	" Cow.....	26	3 bushels.
Crested Dog's Tail.....	12	1½ bushels.	Pea Vine Clover—See Mammoth Clover.....	15	12 to 14 lbs.
Cynosurus cristatus—See Crested Dog's Tail.....	12	1½ bushels.	Perennial Red Clover—See Mammoth Clover.....	15	12 to 14 lbs.
Clovers.....	15	8 to 14 lbs.	Red Top.....	9	3 bushels.
Cow Grass—See Mammoth Red Clover.....	15	12 to 14 lbs.	Rhode Island Bent.....	8	3 bushels.
Crimson or Carnation—See Scarlet Clover.....	15	14 lbs.	Red or Creeping Fescue.....	10	2½ bushels.
Corn Dent and Flint.....	18 & 19	8 to 10 qts.	Rough Stalked Meadow Grass.....	9	1½ bushels.
" Fodder.....	20	{ Broadcast, 2bu. Drilled, 1 bu.	Red Clover (Common or June Clover).....	15	12 to 14 lbs.
" Pop.....	19	6 to 8 qts.	Reana luxurians—See Teosinte.....	17	6 to 8 lbs.
Carrots.....	32	4 lbs.	Rye.....	22	1½ bushels.
Cotton.....	26		Root Crops.....	30	
Dactylis glomerata—See Orchard Grass.....	9	3 to 4 bushels.	" kuta Baga.....	31	2 to 3 lbs.
Douras.....	17	4 to 5 lbs.	Rape, English.....	25	2 to 4 lbs.
English Blue Grass—See Meadow Fescue.....	11	2½ bushels.	Sorghum Halapense—See Johnson Grass.....	13	1 bushel.
" or Perennial Rye Grass.....	11	2½ to 3 bushels.	Sweet Vernal—true perennial.....	9	3½ bushels.
Ensilage Combination.....	24		Sheep's Fescue.....	10	2½ bushels.
Festuca elatior—See Tall Meadow Fescue.....	10	2½ bushels.	Smooth Stalked Meadow Grass—See Kentucky Blue.	12	2 to 3 bushels.
" heterophylla—See Various Leaved Fescue.....	10	3 bushels.	Sweet Clover—See Bokhara Clover.....	15	10 lbs.
" ovina—See Sheep's Fescue.....	10	2½ bushels.	Scarlet Clover.....	15	14 lbs.
" " tenuifolia—See Fine Leaved Sheep's Fescue.....	10	3 bushels.	Sainfoin.....	26	3 to 4 bushels.
" pratensis—See Meadow Fescue.....	11	2½ bushels.	Sorghums.....	17	4 to 6 lbs.
" rubra—See Red Fescue.....	10	2½ bushels.	Sugar Beet.....	32	6 to 8 lbs.
" duriuscula—See Hard Fescue.....	9	2½ bushels.	Sugar Canes.....	17	4 to 6 lbs.
Fine Leaved Sheep's Fescue.....	10	3 bushels.	Sunflower.....	26	4 qts.
Flax Seed.....	26	1 to 2 bushel	Swedish Clover—See Alsike.....	15	8 lbs.
Fiorin—See Creeping Bent.....	8	2 bushels.	Texas Blue Grass.....	13	6 lbs.
Grasses, various.....	8 to 12		Tall Meadow Oat Grass.....	8	4 to 5 bushels
" Permanent Pasture Mixtures.....	3	3 bushels.	" Fescue.....	10	2½ bushels.
" " Clover, for above.....	3	10 lbs.	Timothy or Herd's Grass of the North.....	12	8 to 12 qts.
" Renovating Mixture.....	3	1 bushel.	Trifolium pratense—See Red Clover.....	15	12 to 14 lbs.
" "Henderson" Lawn Mixture.....	33	4 to 5 bushels.	" perenne—See Mammoth Clover.....	15	12 to 14 lbs.
" for the South.....	13		" repens—See White Clover.....	15	8 lbs.
Herd's Grass (of the South)—See Red Top.....	9	3 bushels.	" incarnatum—See Scarlet Clover.....	15	14 lbs.
" (of the North)—See Timothy.....	12	8 to 12 qts.	" hybridum—See Alsike Clover.....	15	8 lbs.
Hungarian Grass—See Hungarian Millet.....	17	½ to 1 bushel.	Teosinte.....	17	6 to 8 lbs
Hard Fescue.....	9	2½ bushels.	Turnips.....	31	2 to 3 lbs.
Italian Rye Grass.....	11	3 bushels.	" Ruta Baga, Russian or Swedish.....	31	2 to 3 lbs.
June Grass—See Kentucky Blue.....	12	2 to 3 bushels.	" etch, Spring (Tares).....	26	2 bushels.
" Clover—See Red Clover.....	15	8 to 10 lbs.	" Sand or Winter.....	25	1 bushel.
Japan Clover.....	15	14 lbs.	Various Leaved Fescue.....	10	3 bushels.
Johnson Grass.....	13	1 bushel	Wood Meadow Grass.....	11	2 bushels.
Kaffir Corn.....	17	4 to 5 lbs.	White or Dutch Clover.....	15	8 lbs.
Kentucky Blue Grass.....	12	2 to 3 bushels.	Wheat.....	24	1½ bushels.
Lupins.....	26	2 to 3 bushels.	Wild Rice.....	26	
Lolium italicum—See Italian Rye Grass.....	11	3 bushels.	Yellow Oat Grass.....	12	3 bushels.
" perenne—See English Rye Grass.....	11	2½ to 3 bushels.	Zizania aquatica—See Wild Rice.....	26	

ABOUT FORWARDING AND REMITTING.—Every order is executed at once on its receipt, or a reason given why it has not been sent, so that parties ordering may know that if goods are not received in proper time, it is almost certain that the letter has not been received by us. Remittances should be made either in the form of a *P. O. Money Order, Bank Draft, Express Money Order, Express Purchasing Order or Registered Letter.* Remittances in any other way are entirely at the sender's risk.

We guarantee safe arrival, and make no charge for boxes, barrels, packing, or carting. All grass seed bags are furnished free *excepting* bags for timothy and clovers, for which we charge, 2 bush. (seamless), 20 cts.; 1 bush., 15 cts.; ½ bush., 12 cts.; 1 pk., 10 cts.

SPECIAL PACKING for FOREIGN SHIPMENTS, in tin-lined cases or double sacks, charged for, at cost.

SPECIAL QUOTATIONS given to buyers of large quantities.

ESTABLISHED 51 YEARS.

PETER HENDERSON & CO., NEW YORK.

1

HENDERSON'S AMERICAN FARMERS' MANUAL.

THE above views show our Cortlandt Street Store in the centre, and on either side our Jersey City Warehouses (combined capacity, 250,000 bushels). These warehouses are equipped with the most modern seed-cleaning machinery, enabling us to furnish

SUPERIOR GRASS, CLOVER AND OTHER FARM SEEDS
WHICH WE SUPPLY ONLY DIRECT TO THE PLANTER.

In no department of our business is this feature of greater importance, for it enables us to supply direct to the planter the choicest re-cleaned seeds of highest germination at the lowest possible prices. We are to-day the largest direct suppliers of re-cleaned grass seeds to the farmer in America, and, if at times lower prices are quoted, depend upon it that it is at the sacrifice of quality, for we are so equipped that no responsible merchant can undersell us FOR THE SAME QUALITIES. We would warn our customers that the markets are at the present time flooded with much inferior, and, in many cases, absolutely worthless, grass and clover seeds, much of which has been purposely adulterated and is sold to the unsuspecting farmer by country merchants who do not have the expert knowledge to detect the adulteration, and upon whom it has been foisted by unscrupulous dealers. Our seeds are all tested and are of proved high germination, and no better value can be offered you anywhere.

We do not supply dealers. Our Grass and all other Seeds, to be genuine, must be procured from us, direct from New York.

This catalogue will be found to be a complete list of the choicest grains, fodder plants, root crops and miscellaneous farm seeds, all of which have been grown from selected stocks and thoroughly re-cleaned with our improved machinery.

FARM MANAGERS.

..We have from time to time applications by competent men for positions as farm and estate managers, men who have been trained to the business, and are well posted on agriculture generally, and the raising and care of all kinds of farm stock. We will be very pleased to enter into correspondence with those who require the services of such. We make no charge to either employer or employee.

PETER HENDERSON & CO.,

35 AND 37 CORTLANDT STREET,

February, 1899.

NEW YORK.

HENDERSON'S SPECIAL GRASS MIXTURES

FOR PERMANENT HAY.

Although the most widely cultivated hay grass in the United States is Timothy, or a mixture of Timothy and Clover, and while they answer the purpose admirably on farms *where the soil is suitable* and where the usual three and four years rotation is carried on, yet, *there are many other grasses which will yield more profitable returns.*

The prevailing low prices of Wheat, Corn and other grain crops have made their growing, and the usual rotation farming unprofitable, especially in the Eastern States, where it is impossible to compete with the rich prairie soils of the West, but *hay still yields a fair profit*, and the farmer whose land is sown *with a proper mixture of Permanent Grasses, requiring only an occasional top dressing of manure or fertilizer to*

MAINTAIN THEIR HEAVY CROPPING QUALITIES FOR TWENTY YEARS OR MORE,

does away with the necessity for plowing and rotation cropping with all its attendant expense.

The most serious item of expense on the farm, the labor bill, can be largely reduced and thus give reasonable prospect of *profitable annual returns at a minimum of labor and expense.* The seed of these Permanent Grasses is more costly than Timothy, and more is required per acre, but by reason of their heavy cropping qualities and permanency *they soon repay the extra cost and leave a handsome margin for the farmer,* when the cost of plowing, harrowing and re-seeding Timothy every three and four years is taken into consideration.

The grasses used in the Mixtures offered on page three recover quickly after the hay crop is cut, and yield either a second crop or pasture in the greatest abundance during the summer and fall months. Within a few days after cutting, their rich green appearance as compared with Timothy is a desirable feature, especially in fields close to the house, as it gives a park-lawn effect to the surroundings.

PRICES

Henderson's Special Grass Mixtures

FOR HAY AND PERMANENT PASTURE.

Can be sown in either Spring or Fall.

READ WHAT THE AGRICULTURAL PRESS AND OUR CUSTOMERS SAY ABOUT HENDERSON'S SPECIAL GRASS MIXTURES.

Permanent Pasture.

HENDERSON'S SPECIAL GRASS MIXTURE for Permanent Pasture, consisting of the following varieties: *Orchard Grass, Meadow Foxtail, Tall Meadow Oat Grass, Sheep's Fescue, Rhode Island or Creeping Bent, Hard Fescue, Sweet Scented Vernal (True Perennial), Meadow Fescue, English Rye Grass, Ken ucky Blue Grass, Italian Rye Grass, Red Top, etc.*, as recommended in our book, "*How the Farm Pays*," blended in the proper proportions, we will supply for

\$2.50 per bushel of 14 lbs. (20-bushel lots, \$2.45 per bushel).

The amount of seed necessary to sow an acre largely depends on the quality of the land; the poorer the soil, the larger the quantity required. Taking one soil with another, and owing to the fact that the seeds we use are of higher quality and better cleaned than ever, a fair average would be **3 bushels to the acre**. The thicker the seeds are sown, the sooner will a fine close turf be obtained. While the leading variety used in these mixtures is Orchard Grass, the addition of the several other grasses named, add to its value; because Orchard Grass sown alone has a tendency to form tussocks or clumps, which, however, can be overcome by thick seeding.

We have heard the claim made that Orchard Grass is tough and pithy. It should be borne in mind that Orchard Grass is about **three weeks earlier** than Timothy, and that it will certainly be **pithy if allowed to stand** and be harvested at the same time as Timothy. If cut at the proper time, however, there is no grass which makes better hay.

To those accustomed to sow Timothy and Clover, the quantity of seed we recommend will seem large, but the seeds of these permanent grasses are quite different from Timothy, being much larger and lighter. Our experience not only on our own farm, but on hundreds of other farms convinces us that, unless under exceptionally favorable circumstances, satisfactory results cannot be obtained with less seed than we recommend.

That the superiority of these Mixtures over Timothy and Clover is an assured fact, we refer to the reports of our customers, and the Agricultural Press. Thousands of the most progressive farmers, during the past few years, have seeded from ten to hundreds of acres with most satisfactory results, and we may mention that one of the largest Stock Farms in the United States, after most careful investigations and experiments, recently ordered from us sufficient to seed down nearly one thousand acres.

Henderson's Special Grass Mixture for Hay and Permanent Pasture for Light soils

"	"	"	"	"	"	"	"	Medium soils	\$2.50 per bushel of 14 lbs.
"	"	"	"	"	"	"	"	Heavy soils	20 bu. lots, \$2.45 per bu.
"	"	"	"	"	"	"	"	Orchards and Shady Places	50 " 2.40 "
"	"	"	"	"	"	"	"	Hay only	100 " 2.35 "
"	"	"	"	"	"	"	"	Pasture only	

Special quotations for LARGE quantities.

To these mixtures intended for either Mowing Lands or Pasture (but which, on account of its greater weight, should be sown separately), is to be added 10 lbs. of Mixed Clovers, comprising White, Mammoth Perennial or Cow Grass, Alsike, Lucerne, etc., but this should only be sown in the spring, as it is rather tender in this latitude if sown in the fall.

The quantity needed (10 lbs.) of MIXED CLOVERS to sow an acre we will sell for \$2.00

At first sight \$7.50 to \$10 per acre appears to be a high price for the seeding of a pasture, but bear in mind that it is a **permanent** pasture that we have in view, and nowhere can a permanent pasture be laid down **properly** for a less original outlay than that we name.

HENDERSON'S RENOVATING MIXTURE FOR IMPROVING OLD PASTURES.

\$2.50 per bush. of 14 lbs. 20-bus. lots, \$2.45 per bush. Mixed Clovers, 20 cts. per lb.

Grass lands, in consequence of being constantly mown or pastured without being fertilized or manured, frequently become impoverished and deficient in the more valuable and nutritious grasses, and in time become unprofitable. It is needless waste and unnecessary to plow up such land unless it be full of weeds. The turf should be well harrowed with a sharp tooth harrow, and, if possible, top-dressed with soil and well-rotted stable manure, which should be well harrowed in, and then sown with **Henderson's Renovating Mixture** at the rate of one bushel per acre, and five pounds of mixed clovers. This mixture is composed of those sorts that are best suited for sowing on old pastures or meadows, and it **will speedily improve the quality and increase the produce**. March and April are the best months for sowing, choosing an interval between rains if possible, though, if inconvenient to sow then, very satisfactory results can be obtained by fall sowing. After sowing, the ground should be lightly harrowed and afterward well rolled.

In the preparation of these mixtures for Permanent Pasture, the greatest care is exercised in selecting such varieties as are suited to the soil to be laid down, and are likely to realize the object in view. To facilitate this, a **description of the soil and climate, the range of temperature, and the purpose for which sown**, and if **with or without a grain crop**, should accompany each order.

FULL DIRECTIONS FOR SOWING ENCLOSED IN EVERY BAG.

Henderson's Special Grass Mixtures

FOR HAY AND PERMANENT PASTURE.

EXTRACTS FROM THE AGRICULTURAL PRESS.

From "COUNTRY GENTLEMAN," published in Albany, N. Y.

GRASS CULTURE.

By invitation of Messrs. PETER HENDERSON & Co., of New York, a representative of this paper visited their experimental grass plats.

To reproduce English turf in the face of American drouths and heat may not be possible; *to better the common clover and timothy practice, with its frequent thin results and speedy running out, is surely feasible.* Instead of three or four varieties, ten to fifteen or twenty are used; tall and short grasses, coarse and fine, late and early sorts, are deftly combined in varying proportions according to the end in view.

Below the taller grasses was a thick mat of finer kinds, and the close, rich turf hid every particle of soil. There did not seem to be room for another spear of grass. Going over to an ordinary timothy meadow near by, the contrast was striking. The individual spears in a foot square could easily be counted; "standing-room" for more was abundant. The soil had not been "worked for all it was worth," and the thoughtful farmer might do some suggestive figuring. In cutting the lower plats next day, it was estimated the yield would run three tons to the acre. (We afterward found on a well-kept Orange County farm that the yield was only half a ton to the acre on fields that yielded three tons last year.)

It is not our purpose to go into the details of grass culture in this article; our brief survey and study would not do justice to them. We wish simply to call the attention of farmers to the work in progress, that they may watch for results likely to be of great value. What they will *do* is what we wait to see. Surely, if "to make two blades of grass grow where one grew before" is worthy of praise and record, the Messrs. Henderson deserve a richer tribute, for they are growing 40—nay, 100 to 1!

From "AMERICAN AGRICULTURIST," published in New York City.

BEST GRASSES FOR HAY AND FOR PASTURE.

By a judicious choice of seeds, mixtures have been effected which will give constant pasturage in this climate from early spring until late in the autumn. Or, they will yield a heavy crop of hay and a few weeks after are ready for use as pastures, and will remain in good condition for this purpose until winter sets in, and again yielding a good hay crop the next season, and so on year after year. In some of these mixtures *the turf is remarkably close and tough, the grass roots matting together thoroughly and going deep down.*

Timothy, and in many parts "timothy and clover," is the standard grass in the country. While timothy is a valuable grass, there are some other kinds so much better, which last longer, yield a heavier crop, will stand various climatic and soil conditions better, it is astonishing that the majority of farmers should still stick to the timothy without even giving one or more of the other kinds and mixtures a fair trial.

When it is considered that by a very small additional outlay at least double the yield that can be produced by timothy will be obtained by the use of other grasses and mixtures which are of just as good quality as timothy, and some of them better, it is strange that farmers are not willing to depart from the old, deep-worn ruts, and thus effect considerable financial gain. *It should also be remembered that a discriminate mixture of grasses and clover gives a better result than does any kind grown by itself, for the simple reason that mixtures are bound to grow closer together on the ground, and thereby their component species protect one another from undue heat and drought;*

Such mixtures are far superior to timothy or "timothy and clover," or any one grass, costing but a little more, lasting much longer, and giving frequently more than double the yield.

From "FARM AND HOME," published in Springfield, Mass.

MORE HAY AND BETTER PASTURE.

Bare pastures are a source of loss to the farmer. The broad acres that must be devoted to grass are paying taxes and interest, and if not covered with luxuriant hay and pasture are breeding weeds. If seeded with well-proportioned mixtures of proper grasses, even the steep hillside will yield pasture and hay, which every farmer knows is rich with money.

On a stony hillside at their Trial Farm the seedsmen, Peter Henderson & Co., are testing many varieties and mixtures to find what grasses or mixtures of grasses will make in America the famous turf of the meadows and pastures of Europe.

The tendency to run out and the many thin stands obtained with timothy and clover, or with any separate grasses, led to the trial of mixtures of imported and other grasses which have become naturalized in America. The natural sod is formed of a mixture of many grasses, each variety having a certain use in meeting the varying conditions of growth.

The enormous yield of nearly 4½ tons of good hay per acre should convince any one that more hay and better pasture can be grown with mixtures than with timothy and clover alone, as, under the very same conditions, the latter yielded less than a ton and a half (2,760 lbs.) per acre. Timothy, after being cut, throws all its strength into storing food in a bulbous swelling at the base of the stem, upon which its next season's growth depends, and hence cannot be pastured nor cut a second time without seriously injuring the next year's crop. The grasses in both the temporary and permanent mixtures grow direct from the roots, which are dense and fibrous, yielding a second crop each season, and after that can be safely pastured by one cow per acre.

From "RURAL NEW YORKER," published in New York City.

THE VALUE OF GRASS SEED MIXTURES.

This firm (P. H. & Co.) has been engaged in a long series of experiments in making up mixtures of grass seeds for hay and permanent pasture, and also for lawns. The underlying idea seems to be that these different grasses, having different root systems, will occupy the ground more fully if a number of different kinds are sown together. On the farm, are about 30 acres of these different grasses, some plots sown with single kinds only, to show the individual manner of growth, and others in mixture. Some of them sown as far back as 1892, and now bearing heavy crops.

The first piece we visited was one that was seeded with about three bushels per acre of Henderson's Special Grass Mixture for Hay and Permanent Pasture for Light Soil. Mowing had begun in this plot, *and it was so thick on the bottom that much difficulty was experienced in getting the mower through it.* Some of the taller of the grasses were up to the shoulders of an ordinary man. It was estimated that this cutting would yield, at the very least, 2½ tons per acre, of the very best of hay, superior to Timothy in feeding value.

The earliness of the grasses as compared with Timothy is a desirable feature, as the haying season comes on at a time when there is little pressing work going on, and the hay is all in the barn before grain harvest.

Few of the old-time methods of seeding will give an amount of hay equal to this first cutting, and it is said that, after the hay is off, the grasses will start up again so quickly that fine pasturage will be afforded, or at least 1½ ton per acre more hay may be cut in August or September.

Many of the plats were sown six years ago this coming Fall, and have had one dressing of commercial fertilizer and bone, *clearly showing the permanent nature of these grasses,* as a plot of Timothy sown at the same time ran out and was plowed up and re-seeded a year ago.

Henderson's Special Grass Mixtures, For Permanent Pasture.

For prices see page 3.

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A PERMANENT PASTURE WORTHY OF THE NAME.

There is no more important part of a farm than a good pasture, and that can only be obtained by the use of the proper grasses, varieties that have different root formations and different habits and seasons of growth, in order to maintain a **rich, close turf throughout the entire season**. Timothy should never be used for pasture, because it will *not* stand trampling, and soon runs out when heavily pastured and at best is short lived, as compared with the permanent grasses used in our Special Mixtures. These Mixtures contain over a dozen of the best permanent grasses, both American grown and imported. All are permanent and when once established **will last indefinitely**, if the fertility of the soil is kept up by occasional top-dressing. Owing to the different habits of growth the grasses grow closer together and form a rich, close turf, covering the soil completely and forming a protection to the roots during hot, dry weather, **thereby enabling these grasses to maintain a rich green appearance when Timothy and other grasses are burned up**. The thick turf also prevents animals poaching through and destroying the pasture.

We have for years studied the subject of pastures and their formation with exhaustive tests on our own trial farms where we have had growing separately and in different mixtures all the grasses of which seed can be procured in commercial quantities. (*See opinions of the Agricultural Press on opposite page.*) These trials have been broadly studied and the results watched with critical interest on the farms of our customers. We are in an unrivalled position to advise you on the subject and to supply suitable grass seeds for Hay and Permanent Pasture.

For prices see page 3.

HENDERSON'S
SPECIAL GRASS MIXTURE
FOR HAY AND PERMANENT PASTURE

COPYRIGHT 1899 BY PETER HENDERSON & CO.

For prices see page 3.

Henderson's Special Grass Mixtures

FOR HAY AND PERMANENT PASTURE.

A FEW VERDICTS OF OUR CUSTOMERS SELECTED FROM HUNDREDS.

NEW YORK.

I have been particularly well pleased with my pastures during this exceptionally dry autumn (1895). They were seeded with your Permanent Grass Mixtures six and seven years ago, and have steadily improved during that time. When ordinary pastures were bare during the dry weather these gave constant feed.

JAS. WOOD,
Ex-President New York State Agricultural Society.

Your Grass Mixture looks better than any other meadow we have on the whole farm.

CHARLES LAUTZ.

The crop was much in excess of ordinary grass seeds or Timothy used in the neighborhood. As an evidence of my satisfaction, I have seeded down another lot this fall, using the same seed.

JAMES A. MILLER, JR.

The Special Grass Mixtures bought from you have given every satisfaction, and, after my experience with them, I should never think of planting Timothy again.

CHARLES H. LEAYCRAFT

It's the finest piece of grass anywhere about here. An old farmer told me last week it would cut $3\frac{1}{2}$ tons to the acre sure.

JAMES M. RICHARDS.

Your Special Mixture of Grasses was a success; compared with Timothy and clover, the yield is double.

OSCAR SILLOCK.

It has yielded more than double the amount of pasture a piece of Timothy and Clover of the same size would have done under the same conditions.

FRANK G. MCCOLLUM.

VERMONT.

I have used your grass seeds for several years, and they are easily the best in the market.

F. C. KIMBALL.

I am more than pleased with the results of both Lawn and Pasture, and am satisfied that P. H. & Co.'s seeds are unsurpassed.

C. F. HASTINGS.

VIRGINIA.

My manager is enthusiastic over your Mixture for Hay and Permanent Pasture. He claims this year he cut 3 tons per acre the first cutting, $1\frac{1}{2}$ tons the second, and will cut 2 tons the third. The field is a grand sight. People come for miles around to see it.

E. E. BARNEY.

IOWA.

The Grass Mixture I got of you has done extra well, especially this year of drought. It stood the drought and yielded about twice as much as timothy, and the cattle seem to do better on it.

WILLARD WATSON.

MARYLAND.

In about 600 acres sown by me, some 350 were in open cleared woodland, the balance fields. In all cases the Grass Mixture took uniformly well and gave very satisfactory results.

W. T. BARNARD.

It gives me pleasure to inform you that from the Grass seed I bought of you I got a good stand and a splendid growth. I am well pleased; it does well in this section.

S. C. JONES.

OHIO.

The Special Grass Mixture that I purchased from you last fall for permanent meadow has given us the very best of satisfaction. It made a wonderful growth and has given us a large amount of hay and pasture per acre. It produced the finest piece of grass I ever saw.

W. J. HAYES.

MASSACHUSETTS.

I cut 80 one-horse loads of well-cured hay from the Grass Mixture. My man estimated one-half ton per load, and I think it was near that. This year I had as much for the first crop, but on account of drought the second crop was light. I am well pleased with the result and am satisfied I got much more than I would from any one kind of grass.

GUY SMITH.

The seed for the meadow land was all right, and has proved a great success in every way. I have cut two heavy crops each year.

W. H. FAIRBANK.

The Grass Seed came up so rank I had to cut it the forepart of June, a very heavy crop of nice hay.

E. L. BARTLETT.

This is the third year and there was a heavy crop cut on it two weeks before timothy was ready, and, much to my surprise, there was quite a good second crop in spite of the very dry season.

H. L. PARK.

I had four bushels of your Special Grass Seed Mixture in the fall of 1887, and the same amount last season, and I am well satisfied with the result, as I cut more hay from the land I used your seed on than from land seeded with seed usually sown about me.

AUSTIN W. WARD.

The Grass Seed turned out very satisfactory, and we have this year cut three large crops of grass from the land seeded last fall with the seed bought of you.

C. E. ROGERS.

INDIANA.

Your Special Grass Mixture has done very well for me. It produced, this season, the largest crop of hay that I ever saw cut off the ground, and has been yielding a most excellent pasture for over a month past, and this notwithstanding the extraordinary severity of the drought in this vicinity.

R. S. TAYLOR.

PENNSYLVANIA.

I will not seed down until spring as we are in such a drought that nothing will grow. Rye and wheat will scarcely germinate. Your grass seed upon Mr. Wayne McVeagh's farm is the greenest spot here; it looks well, although such a dry time.

JOHN G. GARDINER.

The growth is simply wonderful, and do not think there is any other grass to equal it for hay or pasture. I sowed about ten acres, from which I have cut what I consider the best hay ever made on my farms.

J. S. LONG.

The Permanent Grass seed bought of you has proved a luxurious success. The result exceeds my expectations. In short, I think it the best grass seed to be had, and shall use fifty bushels more in the spring.

W. H. REED.

The Grass seed sent me turned out well. It makes a good grass for meadow, or for grazing. It is fine, close grass and the cattle like it.

PAUL A. OLIVER.

The green appearance of the field attracted universal attention. The seed seemed to get hold of the soil completely—no bare spots, but the ground entirely covered. It has far surpassed clover and timothy in the amount it yields.

J. B. CUMMINGS.

MAINE.

I laid down some three or four acres with your Special Mixture of Grass seed early last September and had a beautiful "catch." It was the wonder of all, and many persons thought it must be grain; it certainly looked splendidly. I did not succeed in getting four tons or more per acre, but I did get more than from anything else, and it is splendid hay.

GEO. M. HOLMES.

NEW HAMPSHIRE.

The quality of the Permanent Pasture Grasses is all that could be desired as it makes fine hay.

DANIEL GILMAN.

Your mixtures are unquestionably earlier than our common seed.

GEO. B. LEIGHTON.

NORTH CAROLINA.

The grass seeds purchased from you, and, in fact, all my other dealings with your house, give entire satisfaction, and I hope soon to send you new orders.

TIMOTHY DOLAN.

COLORADO.

Your Grass Seed has given the best of satisfaction. They are the most reliable I have ever used.

SAM. STEVENSON.

CONNECTICUT.

The mixed grasses have given better crops of hay and have not died out so bad as grasses sowed by themselves. After we had some little rain the mixed grasses started sooner and had a much greener look and have grown better afterwards. I would not again sow grasses alone, but would always sow the mixture.

H. L. STEWART.

I used 30 bushels of your mixture for permanent meadow on seven acres in one field, and a little less than three acres in another. This year from the three acres I got 9 two-horse loads of excellent quality, and from the seven acres I got 28 two-horse loads, averaging a ton each. I expect to get a good second crop. The mixtures are better than the old-fashioned seeding of Timothy, Red top and Clover.

R. E. HOLMES.

The 16 bushels Permanent Pasture Grass you sent me has proved a perfect success. I shall want more in the spring.

J. S. MACFARLANE.

RHODE ISLAND.

I tried your mixture in order to avoid making "Daisy Hay," which seems to be the prevailing kind all about me, and I am glad to say I have so far succeeded in being free of that pest.

As to quick growth after cutting, it has exceeded my expectations, and each year the lot looks like a lawn in a few days after cutting.

JULIUS PALMER.

The Permanent Grass Seed I will order of you in the fall, as I would like to see if the result could come up to the spring sowing of 40 bushels which I purchased of you in '96, and which to-day is the best field of grass on the Island.

BRADFORD NORMAN.

NEW JERSEY.

We mowed a very good crop the 20th of June, and in two weeks had good pasture—the best in the township, and very good now, and much admired by the neighboring farmers. Our Timothy meadow is nearly all killed or dried up, no pasture. But the Special Grass Mixture is now very nice and green.

E. W. BRÜEN.

Your Grass Mixture was acknowledged by all who saw it to be the best field of grass in this section.

JOHN S. BIGELOW.

I have an even, solid stand of grass that affords ample pasture, and far better than those adjoining me who depend on Clover and Timothy.

E. P. LAFETRA.

From your Permanent Pasture Mixture, about eighty bushels, I had two crops together, about $3\frac{1}{2}$ tons per acre.

E. J. GEHLEN.

The Special Grass Mixture yielded me a crop of hay more than twice as great per acre as the Timothy seed, which I sowed alongside of it at the same time and with the same care and fertilizing that I gave yours.

R. V. LINDBURY.

NATURAL GRASSES.

Descriptions of varieties adapted to all soils, climates and conditions in the United States.

"GRASS IS KING." It embraces one-sixth part of the whole vegetable kingdom, and is the true basis of Agriculture in the highest condition.
"No grass, no cattle; no cattle, no manure; no manure, no crops!"

CREeping BENT OR FIORIN.

(Marsh or Broad Leaved Bent.)

Botanical, *Agrostis alba stolonifera*. German, *Fioringras*.
 French, *Agrostide blanche stolonifera*.

Perennial. Time of flowering, July. Height, 1 to 2 feet.

This grass is well adapted for moist situations, and valuable for affording herbage in early spring and late autumn, before other grasses have commenced or have stopped growing, and in consequence is advantageously included in permanent pasture mixtures. It is also excellent for lawns.

Sow (if alone) 2 bushels per acre.

Weight, about 20 lbs. per bushel.

Price, 25 cts. per lb.; \$4.50 per bushel; \$22 00 per 100 lbs.

CREeping BENT.

MEADOW FOXTAIL.

Botanical, *Alopecurus pratensis*. German, *Wiesen Fuchsschwanz*.
 French, *Vulpin des prés*.

Perennial. Time of flowering, May. Height, 2 to 3 feet.

This grass closely resembles Timothy, but flowers much earlier, and thrives in all soils excepting dry sands or gravels. Its highest state of perfection is attained in strong, moist, rich soils, and it is particularly valuable as a permanent pasture grass, being of very early and rapid growth. It is highly relished by stock; endures close cropping and forms a luxuriant aftermath, and quickly revives after a long drought. It is very nutritious, but unfortunately loses a large percentage in weight after being cut for hay. Sow (if alone) 3 to 4 bushels per acre; weight, about 7 lbs. per bushel.

Price, 32 cts. per lb.; \$2.10 per bushel; \$28.00 per 100 lbs.

MEADOW FOXTAIL.

TALL MEADOW OAT GRASS.

Botanical, *Arrhenatherum avenaceum*. German, *Französisches Raygras*.
 French, *Avoine élevée*.

Perennial. Flowers in May and June.
 Height, 2 to 4 feet.

(This is the *Avena Elatior* of Linnaeus.) Valuable for permanent pastures on account of its luxuriant early and late growth. It is also highly recommended for soiling, as it furnishes an abundant and early supply of fodder; after being mown it produces a very thick aftermath. It grows spontaneously on deep, sandy soils when once naturalized, and succeeds on tenacious clover soils. Sow (if alone) 4 to 5 bushels per acre; weight, about 10 lbs. per bushel. Price, 25 cts. per lb.; \$2.00 per bu.; \$18.00 per 100 lbs.

TALL MEADOW OAT GRASS.

RHODE ISLAND BENT.

(Brown Bent or Dog's Bent.)

Botanical, *Agrostis canina*. French, *Agrostide des chiens*.

Perennial. Time of flowering, June and July. Height, 1 to 2 feet.

Its hardy creeping habit renders it desirable for close sward, and it is found to be a very desirable sort in some parts of the country for lawns. Sow (if alone) about 3 bushels per acre; weight, 14 lbs. per bushel. Price, 32c. lb.; \$4.00 bushel; \$28.00 per 100 lbs.

AWNLESS BROME GRASS.

Botanical, *Bromus inermis*. German, *Trespe de Hongrie*.
 French, *Brôme de Hongrie*.

Perennial. Time of flowering, June to August. Height, 2 to 5 feet.

For price, full description and illustration of this valuable new grass, see page 13.

ROUGH STALKED MEADOW GRASS.

Botanical, *Poa trivialis*. German, *Gemeines Rispengras*.
French, *Paturin commun*.

Perennial. Time of flowering, July. Height, 2 to 3 feet.

The Lombardy "Queen of Meadow" Grass. An excellent grass for good, deep, rich, moist meadows and stiff, heavy clays. It gives a constant supply of highly nutritive herbage, for which horses, sheep and cattle show a marked partiality. Sow (if alone) $1\frac{1}{2}$ bushels to the acre; weight, about 14 lbs. per bushel. Price, 45 cts. per lb.; \$6.00 per bushel; \$40.00 per 100 lbs.

ORCHARD GRASS. (Rough Cocksfoot.)

Botanical, *Dactylis glomerata*. German, *Gemeines Knautgras*.
French, *Dactyle pelotonné*.

Perennial. Time of flowering, June. Height, 3 feet.

This is one of the most valuable and widely known of all the grasses, being of exceptional value in permanent pasture mixtures

on account of its earliness and its rapidity of growth. It is ready for grazing several days before any other grass, except Meadow Foxtail. After being mown it produces a luxuriant aftermath. It is quick to recover from close cropping, "five or six days being sufficient to give a good bite." It is relished heartily by all kinds of stock, sheep even passing all other grasses to feed upon it. It succeeds on almost any soil, especially in moist, shady places, and in porous subsoils its roots extend to a great depth. It exhausts the soil less than many other grasses, and stands drought well, keeping green and growing when other grasses are dried up. It flowers about the time of Red Clover and makes a splendid mixture with it to cut in blossom for hay, although it should be cut early

ORCHARD GRASS.

or grazed close, as it becomes hard and wiry and loses its nutritious qualities, to a certain extent, when ripe. It should not be sown in mixture with Timothy, for, being three weeks earlier, it becomes pithy if allowed to stand until the Timothy is ready to cut. Cut at the proper time, however, there is no better or more succulent hay. It is inclined to grow in tufts, and should therefore have other grasses sown with it and be sown very evenly. This tufting characteristic unfits it for lawn purposes. Sow (if alone) 3 to 4 bushels per acre; weight, about 14 lbs. per bushel. Price, Choice, *Re-cleaned Seed*, 18c. lb.; \$2.25 per bushel; \$15.00 per 100 lbs.

SWEET-SCENTED VERNAL.

(True Perennial.)

Botanical, *Anthoxanthum odoratum*. German, *Gemeines Geruchgras*.
French, *Flouve odorante*.

Perennial. Time of flowering, May and June. Height, 1 to 2 ft.

Very valuable on account of its delicious perfume, to which our hay fields and pastures owe their fragrance. The odor is more distinguishable when the grass is drying or dried, and when included in hay its aroma is imparted to the other grasses, making it relished by the stock and enhancing the value of the hay. Sow (if alone) $3\frac{1}{2}$ bushels per acre; weight, about 10 lbs. per bushel. Price, 70c. per lb.; \$6.50 per bushel; \$60.00 per 100 lbs.

RED TOP.

(Burden's Grass, Herd's Grass of the South, and in poor soils "Fine Top.")

Botanical, *Agrostis vulgaris*. German, *Amerikan red-top*.
French, *Agrostis d'Amérique*.

Perennial. Time of flowering, July. Height, 1 to 2 feet.

Valuable either for mixing in hay or permanent pasture grasses; is common throughout the country; succeeds almost everywhere, but reaches its highest state of perfection in a moist, rich soil, in which it attains a height of 2 to $2\frac{1}{2}$ feet. If for pasture, it should be fed close, as it is not relished after it grows up to seed. It is often sown with Timothy and Red Clover; the latter of course soon disappears, the Timothy follows; then the Red Top takes its place. Sow (if alone) 3 bushels; weight, 14 lbs. per

RED TOP.

bush. Price, 10 cts. per lb.; \$1.00 per bushel; \$7.00 per 100 lbs. *Fancy*.—Weight, 32 lbs. per bushel. Price, 18 cts. per lb.; \$5.00 per bushel of 32 lbs.; \$15.00 per 100 lbs.

HARD FESCUE.

Botanical, *Festuca duriuscula*. German, *Harter Schwingel*.
French, *Fétuque durette*.

Perennial. Time of flowering, June. Height, 18 to 24 inches.

A dwarf growing, very hardy grass of great value, and the

most robust of the dwarf grasses. Succeeds in dry situations, and is one of the most important of the Fescues for permanent pastures. In hay its presence indicates a superior quality, and after being mown it produces a very large quantity of food. It comes early, stands long droughts well; stock eat it with avidity, especially sheep. The common name solely applies to the flower heads, which, when ripe, become decidedly hard; the herbage, however is decidedly tender and succulent. From the fineness of its foliage and its resistance to drought in summer and cold in winter, it is well adapted for lawn grass mixtures. It is somewhat inclined to stool, but when sown with other grasses, if sown evenly, it will not show this characteristic. Sow (if alone) $2\frac{1}{2}$ bushels per acre; weight, about 12 lbs. per bushel. Price, 25c. per lb.; \$2.50 per bushel; \$18.00 per 100 lbs.

HARD FESCUE

We are prepared to make up Special Mixtures of Grass Seeds for particular purposes—situations or conditions—and any correspondence in regard to such will receive our prompt attention.—P. H. & Co.

TALL MEADOW FESCUE.

Botanical, *Festuca elatior*. German, *Hoher Wiesen-Schwingel*. French, *Fétuque élevée*.

Perennial. Time of flowering, June and July. Height, 3 to 4 feet.

A coarse growing grass, nevertheless it is very nutritive and productive, and is naturally adapted to moist, stiff or clayey soils and shady woods, and is considered by some authorities to be one of the best grasses in cultivation. It is greedily eaten by stock when green, and should be included in all permanent pasture mixtures for moist or strong lands. It also makes a very good quality of hay, but is too robust for lawn purposes. Sow (if alone) $2\frac{1}{2}$ bushels per acre; weight, about 14 lbs. Price, 32 cts. per lb.; \$4.00 per bushel; \$28.00 per 100 lbs.

TALL MEADOW FESCUE.

VARIOUS-LEAVED FESCUE.

Botanical, *Festuca heterophylla*. German, *Wechselblättriger Schwingel*. French, *Fétuque feuilles variées*.

Perennial. Time of flowering, June and July. Height, $2\frac{1}{2}$ to 3 feet.

A native of France and a valuable grass for permanent pastures, especially on uplands, and is a very popular continental grass, well adapted where a heavy swath is wanted. It yields a large bulk of herbage, but produces little feed after mowing. Its beautiful, dark green foliage renders it suitable for park mixtures. Sow (if alone) 3 bushels per acre; weight, about 14 lbs. per bushel. Price, 25 cts. per lb.; \$2.75 per bushel; \$18.00 per 100 lbs.

VARIOUS LEAVED FESCUE

SHEEP'S FESCUE.

Botanical, *Festuca ovina*. German, *Schafschwingel*. French, *Fétuque des brebis*.

Perennial. Time of flowering, June and July. Height varies from 6 to 20 inches.

SHEEP'S FESCUE.

For good upland or dry pastures, a large portion of this grass should be included in the mixture, especially if it is used for sheep grazing, as it is greatly relished by them. The Tartars generally pitched their tents in proximity to this grass on account of its value to their herds. It is short and dense in growth, and its excellent nutritive qualities more than counterbalance its slight deficiency in quantity. Its fine foliage and compact habit render it desirable for lawn mixtures. Sow (if alone) $2\frac{1}{2}$ bushels per acre; weight, about 12 lbs. per bushel. Price, 25 cts. per lb.; \$2.50 per bushel; \$18.00 per 100 lbs.

FINE LEAVED SHEEP'S FESCUE.

Botanical, *Festuca ovina tenuifolia*. German, *Feinblättriger Schwingel*. French, *Fétuque à feuille menue*.

Perennial. Time of flowering, June. Height varies from 8 to 24 inches.

This is similar to the Sheep's Fescue mentioned above, except that the leaves are much finer. Cattle are very fond of it, and it grows naturally in many parts of the world. It is found in the Arctic regions, in the wilds of New Zealand, and in Europe. In the northern districts of Great Britain it sometimes forms the whole food of the Highland cattle. It is very suitable for permanent pasture, especially on uplands and dry soils. Its rich, dark green gives a fine appearance to hay, and renders it also valuable for lawn mixtures for dry situations.

Sow (if alone) 3 bushels per acre; weight, about 14 lbs. per bushel. Price, 35 cts. per lb.; \$4.25 per bushel; \$28.00 per 100 lbs.

RED or CREEPING FESCUE.

Botanical, *Festuca rubra*. German, *Rother Schwingel*. French, *Fétuque rouge*.

Perennial. Time of flowering, June and July. Height, 2 to $2\frac{1}{2}$ feet.

This grass is of a remarkable creeping habit and endures severe droughts. Its roots penetrate so deeply into the soil that it remains fresh and green when other varieties are apparently dried up. It is particularly adapted for dry pastures by the seaside and on loose, light soils, the slopes of railroad cuts, etc., if dry. It yields an average bulk of herbage of fair quality, although most nutritious at time of flowering. Sow (if alone) $2\frac{1}{2}$ bushels per acre; weight, about 14 lbs. per bushel. Price, 25 cts. per lb.; \$2.75 per bushel; \$18.00 per 100 lbs.

RED FESCUE

MEADOW FESCUE.

(English Blue Grass or Sweet Grass.)

Botanical, *Festuca pratensis*. German, *Wiesenschwingel*.

French, *Fétuque des prés*.

Perennial. Time of flowering, June and July. Height, 18 to 24 inches.

MEADOW FESCUE.

One of the very best of our natural grasses; very valuable for permanent pastures. It is highly nutritious and greedily eaten by all kinds of stock and is very fattening; makes excellent hay and succeeds well in almost all soils, although it does best in moist land. It is robust in habit and never grows in tufts, although it should be sown with other grasses. It is one of the earliest grasses in the spring and one of the latest in autumn, being particularly valuable for fall and winter pastures. In the climate of Virginia it often remains green under the snow through the winter, and in consequence is frequently called "Evergreen Grass." Sow (if alone) 2½ bushels per acre; weight, about 22 lbs. per bushel. Price, 15c. per lb.; \$2.75 per bu.; \$12.00 per 100 lb.

ITALIAN RYE-GRASS.

Botanical, *Lolium italicum*. German, *Italienisches Raygras*. French, *Ray-gras d'Italie*.

Biennial. Time of flowering, June or July. Height, 18 to 30 ins.

A variety unequalled for producing an abundance of nutritious feed in the early spring, as well as throughout the season, and it gives quick and successive growths until late in the fall, even if cut several times, providing the land is in good condition and not too dry. It is of succulent character and quickly responds to rich food and moisture. It thrives on almost any good soil, but reaches its most perfect state in moist, fertile land. As it is not perennial, it is not adapted for permanent pastures, but for one or two year's lay it is unsurpassed. Sow (if alone) 3 bushels per acre; weight about 18 lbs. per bushel. Price, 11c. per lb.; \$1.80 per bush.; \$9.00 per 100 lbs.

ITALIAN RYE-GRASS.

ENGLISH or PERENNIAL RYE-GRASS.

Botanical, *Lolium perenne*. German, *Englisches Raygras*.

French, *Ray-gras Anglais*.

Perennial. Time of flowering, June. Height, 15 to 24 inches.

This grass is considered invaluable for permanent pastures. It produces an abundance of remarkably fine foliage, tillers out close to the ground and soon forms a compact sward. After being cut it grows up in a very short time and remains bright and green

ENGLISH RYE-GRASS.

throughout the season; it consequently is well adapted for lawn mixtures. It is also a good variety for hay if cut when in blossom, as it is then most nutritious; if cut much later it becomes woody. It flourishes best in situations not too dry or subject to droughts. Sow (if alone) 2½ to 3 bushels per acre; weight per bushel, 18 lbs. Price (extra fine sample), 10 cts. per lb.; \$2.00 per bushel; \$7.00 per 100 lbs.

WOOD MEADOW GRASS.

Botanical, *Poa nemoralis*. German, *Hainrispengras*.

French, *Paturin des bois*.

Perennial. Time of flowering, June. Height, 1½ to 2 feet.

This grass is now classed among our good "Shaded Pasture" grasses, and furnishes a fine succulent and nutritive herbage which is very much relished by cattle. It is splendidly adapted for moist, shady places, and should be included in all mixtures for permanent pastures and lawns for moist soils. It is particularly valuable for lawns over-shadowed by trees. It produces a much thicker growth than either *Poa pratensis* or *trivialis*. Sow (if alone) 2 bushels per acre; weight per bushel, about 14 lbs. Price, 40 cts. per lb.; \$5.00 per bushel; \$35.00 per 100 lbs.

WOOD MEADOW GRASS.

TIMOTHY OR HERD'S GRASS**Of the North.**Botanical, *Phleum Pratense*.German, *Thimolée-Gras*.French, *Fléole des prés*.

Perennial. Time of flowering, June and July. Height, 2 to 3 feet.

This luxuriates in moist, loamy soils, and sometimes, in favorable situations, attains a height of 4 feet, and even on light soils it yields fair crops. It is exceedingly nutritious, particularly when ripe, but as it is then very hard, it is better to cut it soon after flowering. It makes magnificent hay. On dry soils Timothy forms a bulbous swelling at the base of the stems from which the next year's growth starts. It is, therefore, highly injurious under such circumstances to pasture stock on the fall growth, as they trample and cut the leaves off that should protect it during the winter. Even in its most flourishing condition it is more or less injured by pasturing it. Sow (if alone) $\frac{1}{2}$ to 1 bushel per acre; weight per bushel, 45 lbs.

Price, **Henderson's Standard Sample**, 10 cts. per lb.; \$2.00 per bushel; \$4.50 per 100 lbs. (subject to change without notice).

A farmer who always looks for the cheapest and pays little or no attention to the quality and cleanliness of the Timothy, Clover and other grass seed he annually sows, will sooner or later find his farm overrun with weeds, and naturally conclude farming is a failure. The seeds of many of the most pernicious weeds so closely resemble the genuine seeds as to require an expert of long experience to detect them, and the farmer should be certain that the merchant has the expert knowledge. As an instance, hundreds of thousands of pounds of Red Clover heavily adulterated with Yellow Trefoil (a small yellow-flowered annual Clover of little or no value) have in recent years been sold to the unsuspecting farmer by country merchants who did not have the expert knowledge to detect it, and upon whom it had been foisted by unscrupulous dealers, who by means of this adulteration can undersell the market and still make more than a legitimate profit.

CRESTED DOGSTAIL. (Gold Grass.)Botanical, *Cynosurus cristatus*. German, *Kammgras*.French, *Crételle des prés*.

Perennial. Time of flowering, July. Height, 1 to 1½ feet.

A fine, short grass that should enter into all permanent pasture mixtures, especially for dry, hard soils and hills pastured with sheep, as it is very hardy and but little affected by extremes of weather. Sheep fed in pastures where this abounds are less subject to foot rot. It is tender and nutritious and relished by all stock until it commences to ripen; it then becomes wiry. On account of its close growing habit, the dense turf it produces and its evergreen foliage, it is particularly desirable for lawn mixtures. Sow (if alone) $1\frac{1}{2}$ bushels per acre; weight about 21 lbs. per bushel. Price, 50 cts. per lb.; \$10.00 per bushel; \$45.00 per 100 lbs.

CRESTED DOGSTAIL.

KENTUCKY BLUE GRASS.

Also called June Grass, Smooth Stalked Meadow Grass, Green Meadow Grass, and Spear Grass.

Botanical, *Poa pratensis*. German, *Wiesen Rispengras*. French, *Paturin des prés*.

Perennial. Time of flowering, June. Height, 10 to 15 inches.

This valuable grass is suited to a variety of soils, from an average dry one to moist meadows. It is exceedingly popular in most parts of the country as a pasture grass. It is very productive, unusually early, and presents a beautiful green appearance in early spring, while other grasses are yet dormant. It furnishes delicious food for all kinds of stock all through the season—unless there should be a protracted drought, which would cause it to slowly dry up—until the fall rains, when it springs forth and grows luxuriantly, and furnishes pasturage until frozen up in winter.

KENTUCKY BLUE GRASS.

In Kentucky and similar latitudes, when allowed its full fall growth, it makes fine winter pasture, and sheep, mules and horses will paw off the snow and get plenty to live on without other food. It makes a splendid lawn grass, forming a thick turf, and being of very even growth, producing only one flowering stem a year, while many other grasses continue to shoot up flower stalks throughout the season. Kentucky Blue Grass also makes hay of excellent quality, but the yield for this purpose is not equal to some other grasses. Sow (if alone) 3 bushels per acre. Though offered at the standard weight of 14 lbs. per bushel, we keep nothing but fancy re-cleaned seed, free from chaff, the natural weight of which is 20 to 25 lbs. per measured bushel. Price, 18 cts. per lb.; \$2.00 per bushel of 14 lbs.; \$14.00 per 100 lbs.

YELLOW OAT GRASS. (True.)Botanical, *Avena flavescens*. German, *Goldhafer*.

Perennial. Time of flowering, July. Height, 18 inches.

Particularly adapted for dry meadows and pastures. Being of somewhat slow growth it should be sown with other grasses, and does well with Crested Dogtail and Sweet Vernal. It should be included in all permanent pasture mixtures for light, dry and calcareous soils. It is highly relished by cattle; comes very early and makes a very sweet hay, after which a large aftermath is produced. Sow (if alone) 3 bushels per acre; weight about 7 lbs. per bushel. Price, \$1.25 per lb.; \$8.50 per bushel; \$115.00 per 100 lbs.

YELLOW OAT GRASS.

Your Special Mixture of Grasses for Permanent Pasture has given entire satisfaction. No more Timothy for me.—CHARLES EVERDING, Branford, Conn.

Drought Resisting Grasses.

BERMUDA GRASS.

BERMUDA GRASS. (*Cynodon Dactylon*.)—This is a grass that is eminently adapted for the Southern States, as it withstands drought and the scorching rays of the sun better than any other variety. In all tropical countries, this grass is highly esteemed for its drought-resisting qualities, and also for the peculiar habit of its growth; the wiry roots of the grass in running over the surface of the ground form a strong fibrous matting. This has caused it to be sown largely for the purpose of binding banks of creeks and dams, etc. For lawns it is also highly prized, as while all other grasses are burned up during the hot season, Bermuda Grass will remain green, and if regularly mown, it will make quite a velvety carpet. The only drawback is that in winter it looks a little brown, but in the Southern States, an all the year round green lawn can be maintained by sowing English Rye-grass every fall at the rate of 50 lbs. per acre, and harrowing or raking into the Bermuda Grass sod. Bermuda grass seed should be sown in the spring, as it will not germinate until warm weather comes. As a grass for hay or pasture, it matures and gives its first cutting ordinarily in June. It does not succeed further north than Virginia. Sow 8 lbs. per acre. (See cut.)

Price of Seed, 90 cts. lb.;
100 lbs., 80 cts. lb.

AWNLESS BROME GRASS. (*Bromus inermis*.) When we introduced and offered seed of this grass ten years ago, our experimental experience with it enabled us to claim for it **drought-resisting qualities** which have since been amply proven. In addition to this quality, we now claim for it **extreme hardiness**, it having stood uninjured the severe winters of Northern Canada with the snow covering purposely removed to test its hardiness. It is now extensively grown throughout all parts of Canada and the United States, and wherever known it is much appreciated both for hay and pasture. With the possible exception of Florida it thrives throughout the United States.

Though of course it will not produce so abundantly, yet, **it will grow on lands too poor for nearly all other valued grasses**, and under climatic conditions which would render impossible the cultivation of nearly all other varieties. The following extracts from reports give some idea of its wide geographical value:

James Fletcher, of Canadian Experimental Farms, in his evidence before Agricultural Committee of the Canadian Parliament, March 10th, 1893, said: "Of all the imported grasses this is undoubtedly the most valuable. It grows a heavy crop four feet high. It is the one grass above all others reported upon favorably and uniformly from the North West Territories. I sent out over 2,000 packets of seed for testing, and it was spoken of most highly by every person who sent in a report. These reports show that it is of value in the West, and the experience of it in Ontario, Quebec and the Maritime Provinces is no less favorable. It is an extremely heavy and uniform cropper."

Bulletin, Department of Agriculture, Washington, D. C., says: "This grass certainly presents a fine appearance, and the Experiment Station reports, nearly without exception, praise it in the highest terms. It is evident from these reports that the grass is little influenced by changes of climate. In Canada, in Mississippi, Kansas, Colorado, Wyoming and California it seems to do equally well. It is resistant to intense cold, to sudden and extreme changes of temperature, and stands protracted drouth better than any other variety."

Bulletin, Mississippi Experiment Station, says: "Endures our summer heat and drought much better than Rescue Grass, and, being a perennial, is much more permanent. It remains fresh and green during a larger part of the year than any other grass we have."

Bulletin, United States Grass Experiment Station, Garden City, Kans., says: "Bromus inermis is the grass for this Western country; it is the best out of seven or eight hundred varieties tried on this Station."

Sow 35 lbs. per acre. (See cut.)

PRICE.—20 cts. lb.; \$2.25 bushel (of 14 lbs.); \$16.00 100 lbs.

JOHNSON GRASS. (*Sorghum Halapense*.) As a meadow or hay grass, this variety is highly esteemed in the South, where during the hottest and driest seasons it can be relied upon to yield heavily. The aggressiveness of this grass has caused it to be considered a veritable curse by some farmers by spreading into cultivated fields, but it is highly esteemed by those who understand it. Where it is desired to keep it within bounds, the seed should never be allowed to ripen as it spreads from the seeds disseminated through hay much more than is generally supposed. Besides when fully ripe, the feeding value is little better than Corn Stalks, but cut before the seed tops emerge from the sheathes, its value as shown by chemical analysis is better than Timothy hay. When cut at time recommended, the embryo seeds are unpollinated and imperfect, and are incapable of sprouting, so there is no possibility of introducing this grass where it is not wanted by using such hay. We only advise the sowing of Johnson Grass where it is desired to remain as permanent meadow. Should be sown August to October, or in Spring, at the rate of one bushel per acre. Price, 14 cts. lb.; \$3.00, bushel of 25 lbs.; \$11.00, 100 lbs.

TEXAS BLUE GRASS. (*Poa Arachnifera*.) A perennial creeping grass, closely related to Kentucky Blue Grass, but stands drought and heat better, and is, therefore, of greater value in the Southern States, as a winter pasture or Lawn Grass. An all the year round green pasture or lawn can be maintained, even in the extreme South by sowing half each Bermuda and Texas Blue Grass, neither seeming to crowd out the other, Texas Blue being one of the few grasses able to withstand the aggressive habit of Bermuda. Sow during showery weather in spring or fall, preferably in the fall. Parties ordering should be careful to state **Texas Blue Grass**, so as not to confound it with **Kentucky Blue Grass**. Price, 20 cts. per packet; 40 cts. per oz.; \$1.00 per 1/4 lb.; \$3.00 per lb.

AWNLESS BROME GRASS (BROMUS INERMIS)

ALFALFA

The greatest
drought-resisting

and deepest rooting
Forage Plant known.

ALFALFA. (*Medicago Sativa*.)

There is no plant which can be fed green or cured into hay that is deserving of wider cultivation than Alfalfa, and there is no state in the Union where it cannot be successfully cultivated.

DEEP ROOTING.—Its drouth resisting qualities are remarkable, rendered so by the wonderful root formation, THE ROOTS GOING DOWN DEEPER THAN ANY OTHER PLANT, eight to twelve feet being usual, and a depth of thirty feet has been reported. The photograph, showing a caved off embankment, gives a good idea of the remarkable roots. This deep rooting quality enables it to reach and utilize fertilizer that has leached beyond the reach of all other plants.

LIME NECESSARY.—One of the essentials for its success is LIME in some form, either in the soil or subsoil, and if lime or marl is present, profitable crops may be expected. Therefore, if it is known that there is no lime in the soil, it should be applied as a top dressing when the land is being plowed preparatory to sowing the seed.

GOOD DRAINAGE is necessary, for an excess of surface water soon rots the roots and under these conditions the plants seldom live longer than one or two years, though excellent results have been obtained on clay soils, provided always that lime is in the soil or subsoil, either naturally or applied.

YIELD.—When fully established it yields as much as eight to twelve and sometimes as high as sixteen tons of cured hay per acre at three to four cuttings each year. The hay is palatable and very nutritious.

By the New Jersey Experiment Station and other competent authorities the feeding value of the hay is placed at \$20.00 as compared with Timothy at \$12.00 per ton. As a soiling plant for cutting and feeding green during the summer, it is of the utmost value on all dairy farms, as it is ready for first cutting about the time for planting Corn and about as early as green Rye can be cut, and is ready for cutting about every six weeks thereafter. *Alfalfa should be cut every time it begins to blossom, whether the growth is short or tall, for if allowed to form seed, it shortens the life of the plant.*

Owing to slow growth the first season, almost the entire growth going to roots, the land should be clean and free from weeds, and it is, therefore, best to follow Potatoes, Corn or some other crop that has been thoroughly hoed and kept free from weeds.

TIME OF SOWING.—The best time to sow in this section is in April, and if the land is thoroughly clean and free from weeds, it may be sown broadcast, using 20 to 25 lbs. per acre, and such weeds as appear kept down by the mowing machine with the cutter bar raised so as to avoid cutting near the crowns of the young plants. *But, even under the most favorable conditions the better plan is to drill the seed in rows 16 inches to 2 feet apart at the rate of 15 to 20 lbs., per acre.* As soon as the young plants are high enough to mark the rows, cultivation should begin, and if the soil is kept clean and mellow by frequent stirrings, the Alfalfa if cut often and not allowed to go to seed, will after the first year cover the ground and easily keep ahead of all weeds. **15 cts. lb.; \$8.00 bushel of 60 lbs.; \$13.00 per 100 lbs.**

CLOVERS.

WHITE CLOVER.

WHITE CLOVER.

Dutch or Honeysuckle Clover.

Botanical, *Trifolium repens*. German, Weissklee. French, Trefle blanc.

Perennial. Time of flowering, May to September. Height, 6 inches (creeping).

A very hardy creeping variety, which accommodates itself to a great variety of soils, but grows most luxuriantly in moist ground or in wet seasons. It is valuable in mixtures for permanent pastures and lawns, and also prevents the soils from being washed by heavy rains. Sow (if alone) 8 lbs. per acre; weight per bush., 60 lbs. (See cut.) 22 cts. per lb., \$12.00 per bushel, \$20.00 per 100 lbs.

MAMMOTH OR PEA VINE RED CLOVER.

(Perennial Red Clover, Cow Grass.)

Botanical, *Trifolium pratense perenne*. German, Bullenklee. French, Trefle vivace d'Angleterre.

Perennial. Time of flowering, July. Height, 3 to 5 feet.

Quite distinct from the common Red Clover, and valuable for purposes for which the latter is entirely unsuited. It lasts longer and is two or three weeks later than common Red Clover. Of very robust growth, yielding enormous bulk; it is very valuable for reclaiming exhausted lands. Sow (if alone) about 12 lbs. per acre; weight, 60 lbs. per bushel. **Henderson's Standard Sample** (extra re-cleaned), (See Cut.) 14 cts. per lb., \$7.25 per bushel, \$12.00 per 100 lbs.

JAPAN CLOVER. (*Lespedeza striata*.)

Is not a true clover, but in appearance and habit of growth much like White Clover. It is especially valuable in the Southern States where it will flourish on poor and exhausted soils, too poor to produce profitable crops of any other forage plant. It is an annual, but once sown it re-seeds itself from year to year, and in that way will last indefinitely, and is pronounced by competent authorities as the best pasture plant for impoverished soils in the Southern States. Sow 14 lbs. per acre; weight, 20 lbs. per bushel; 30 cts. lb., \$5.50 bushel of 20 lbs., \$25.00 100 lbs.

WHITE BOKHARA. (Sweet Clover.)

Botanical, *Melilotus alba*. German, Wunderklee. French, Trefle de Bokhara.

Biennial. Time of flowering, June to September. Height, 2 to 4 feet.

This is a tall shrubby plant, bearing quantities of small white flowers of delicious fragrance, and is exceedingly valuable for bees, and is also of great value to plow under as a fertilizer. Sow 10 lbs. per acre. 35 cents per lb. \$18.00 per bushel, \$30.00 per 100 lbs.

CRIMSON OR SCARLET CLOVER.

(*Trifolium incarnatum*.)

The value of Scarlet Clover is now thoroughly established, and all lands from which crops have been harvested during the summer and fall should immediately be sown with Scarlet Clover for plowing under the following spring. It may be sown among corn, tomatoes, turnips, etc., at the time of last hoeing, or after potatoes, melons, cucumbers, etc., have been harvested, or on grain-stubble and harrowed in. In latitude of N. Y. City, sow July 15th to Sept. 15th, but August is the best month. Sow 15 lbs. per acre. Choice American-grown seed. (See Cut.) 10 cts. per lb., \$5.00 per bushel, \$8.00 per 100 lbs.

Clovers are one of the most important factors to success in Agriculture. They exhaust the soil less than any other class of plants giving equal bulk; they derive nitrogen (the most costly element in fertilizers) from the atmosphere, and actually add to the fertility of the land. Clovers are of the greatest value for plowing under for supplying humus and nitrogen.

RED CLOVER. (Common or Medium Clover, June Clover.)

Botanical, *Trifolium pratense*. German, Kopfklee, roth bluhender. French, Trefle rouge.

This is by far the most important Clover for practical agriculture. It grows luxuriantly in stiff loams, and is fond of lime, though it adapts itself to a variety of soils. In the Northern States it is generally sown in the spring, and in a short time yields abundantly. Sow (if alone) 12 to 14 lbs. per acre. If sown in spring after Timothy, 6 to 8 lbs. per acre. **CAUTION.**—Every care should be exercised in buying Red Clover, for there is always on the market at a cheap price large quantities, badly infested with weed seeds, which in size and appearance closely resemble Red Clover, and cannot be cleaned out. For some years past immense quantities of Red Clover, purposely adulterated with Yellow

Trefoil (a small yellow-flowered annual clover of little or no value), have been sold to the unsuspecting farmer by country merchants who did not have the expert knowledge to detect it, and upon whom it had been foisted by unscrupulous dealers. Our seed is of high germination, pure and free from weed seeds and foreign matter. Price (subject to change without notice), **Henderson's Standard Sample** (extra re-cleaned), 13 cts. per lb., \$6.60 per bushel, \$11.00 per 100 lbs.

ALSIKE OR HYBRID CLOVER. (Swedish Clover.)

Botanical, *Trifolium hybridum*. German, Bastard Klee. French, Trefle hybride.

Perennial. Time of flowering, July and August.

This is one of the hardiest of all the Clovers. It succeeds on any soil, and resists extremes of drought and wet. It yields enormously, and can be cut several times in a season; is very nutritious, and is good for either green food, pasturing or cured for hay. It is valuable for sowing with other grasses and clovers, as it forms a thick bottom, and increases the yield of hay. Alsike Clover frequently produces heavy crops on soils on which Red Clover will not grow. We strongly advise farmers to add 2 or 3 lbs. per acre to their usual seeding of Red Clover with Timothy. Sow (if alone) 8 lbs. per acre; weight, 60 lbs. per bushel, 16c. lb., \$8.50 bushel, \$14.00 per 100 lbs.

COW GRASS, MAMMOTH OR PEA VINE CLOVER.

CRIMSON CLOVER.

Japanese Millet

COPYRIGHT 1899 16 TONS PER ACRE GREEN FODDER BY PETER HENNINGSEN

JAPANESE MILLET. (*Panicum crus-galli major*.)

The best recent introduction for the Silo and Cutting Green.

Entirely distinct from any other millet, grows tall and produces an enormous crop. It may be sown from the middle of May to the 1st of July, broadcast, at the rate of 15 lbs. per acre, but it is better to sow it in drills, 12 to 18 inches apart, using 10 to 12 lbs. per acre, and hoed between the rows to keep down all weeds until the plant attains a height of 12 to 18 inches, when its rapid growth will smother all weeds. It grows 6 to 8 feet high, stands remarkably well notwithstanding its great height, and yields from 10 to 12 tons green fodder per acre. When cured it makes an excellent quality of hay, and its feeding value is far superior to corn fodder, and it is much relished by all kinds of stock, whether green or cured. If to be made into hay, cure as you would a heavy crop of clover. An ideal ensilage mixture may be composed of two parts of this millet to one part of soja beans (*see page 24*), mixed when filling the silo. The soja beans supply the albuminoids and fat in which the Corn and Millet are deficient. ***This mixture forms a complete balanced ration for milch cows without the addition of grain,*** though it is, of course, advisable to feed grain occasionally as a change. This ensilage combination will certainly become popular, and when generally used, as we predict it will be, it will result in a saving of hundreds of thousands of dollars annually to the dairymen and farmers of the United States. This Millet does not endure drought well, except it be sown early in retentive soil, and it is not adapted to the climate, nor is it recommended for the Southern States; but north of Washington, and especially for good, rich soils, we confidently recommend its general cultivation. It will produce a fair second cutting, if sown early in May, and cut when in blossom. (*See cut.*)

Especially valuable for the Northern and New England States.

FROM EIGHTH ANNUAL REPORT
OF THE
HATCH EXPERIMENT STATION,
OF THE
MASSACHUSETTS AGRICULTURAL COLLEGE.

FOR GREEN FODDER AND THE SILO. "Of Japanese Millet several pieces, of an acre or more each, were sown for feeding green or for the silo. The earliest, sown broadcast about the middle of May on rich land, one peck of seed to the acre, averaged about six feet in height, and produced over 15 TONS PER ACRE. This was cut from day to day, beginning before the millet had blossomed. Another field of about an acre, sown the last of June, yielded at the rate of rather over 18 tons per acre. Another field, sown July 26th, after a crop of hay was removed, yielded about 12 tons per acre. The crop of the two last fields was put into the silo. That cut from day to day, and fed to cows, was much relished. Its superiority to well-eared flint corn fodder was very apparent. Cows with both before them always take the millet first; they consume it without waste, while they are apt to leave a part of the stalks of the corn as it approaches maturity. In alternating this feed with corn fodder, the cows invariably increased in milk when put upon the millet, and fell off when changed to corn.

It has been ensiled with soja beans,—about two parts by weight of the millet and one of the beans. This combination makes very superior silage."

FOR HAY. "A more extensive trial of this millet for hay has been carried out this year than ever before. It is coarse and difficult to dry. I have always felt that these qualities would render it undesirable as a crop for hay. We have, however, cured it successfully this year, mostly in small cocks, as clover is often cured; and the result is encouraging. The hay is coarse, but is freely eaten by horses, being preferred to a good sample of timothy, red top and clover mixture. The yield of the millet is very large, having on good land amounted to 6 tons per acre of well cured hay. It will produce a fair second cutting if sown early in May and cut when in blossom."

Hundreds of our customers who have procured seed of Japanese Millet from us during the past two seasons can endorse the above.

Price, 10c. lb.; 10 lbs., 80c.; 100 lbs., \$7.00.

MILLET.

Excellent catch crops for sowing during the summer, and are especially valuable in seasons of short hay crop. They cure into excellent hay if cut when in blossom; if allowed to ripen they become too woody.

HUNGARIAN. (*Panicum Germanicum*.)—Is the quickest of catch crops for hay, and as it may be sown any time during the summer months up to middle of August, it is invaluable for overcoming a shortage of the regular hay crop. Many farmers now occupy their land with other crops, and for their hay depend entirely on Hungarian Grass, which they can sow after other crops have been harvested. Sow 1 bushel per acre. (See cut.) 10 cts. lb., \$1.40 bushel, \$2.75 per 100 lbs., 10 bushels and upwards, \$1.30 bushel.

GERMAN OR GOLDEN. (*Panicum Miliaceum Aureum*.)—This variety is considerably larger than Hungarian and yields a much heavier crop, but is later and not so quick growing, consequently cannot be sown much after the fourth of July in this latitude. To maintain its heavy cropping character, seed of this variety needs to be specially cultivated.

Our seed is specially grown and selected, and will produce nearly double the crop of seed not so grown and which can be offered at a cheaper price. Sow one bushel per acre. 10 cts. lb., \$1.50 bushel, \$3.00 per 100 lbs., 10 bushels and upwards, \$1.40 bushel.

PEARL MILLET. (*Pennisetum Spicatum*.)—Is not so hardy as the other varieties, and succeeds best in latitudes south of New York. The first cutting should be made when about 3 feet high; this will cause it to tiller and spread, and as the season advances and becomes warmer, it grows with marvellous rapidity. No other crop will yield as much forage as Pearl Millet when sown on richly manured land. Sow in drills, 5 to 6 lbs. per acre; if broadcast, 8 lbs. per acre. Weight, per bushel, 56 lbs. (See cut.) Clean Seed, 12 cts. lb., \$10.00 per 100 lbs.

HUNGARIAN MILLET.

PEARL MILLET.

PLANT IN ROWS OR HILLS.

SORGHUMS.

CULTIVATE SAME AS CORN.

TEOSINTE. (*Reana Luxurians*.)—Plant resembles Corn, but is more leafy and tillers enormously. After cutting it grows again with remarkable rapidity. Those having only a small amount of land on which it is desired to produce the maximum amount of forage should sow Teosinte. Plant in drills, 6 to 8 lbs. per acre. \$1.00 lb., 10 lbs. and upwards, 90 cts. lb.

RURAL BRANCHING DOURA. (*Millo Maize, Sorghum Vulgare*.)—A wonderfully productive fodder plant that makes a great amount of foliage, and can be cut several times in the season. Plant 4 to 5 lbs. to the acre. 12c. lb.; 100 lbs., \$6.00.

YELLOW BRANCHING DOURA. (*Yellow Millo Maize*.)—Earlier than the Rural Branching, and of taller growth, often attaining a height of 9 to 12 feet, but it does not stool out quite as much from the ground, although it branches out from the joints. It produces an enormous quantity of fodder, for which stock show a marked partiality. Plant 4 lbs. to the acre. 12c. lb.; 100 lbs., \$6.00.

BROOM CORN, EVERGREEN. Entirely free from all crooked brush, and remains strictly green, consequently always commands the highest market price. 12c. lb.; 100 lbs., \$6.00.

JERUSALEM CORN. Grows about three feet high, and is one of the surest crops for dry countries and seasons, having in the driest season in the past 15 years in Kansas produced a crop, without irrigation, when other forage plants perished. Five pounds will plant an acre. 12c. lb.; 100 lbs., \$8.00.

WHITE KAFFIR CORN. Grows four to five feet high, with numerous wide leaves, and makes an excellent fodder, either green or dried which is highly relished by all kinds of stock. It should be sown in drills three feet apart. (See cut.) 12c. lb.; 100 lbs., \$6.00.

RED KAFFIR CORN. This very leafy and juicy variety is taller but more slender than the white, ripens a little earlier and yields heavier. It is also valuable for sowing on poor land, as it will give better results under these conditions than the White Kaffir Corn, as well as other Sorghums, most of which require a well-enriched soil. (See cut.) 12c. lb.; 100 lbs., \$6.00.

SUGAR CANE, Early Amber.

Of great value for cutting green and feeding green during hot weather in summer, when pastures are apt to be burned up. Being a tropical plant, it makes its best growth during just such weather, and cattle, horses and sheep relish it, and it may be fed to them with safety. Sow in drills, 10 to 12 lbs. per acre; broadcast, 20 to 25 lbs. per acre. Should be cut when about 2 feet high, and will yield several such cuttings. Earlier than the Orange and may be grown even in Northern States. Cured in the same way as a heavy crop of Clover it makes an excellent quality of hay. 12 cts. lb.; 100 lbs., \$6.00.

SUGAR CANE, Early Orange. Produces a larger and heavier growth than the Amber, but is later. 12 cts. lb.; 100 lbs., \$6.00.

KAFFIR CORN.

FIELD CORN.

DENT VARIETIES.

If wanted by mail add 15 cts. per quart for postage. Corn planted in hills requires eight to ten quarts per acre.

HENDERSON'S EUREKA.

A PERFECT CORN.

The Heaviest Yields. Large Handsome Ears.

The photograph gives a very inadequate idea of the magnificent appearance of this Corn. It is the result of the most careful and persistent selection by a wealthy Pennsylvania farmer who makes Corn his hobby and his pride. For sixteen years he has, from a planting of 80 to 100 acres, selected only the best ears at husking time, planting these by themselves and continuing this selection every year without interruption.

He began the selection by offering his huskers five cents for every ear weighing two pounds and over, but that soon became ruinous, and in later years a man was appointed at husking to do nothing but look out for ideal ears.

The ear, always set low on the stalk, is immense, with small red cob, the grain a clear bright reddish yellow, large and of great depth, filled out full over both ends. It runs 18 to 22 rows, and an important feature of the selection clearly shown in the photograph is that *the rows run even, the same number at tip and butt*, thereby materially increasing the amount of shelled Corn per acre. Besides this system of selection he has purchased new varieties and crossed with his own if they showed any specially desirable features.

Last season we tested it in our trial grounds alongside every variety of its class which we could procure, and none approached it in uniformity of perfect large sized ears. May be planted with safety as far North as New York City, and even further North in favorable locations. As an indication of its productiveness, a nine acre field yielded at the rate of 144 bushels per acre. (See cut.)

20 cts. qrt.; 75 cts. peck; \$2.50 bushel; 10 bushels and upwards at \$2.25 bushel.

All the varieties offered below in lots of 10 bushels and upwards, \$1.50 per bushel.

EARLY MASTODON. (*The Earliest Large Dent Corn.*) Produces large ears for an early variety. It grows strong at a medium height, with broad, heavy leaves, and makes the finest shelled corn in appearance of any, being purely Dent. We can recommend the Mastodon as being one of the best large-eared early corns in existence. 15 cts. quart; 50 cts. peck; \$1.60 bushel.

GOLDEN BEAUTY. This new corn has given most excellent satisfaction. At the Pennsylvania State Fair it was awarded first prize. It is exceedingly productive; a large proportion of the stalks produce two fine ears. It is undoubtedly the largest grain and handsomest yellow corn. The ears are of perfect shape, with from ten to fourteen rows, and filled out completely to the extreme end of cob. The cobs are unusually small. The richness of color and fine quality of grain make it very superior for grinding into meal. 15 cts. quart; 50 cts. peck; \$1.60 bushel.

EXTRA EARLY HURON. As early as most of the flint corns, and may be grown even in the most Northern States and in Canada. The grain is somewhat narrow, but long and deep, with small cob, and we can recommend it as the most valuable Extra Early Dent Corn ever introduced. 15 cts. quart; 50 cts. peck; \$1.60 bushel.

QUEEN OF THE PRAIRIE. (*Pride of the North.*) This variety is valuable to grow North, as it matures early. Planted as late as July 4th, it has fully matured by October 1st. The ears grow 8 to 10 inches in length, from 14 to 16 rows, slightly tapering. The kernels are closely set together on the cob, of a light orange color at the outer end, darker in color lower, and makes excellent meal. 15 cts. quart; 50 cts. peck; \$1.60 bushel.

EARLY BUTLER. A cross from Pride of the North, and has the smallest cob of any Dent Corn in cultivation. It is also the very earliest Dent Corn and is very profitable to grow. It is just the corn for northern farmers—grows quick and strong, has small cobs, very long grains, and good-sized ears. 15 cts. quart; 50 cts. peck; \$1.60 bushel.

HUNDRED DAY BRISTOL. A very early variety of wonderful productiveness. The ears being remarkably large for such an early ripener; the grain is a light yellow, with small cob. 15 cts. quart; 50 cts. peck; \$1.60 bushel.

LEAMING. Ears are of good size, set low down, and nearly always grow two to each stalk. Very small, red cob, with a deep, long grain, of a rich golden color. It matures reasonably early, and if planted by the first of June, will generally ripen, and be fit to husk and crib early in September. Has yielded one hundred bushels per acre. 15 cts. quart; 50 cts. peck; \$1.60 bushel.

WHITE CAP YELLOW. An early variety, said to produce better results on poor, thin or sandy soil than any other variety, and is less affected by drought. The grain is handsome yellow in color, with white tips. 15 cts. quart; 50 cts. peck; \$1.60 bushel.

HICKORY KING. Entirely distinct and has the largest grains with the smallest cob of any white corn. So large are the grains and so extremely small the cob that a single grain almost completely covers the cob section. The stalks, of strong, vigorous growth, generally bear two good ears each, and occasionally three. It is not, however, considered a safe crop north of Pennsylvania. Will make more shelled corn to a given bulk of ears than any other variety. 15 cts. quart; 50 cts. peck; \$1.60 bushel.

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FLINT CORN.

10 bushels and upwards, \$1.50 per bushel.

LONGFELLOW.—A large 8-rowed yellow flint variety well adapted for the Northern States. This fine field corn is the result of careful selection in a family of Massachusetts farmers for 45 years. The ears are remarkably long (*see cut*), some of them measuring 15 inches, and oftentimes two or more good specimens grow on one stalk. Grain large and broad and yellow. The cob is quite small. It is the largest variety of yellow field corn safe to plant in the latitude of Massachusetts, where it is quite extensively grown. One grower reports 115 bushels shelled corn from an acre. This is the variety that took the first premium among the flint corns at the great exhibition at Chicago a few years ago. 15 cts. qt.; 50 cts. pk.; \$1.60 bush.

COMPTON'S EARLY.—The earliest known yellow flint variety, ripening in from 76 to 85 days. It is a handsome 10 and 12 rowed sort, very productive, and will ripen in the Northern States. Ears 10 to 12 inches long. Stalks 8 to 10 feet in height. Ears well filled. 15 cts. quart; 50 cts. peck; \$1.60 bushel.

LARGE WHITE FLINT.—Handsome ears, large and well filled, kernels white and of fine quality. A productive and first-class sort. 15 cts. quart; 50 cts. peck; \$1.60 bushel.

LARGE YELLOW FLINT.—(Early Canada Yellow). Similar to the above excepting in color; largely grown in the extreme north; matures in about 90 days. 15 cts. quart; 50 cts. peck; \$1.60 bushel.

KING PHILIP.—Coppery red. Very early. This is one of the oldest and best known of the flint varieties. Usually matures three months after planting. Ears large sized and handsome, measuring 10 to 12 inches long. 15 cts. quart; 50 cts. peck; \$1.60 bushel.

RURAL THOROUGHbred WHITE FLINT.—In appearance this closely resembles the old white flint, but the plant branches and suckers more, and is therefore valuable for ensilage in the Northern States, as well as for the grain. 15 cts. quart; 50 cts. peck; \$1.50 bushel.

POP CORN.

WHITE PEARL.—Smooth grained ears, 4 to 5 inches long, by $\frac{7}{8}$ to $1\frac{1}{8}$ inches diameter, good for either family or market use. 10 cts. lb.; 100 lbs., \$8.00.

EARLY AMBER RICE.—A new and distinct shade of color, it matures very early and is in every respect a first-class pop corn. 15 cts. lb.; 100 lbs., \$12.00.

WHITE RICE.—(Rat Tooth.) A very fine white variety, ears 4 to 5 inches in length, and 1 to $1\frac{1}{2}$ in diameter. Kernel pointed. Especially salable among the retail grocers. 10 cts.; 100 lbs., \$8.00.

Buy Corn for Feed.

Buy Seed Corn for Seed.

LONGFELLOW CORN

CORN For Fodder and ENSILAGE.

Is not grown nearly so much as it should be, and it would pay farmers, instead of growing so much cheap grain, to turn their attention to stock-feeding and dairying, and thereby not only make as much money but improve the fertility of the farm. Corn is, undoubtedly, the best of the plants for the silo, and in these days of sharp competition in the dairy business, *no dairy, whether for milk or butter, can be profitably run without an abundance of ensilage, especially when it is made of the combination of Corn and Soja Beans as recommended on page 24.* For though Corn is undoubtedly the most serviceable crop for ensilage, it is deficient in albumenoids or flesh formers, and this deficiency is supplied by the Soja Beans which are exceedingly rich in albumenoids, thereby making a complete balanced ration and a

SAVING IN FEED BILLS OF HUNDREDS OF THOUSANDS OF DOLLARS annually to the dairymen and stock-feeders of the United States. Every year the testimony becomes stronger that fodder corn should not be sown broadcast. It may be planted in hills, but the largest crops can be raised by planting in rows about three feet apart and thoroughly cultivating. The corn should, if possible, reach the glazing stage, as in that condition it makes a better quality of ensilage. In the North, Rural Thoroughbred and Early Mastodon are the best for ensilage, being early, large, and ear well. Further south, the Southern Horse Tooth and Improved Early Horse Tooth produce the largest crops and are the most satisfactory. Especially on farms where a large amount of ensilage corn is planted, we recommend that two or three varieties be used, so that the work can then extend over several weeks if necessary, and all put in the silo in proper condition.

SWEET FODDER CORN. Best for cutting and feeding green during the summer months. This is better than any field corn, from the fact that it is so very sweet and nutritious that cattle will eat every part of the stalk and leaves with relish. Drill thickly, in rows three feet apart, using $1\frac{1}{2}$ bushels of seed per acre. \$1.75 bushel; 10 bushels and upwards, \$1.60 bushel.

SOUTHERN HORSE TOOTH. Grows to a large size, is very leafy and well adapted for ensilage. Large quantities of this corn are sold by feed and other stores which usually result in disappointment to the farmer. There is no corn more difficult to cure or keep properly, and much of it is kiln-dried, while large quantities have been stored in elevators and gone through a sweating process which has destroyed the germ. The stock we offer is carefully selected and sun-dried and of high germination. Price, \$1.20 bushel; 10 bushels and upwards, \$1.10 bushel.

IMPROVED EARLY HORSE TOOTH. Being nearly two weeks earlier, this variety is better adapted for fodder and ensilage in the Northern States than the ordinary Southern Horse Tooth. \$1.30 bushel; 10 bushels and upwards, \$1.20 bushel.

RURAL THOROUGHbred WHITE FLINT. An early variety, valuable for the Northern States. Owing to its suckering and branching habit, it yields enormously. \$1.50 bushel; 10 bushels and upwards, \$1.40 bushel.

CHOICE

Seed Oats.

SELECTED

IMPORTANT.—A change of Seed Oats is even more necessary than a change of Seed Potatoes, and they should be renewed at least every second or third year. At the low prices at which we offer a low choice re-cleaned Seed Oats, IT WILL PAY EVERY TIME to even renew stock every year. Oats grown on the same soil, or in the same neighborhood year after year, deteriorate rapidly and soon become light, chaffy and unprofitable. In each instance we state where our stock has been grown to enable our customers to select a complete change.

HENDERSON'S CLYDESDALE. (*Imported.*)—Without a doubt the grandest White Oat in cultivation, weighing 50 lbs. to the bushel; very early and productive. We offer these oats for sale at the **weight of 50 lbs. per bushel**, exactly as grown for us, so that those purchasing will actually receive for every bushel **over one and one-half bushels** according to the American standard, **\$1.00 peck, \$2.50 bushel of 50 lbs., 3 bushels for \$7.00, 10 bushels and upward, \$2.25 per bushel; 100 bushels and upward, \$2.15 per bushel.**

CLYDESDALE, AMERICAN-GROWN. (*Grown in Northern New York State.*)—The imported Henderson's Clydesdale Oats (offered above), of which we annually distribute such large quantities, have for years been universally admitted to be the **highest grade of White Oats in existence.**

In order to give Henderson's Clydesdale a still wider distribution and make their value universally known, and to enable us to offer them at a **price within the reach of every farmer**, we have had several thousand bushels specially grown for us in the United States during the past year. These we have thoroughly re-cleaned, and are extra choice and heavy, free from all foul seeds and light and imperfect grains. We are within the mark when we say that these oats will yield under ordinary cultivation 70 to 80 bushels per acre, and under favorable circumstances 100 bushels per acre can reasonably be expected. **\$1.20 bushel (32 lbs.); 10 bushel lots, \$1.10 bushel; 100 bushels lots, \$1.00 bushel (32 lbs.)**

LINCOLN. (*Grown in Wisconsin.*)—On its merits this has become one of the most popular. Is very strong strawed, is very early, and is more nearly rust proof than any other variety. The grain is heavy, handsome, and thin skinned. You cannot go wrong in sowing this variety. **\$1.00 bushel; 10 bushels and upward, 90 cts. bushel; 100 bushels and upward, 85 cts. bushel.**

PROBSTEIER. (*Grown in Wisconsin.*)—A leading white variety. It is very productive and heavy, and straw very strong. It is of Scandinavian origin, but well adapted to this climate; it ripens two or three days later than many varieties, but yields better. **85c. bushel (32 lbs.); 10 bushels and upward, 80c.; 100 bushels and upward, 75c.**

WHITE RUSSIAN. (*Grown in Michigan.*)—Is somewhat coarse, but is much appreciated for its rugged hardiness. It stools freely, has strong stiff straw, heads large with plump grain. A heavy cropper. **90 cts. bushel; 10 bushels and upward, 85 cts. bushel; 100 bushels and upward, 80 cts. bushel.**

BLACK TARTARIAN. (*Grown in Northern New York State.*)—The most prolific and distinct variety of Black Oat grown. Its ear is carried all on one side; it is very early, long and strong-strawed, and bears a short plump grain. **40c. peck; \$1.00 bush. (32 lbs.); 10 bushels and upward, 90 cts. bushel.**

WINTER OATS. We are now booking orders for delivery next fall for Winter Oats grown in New Jersey, which are much hardier than those grown in Virginia and other Southern States, and will stand the winter as far north as New York City. They stool out strongly, are earlier and much more vigorous in growth than any spring variety. **40c. peck, \$1.15 bushel; 10 bushels and upward, \$1.10 bushel.**

ALL OUR OATS ARE SPECIALLY GROWN FROM SELECTED STOCK FOR SEED PURPOSES.

CLYDESDALE OATS.

All cleaned by the latest and most improved machinery, free from weed seeds and small imperfect grains.

Buckwheat, Barley and Rye.

NEW JAPANESE BUCKWHEAT.

(Introduced into cultivation by us in 1887.)

It is seldom that such a sterling variety as this is placed before the agricultural community, and we would advise all who are growers of Buckwheat to give this new and distinct Japanese variety a trial in preference to any other variety, whether it be for milling, for the apiary or aviary. A glance at our illustration will show that the kernels are at least twice the size of any other variety, and of a shape peculiar and distinct from all others. The color of the kernels is also most distinct, being a rich dark shade of brown. The straw is heavier; it branches more and does not need to be sown as thickly as the other kinds. It ripens a week earlier than the Silver Hull and yields two or three times as much. It can be planted as far north as Canada. (See cut.)

Price, \$1.30 per bushel; 10 bushel lots, \$1.20 per bushel.

Early Orders are respectfully solicited to prevent disappointment, as the demand has far exceeded the supply in the past.

Truly the Japanese Buckwheat is one of the greatest improvements, in a single line of grain, of the present age. All other kinds of buckwheat can be well thrown aside; and not only the bee-keepers of our land, but farmers in general, can unite in tendering a vote of thanks to our enterprising seedsman, Peter Henderson.—"GLEANINGS IN BEE CULTURE."

I prefer the Japanese Buckwheat to all other kinds.—F. N. HILTON, Pontiac, Mich.

I found your Japanese Buckwheat first-rate; it yielded four times more than the old kinds did in the same lot.—DAVID CEAS, Bloomville, N. Y.

The Japanese Buckwheat I had of you last year produced four times as much (by weight) as any other variety, not counting what my neighbor's chickens, who visited it daily, stole.—PHILIP WICK, Col. Co., N. Y.

Last spring I got a half-bushel of your Japanese Buckwheat and sowed it the 18th of June on not as good ground as I sowed the other kind, and from that have measured up forty-three and a half bushels of beautiful buckwheat. By weight it overruns.—J. T. ALLEN, Keeseville.

Common or American.—Yields an average of from 20 to 30 bushels per acre. Price, \$1.30 per bushel.

BARLEY.

Should be more grown than it is, especially in these days of low-priced wheat. The straw makes excellent rough feed for all kinds of stock. It is also one of the best grains with which to sow down to grass in spring.

New White Hulless Barley.—A valuable new variety, which should be sown at the rate of $1\frac{1}{2}$ bushels per acre, about the time of sowing Oats. It is two or three weeks earlier than ordinary Barley, grows about the same height, and will not shatter in the field, even when very ripe. The grain is not unlike Wheat, and weighs about 60 lbs. per bushel, instead of 48 lbs., as other Barley. For feeding to horses and hogs, when ground, it is unequalled, and is also exceedingly valuable as hay, if cut and cured just before ripening. 75c. per peck; \$2.00 per bushel of 48 lbs.; 10-bushel lots, \$1.80 per bushel.

Two-Rowed Duck-Bill.—The heads are of great length, and when maturing become slightly curved; the grains are large and plump, and brighter than any other variety of two-rowed Barley. The straw is stronger than the old popular Chevalier Barley, and has yielded nearly 70 bushels per acre. (See cut.) Price, 50c. per peck; \$1.50 per bushel.

RYE.

Rye is a valuable crop for either soiling, green fodder, straw or grain. It is largely used by farmers to seed down with in the fall, and is considered preferable to wheat for this purpose, as it protects the young grass and matures two weeks earlier in the summer than wheat.

SPRING.—A variety produced by planting Winter Rye in the spring for several years, and selecting the seed until the type was fixed. It is an excellent "catch-crop" where fall-sown grain has been winter-killed, and also for fodder and grain. \$2.00 per bush.

Excelsior Winter.—A new variety from Vermont, that has never failed to yield at the rate of from 40 to 50 bushels per acre. With the originator, a four-acre field yielded 52 bushels to the acre. \$1.50 per bushel; 10-bushel lots, \$1.40 per bushel.

Winter.—The variety most commonly cultivated, whether sown for grain, straw or cutting green. \$1.10 per bushel; 10-bushel lots, \$1.00 per bushel.

Thousandfold.—Said to be the most productive Rye in cultivation; the straw is tall and strong, with long heavy heads, and stands up well. Especially recommended where Rye is grown more for the straw than the grain. \$1.50 per bushel; 10-bushel lots, \$1.40 per bushel.

NEW JAPANESE BUCKWHEAT.

TWO-ROWED DUCK-BILL BARLEY.

Special prices for large quantities on application.

SPRING WHEATS.

Often, through pressure of other work, the seeding of Winter Wheat is neglected until too late and is either not sown at all or results in failure.

With the two varieties of Spring Wheat here offered, this difficulty can be overcome by Spring sowing.

They are the best of the Spring Wheats, yield well, and the milling quality of the grain surpasses even the best of the winter varieties.

Spring wheat is also a satisfactory crop to sow along with grass seed.

WELLMAN FIFE.

We consider this to be the best of all the Spring Wheats, being an improvement on the well-known and favorite Saskatchewan, having larger heads and grain, and the straw taller and stronger, with white chaff heads and dark amber kernels. The grain is very hard and produces the finest grade of flour, and is eagerly sought after by millers. It is enormously productive, outyielding all other Spring Wheats, and is invaluable for spring sowing where the Winter Wheat has been killed, or where it was not sown, owing to excessive drought or other causes in the fall. (See cut.) \$2.25 per bushel; 10-bushel lots, \$2.10 per bushel.

SASKATCHEWAN FIFE.

The favorite variety in the great Spring Wheat sections of the Northwest, where it is much esteemed by the farmer for its earliness, productiveness, vigorous growth and freedom from smut and diseases, and by the miller on account of its unsurpassed milling qualities. \$2.10 per bushel; 10-bushel lots, \$2.00 per bushel.

WINTER WHEATS.

PRICES ON APPLICATION.

RURAL NEW YORKER No. 57.

Has heavily bearded heads which are beautifully symmetrical, being pointed at the tip, broad in the middle and tapering towards the stem. The straw is unusually tall and strong and stools freely, frequently having 35 to 40 stalks from a single grain. The heads are compact, averaging three kernels to a spikelet or "breast," and ten breasts to a side. The kernels are of medium size and of an attractive color, between the so-called "red" and amber. Possessing the requisite degree of hardness for the production of the finest grade of flour, it will be much sought after by millers. The chaff is clear white, with a trace of velvet sufficient to make it difficult for the green fly to attack it, and the heads do not mildew as the full velvet chaff varieties are liable to do.

RURAL NEW YORKER No. 6.

This beardless variety is a hybrid between Rye and Armstrong Wheat, though apparently all traces of Rye have disappeared, and it now appears a handsome, beardless Wheat. It succeeds and produces heavy crops on poor, thin land, where Wheat could not be successfully or profitably grown, and it also has extreme hardiness to recommend it. When first raised, some years ago, the top of the culms was downy with Rye culms. This characteristic could not be fixed, so that for this variety the culms having no down were alone selected. The gold-colored straw is very thick and strong, easily supporting the heavy grain without breaking. The large amber kernels are placed four to a breast, eight breasts to a side, with long symmetrical heads having a brown chaff. (See cut.) One of our growers says:

"It stools as strong as any wheat I ever saw. It had a vigorous, healthy growth all the season and stood well without lodging. It is very hardy."

JONES' LONGBERRY No. 1.—Will soon take the place of the old popular Longberries now no longer profitable, through light yield and weakened vitality.

From the fact that it is a blending of red and amber wheat in one berry, millers will quickly recognize its high milling quality.

PRIDE OF GENESEE. (Bearded.)—One of the most productive varieties, having a long, well-filled head, and the fact that it will give a reasonably good crop on land so poor that common sorts would be a failure, cannot fail to make it a popular sort.

DIAMOND GRIT, OR WINTER SASKATCHEWAN. (Bearded.)—A worthy rival at last to the Hard Spring of the Northwest, being superior to every known winter wheat for milling, and will be the means of stimulating farmers to a more general cultivation of the winter wheat crop.

GOLD COIN. (Bald.)—A very productive variety which has yielded over 60 bushels per acre and even on large acreages has seldom run under 40 bushels per acre. The grain is white, the head long and well filled, frequently having five kernels abreast.

BEARDED WINTER FIFE.—A grand new bearded Wheat, which has all the splendid milling qualities of the celebrated Winter Fife. It is one of the earliest wheats, and is a very strong, healthy grower, stooling rapidly in the fall.

WELLMAN FIFE
SPRING WHEAT.

RURAL NEW YORKER No. 6.
WINTER WHEAT.

EARLY SOJA BEANS.

These beans have attracted much attention in recent years on account of their high feeding qualities, but all were too late to be of value in the Northern States. This variety has proved its earliness and value in the Northern States by not only producing large fodder crops, but ripening the seed as far north as Massachusetts. They are worthy of a place on every farm, either as a grain crop or fodder crop to feed green, or for the silo. The grain is the richest known vegetable substance, and when ground and fed to cattle gives a milk richer and better than cotton seed or other meal. Planted in rows 2½ feet apart, with 6 to 8 plants to the foot of row, requiring about half a bushel per acre, they yield 15 to 20 tons per acre of fodder exceedingly rich in flesh formers. For green feed, use from time of blossoming till pods are well filled; for the silo, cut as soon as most of the pods are well filled, and cut into ½ inch to 2½ inch lengths. They are soil enrichers, gathering nitrogen from the air in the same manner as clover, the roots being crowded with tubercles, which give them this power. 15c. lb.; \$1.25 pk.; \$4.00 bu.

LATE.—Being nearly a month later than the early variety offered above should not be used north of Virginia. \$1. pk.; \$3. bu.

THE "HENDERSON" ENSILAGE COMBINATION.

A COMPLETE BALANCED FEED RATION
GROWN ON THE FARM.

Corn is the most serviceable crop for ensilage, but though ever so well preserved as to succulence, odor and flavor, it is an incomplete feed for cattle, being deficient in albuminoids or protein—(the flesh formers), as well as fat. This deficiency has hitherto been supplied by feeding in addition to the corn silage, grain, such as oats, wheat, etc., grown on the farm, or the purchase of concentrated feeds, such as meal, oil cake, or some other commodity, rich in the elements in which corn silage is deficient. **But the American farmer can now, by the aid of the Soja or Soy Bean, grow on his own farm at small cost, a combination which furnishes a wholesome, economical and complete feed for milch cows.** This combination is composed of two parts corn or millet, to one part Soja Beans, grown separately, but mixed, when filled in the silo. It may be mixed in these proportions, at the time of cutting and filling of the silo, or it may be placed in layers, and mixed as fed. **The combination ensilage develops a most agreeable, aromatic odor, and is greedily relished by cattle, both dairy cows and fattening stock.** It is a complete balanced ration, and when generally used (as it certainly will be by all up-to-date farmers and dairymen), it will revolutionize the dairy industry of the United States. We do not recommend the feeding of this combination to the entire exclusion of grain or other concentrated feed. We recommend that grain be fed occasionally as a change, but four-fifths of the grain bill can be saved. We recommend all farmers to plant this year at least an acre or two of the Soja Beans, to test and prove for themselves the value of the combination, and we are confident that thereafter, all who try it, will each year grow a larger acreage.

Wm. P. Brooks, Professor of Agriculture, Massachusetts Agricultural College, writes Nov. 25th, 1898.

"The combination of Corn or Millet, and Early Soja Beans, in suitable proportions, certainly puts it within the power of the farmer to produce silage which makes more nearly a perfectly balanced feed for dairy cows than any other combination, with which I am acquainted. This will be evident from the table below, which shows the most generally accepted standard for the feeding of the cow, and the composition of different kinds of silage. It will be seen that the millet and soy bean silage contains the various nutrients in nearly the same proportions called for in the standard. The nutritive ratio, that is the proportion of digestible flesh formers (albuminoids), and digestible heat producers (carbohydrates and fat), called for by the standard, is 1:5.7. In the millet and soy bean silage, it is 1:6.0. In our experience, the best proportions are about two of the corn or millet, to one of the bean.

The millet and beans make a very sweet and aromatic silage, highly relished by cows. None of this silage is wasted by the animals, as it is all fine and succulent. When it is remembered, that under fairly good conditions, the millet will give 20 to 25 tons of forage in suitable condition for the silo per acre, that the bean will give about 12 tons for the same area, and that the latter, when once it has been grown for a few years upon a farm, will be able under right management to take most of the nitrogen required by the crop from the air, it will be readily admitted that these crops possess great value for furnishing winter feed for our dairy stock.

The combination of corn with the soy bean possesses perhaps equal advantages, and upon soils inclined to be dry the corn is to be preferred to the millet, which requires a retentive soil. The millet should be cut for the silo when the seed is in the early milk; the bean, when the pods are all nearly filled, but before the seed begins to harden."

	PROTEIN.	FAT.	CARBOHYDRATES.		† NUTRITIVE RATIO.
			EXTRACT MATTER.	CRUDE FIBRE.	
Standard for cow (1,000 lbs. live weight). per day (digestible.)	2.5 lbs. per cent.	0.5 lbs. per cent.	13.0 lbs. per cent.	per cent.	1:5.7
Corn Silage.....total	1.9	0.8	12.8	6.0	1:10.6
Millet " (Japanese).....total	1.7	0.8	13.6	7.5	1:13.6
Corn and Soy Bean Silage.....total	2.5	0.8	11.1	7.2	1:8.1
Millet (Jap.) and Soy Bean Silage.....total	2.8	1.0	7.2	7.2	1:6.0
100 lbs. Millet and Soy Bean Silage, furnish	2.8 lbs.	1.0 lbs.	14.4 lbs.		

NOTE.—The standard above calls for digestible nutrients in the quantities given: the compositions given show total nutrients.

† Nutritive ratio, is ratio between total digestible nitrogen containing (protein), and total digestible carbon containing (carbohydrates), substances.

Dwarf Essex Rape

TRUE DWARF ESSEX RAPE.

Valuable for Cattle, Sheep and Hogs.

In the United States we have millions of acres of good land that annually lie idle or run to weeds the latter part of the season, after the grain, potato and hay crops have been harvested, a large portion of which might be made to produce one of the finest feeds imaginable, and in the greatest abundance, at a time when cattle, sheep and hogs are roaming through bare pastures in search of a scanty living. Under favorable conditions it is ready for pasturing sheep or cattle within six weeks from time of sowing, and on an average one acre will carry twelve to fifteen sheep six weeks to two months. When on the Rape they should at all times have access to salt; but water is not necessary. There are several varieties of Rape, but care should be taken to procure the **Dwarf Essex**, or English, as it is sometimes called, which does not seed the same season as sown, unless in some exceptional cases, as when sown too early and the young plant is touched by frost. In the Northern States it should be sown from April to end of August for fall pasturing, but as it thrives best in cool weather, it should not be sown in the Southern States until September, or October for winter pasture. In the latitude of New York it should be sown in April, or in July or August. Its fattening properties are probably twice as good as those of Clover, and for sheep the feeding value of Rape excels all other plants we know of. At the Michigan Experiment Station, 128 lambs were pastured for eight weeks on 15 acres of Rape sown in July, and showed a gain of 2,890 lbs., or at the rate of 3 lbs. per lamb each week. Even so far South as Alabama it has proved a boon to the farmer. In a recent bulletin published by the Alabama Experiment Station they state: "Quality of product good for both hogs and cattle. The growth was enormous. By repeated sowings it will and did carry more hogs through our dry, hot summers than four times the amount of land planted in anything else ever grown here. I would recommend it to all Southern farmers." To secure the best results, the Rape should be sown in drills. Sow 4 lbs. per acre broadcast, 2 to 3 lbs. per acre in drills. (See cut.) Price, 10c. lb., \$4.00 bushel of 50 lbs., 100 lbs. \$8.00. If by mail, add 8c. per lb.

SAND, OR WINTER VETCH.

(*Vicia Villosa*.)

Though it succeeds and produces good crops on poor, sandy soils, it is much more vigorous on good land and grows to a height of 4 to 5 feet. It is perfectly hardy throughout the United States, remaining green all winter, and should be sown during August and September, mixed with Rye, which serves as a support for the plants, or in spring with Oats or Barley.

It is the earliest crop for cutting, being nearly a month earlier than Scarlet Clover, and a full crop can be taken off the land in time for planting spring crops. Being much hardier than Scarlet Clover, this is the Forage Plant to sow in the Northern States where Scarlet Clover winter-kills, though it is equally valuable in the South. Every dairyman and stock-breeder in the United States should have a field of it, and if you try it once you will never be a season without it.

It is exceedingly nutritious, much more so than Clover, is eaten with relish, and may be fed with safety to all kinds of stock.

It will also prove valuable for a Hay crop in the South and dry Western regions, as it may be sown in the fall and will make a luxuriant growth during the fall and spring months, and will yield a heavy crop, which may be cut and stored before the droughts set in.

Sow one bushel per acre, with one-half bushel of Rye or Wheat. (See cut.) Price, 10c. lb., \$4.00 bushel of 50 lbs., 100 lbs. \$8.00. If by mail, add 8c. per lb.

MISCELLANEOUS AGRICULTURAL SEEDS.

If by mail in quantities of ½ lb. and upward, postage must be added at the rate of 8c. per lb.

PEAS FOR FODDER.

CANADA FIELD PEAS.

"Peas could be made to bring more nitrogen to the soils of this country every year than is now purchased annually by the farmers at a cost of millions of dollars. As a food for fattening cattle and dairy cows, peas are probably unexcelled. Much of the success which Canadian feeders have achieved in preparing cattle for the block has arisen from the free use of Peas in the diet."—(Year-book of the U. S. Department of Agriculture.)

For the Northern States there is no crop of greater value than Field Peas and is more neglected, which can only be attributed to a lack of knowledge

as to its merits. Whether for fodder, in mixture with oats, sown at the rate of two bushels each per acre, or the Peas sown alone at the rate of three bushels per acre for plowing under, there is no crop that we can so strongly recommend for more extended culture in all latitudes North of Washington. South of that we recommend the Cow Peas, as they thrive better and are more certain croppers in the warmer States than the other varieties.

Like all leguminous crops, Peas have the power of extracting nitrogen from the air, and the soil from which a crop of Peas has been harvested is richer in nitrogen than before the Peas were sown upon it, and there is no kind of live stock on the farm to which Peas and Oats in mixture cannot be fed with positive advantage. The Canada varieties, the Mummy and Marrowfat, should be sown early in spring, but Cow Peas are more tender and should not be sown until corn planting time. Cow Peas, being of very rapid growth during warm weather, can be sown as late as middle of July with reasonable assurance of a profitable crop, either for harvesting or plowing under. (See Cut.)

Canada White. 50c. pk ; \$1.40 bush ; 10-bush. lots, \$1.30 bush.

Canada Blue. 50c. pk ; \$1.50 bush ; 10-bush. lots, \$1.40 bush.

Large Marrowfat. Of immense growth, yields heavily both grain and fodder, and we consider it the best of the Field Peas, whether for growing alone or in mixture with Oats or Barley. \$1.60 bushel ; 10-bushel lots, \$1.50 bushel.

The Mummy. We have much pleasure in recommending this Pea for soiling or fodder, either in mixture with oats or grown by itself. 60c. peck ; \$2.00 bushel ; 10-bushel lots, \$1.85 bushel.

COW PEAS. One of the most valuable of the leguminous crops, and is a soil improver which can be sown in the spring or summer and plowed under in the fall. It has no superior, especially for light soils. Its capacity for gathering nitrogen from the air is not surpassed by the clovers, and enables the farmer to dispense with buying that most costly ingredient for commercial fertilizers—nitrogen. \$2.00 bushel ; 10-bushel lots, \$1.90 bushel.

BEANS.

Velvet. A leguminous plant which grows an enormous crop, but is very late and is valuable only in the Southern States and tropical countries. Specially desirable for plowing under in orange groves and sugar plantations. 75 cts. peck ; \$2.50 bushel.

Burlingame Medium. A little smaller in the grain than the ordinary medium beans, but is whiter and far handsomer in appearance. \$1.00 peck ; \$3.00 bushel.

Improved Red Kidney. Much more prolific than the ordinary Red Kidney. \$1.00 peck ; \$3.25 bushel.

Boston Small Pea Bean. A desirable variety to grow, being early, hardy and prolific. \$1.00 peck ; \$3.00 bushel.

Siji or Sij. See page 24.

White Marrowfat or Navy. The variety so extensively grown for sale in the dry state. \$1.00 peck ; \$3.50 bushel.

Spring Vetches or Tares. (*Vicia sativa*.) A species of the pea, grown for stock, and sometimes mixed with oats for soiling. Sown broadcast at the rate of 2 to 3 bushels per acre. 10c. per lb. ; \$2.75 per bushel of 60 lbs. ; 10-bushel lots, \$2.65.

Australian Salt Bush. (*Atriplex semibaccatum*.) A valuable forage plant recently introduced and highly recommended for growing on alkali soils and in sections subject to protracted droughts. Experiments have proven that it will grow on soils where nothing else will grow. It is nutritious and readily eaten by all kinds of live stock. The plants are procumbent and spreading, one plant, from one root stock, frequently covering an area 20 feet across, so that but few plants are required, and one pound of seed is sufficient for an acre. The best plan is to sow the seed in well prepared garden soil and the seedlings, when 2 or 3 inches high, planted 6 or 8 feet apart. 25 cts. oz. ; \$2.00 lb.

Wild Rice. (*Zizania aquatica*.) An annual which sows itself in the fall, about middle of September, lies dormant all winter, in spring commences to sprout as soon as the water gets warm, reaching the surface during the first half of June. It grows very rapidly, in one to eight feet of water, ripens late in August or early in September. It succeeds best when sown in the fall broadcast, from a boat, in two to three feet of water having a mud bottom, but it can be sown in the spring. As an attraction for wild fowl it cannot be equalled. 20c. lb. ; \$16.00 per 100 lbs.

Parsnip, Long Smooth. Excellent for dairy cows, possessing nutritive properties of the highest quality. 10c. per oz. ; 20c. per ¼ lb. ; 50c. per lb.

Artichokes, Jerusalem. A hardy perennial, forming roots like a potato, making excellent feed for stock, especially for hogs. 25c. per quart ; \$1.25 peck ; \$4.00 per bushel ; 3 lbs. by mail, 75c.

Field Lupins. May be sown from April to July, and succeed well on the poorest soil ; and many poor lands have had their value greatly enhanced by plowing in Lupins. Are particularly valuable on poor sandy soils. 15c. per lb. ; \$12.00 per 100 lbs.

Sunflower, Mammoth Russian. Highly valued as an excellent and cheap food for fowls. It is the best EGG-PRODUCING food known. It can be raised cheaper than corn. Four quarts of seed will plant one acre. 10 c. lb. ; \$2.00 bushel ; \$7.50 per 100 lbs.

Cotton, Upland. 15c. per lb. ; \$10.00 per 100 lbs.

Cotton. Choice named varieties. Descriptive price list mailed free on application.

Cotton, Sea Island. 15c. per lb. ; \$10.00 per 100 lbs.

Flax Seed. 25c. quart, by mail 40 cts. ; \$4.00 bushel.

SAINFOL.

(*Onobrychis sativa*. *Esparssette*.)

Root perennial. Time of Flowering, June and July. Height 2 to 3 feet.

An excellent fodder plant, particularly for light, dry, sandy, gravelly, limestone or chalky soils. It flourishes during long droughts, owing to its long descending tap roots, which have been found 16 feet long. It succeeds where many other grasses will not, and is without doubt a most important forage plant for limestone soils. It is very nutritious, and when fed to milch cows, it improves the quality of the milk. The seeds are more nutritious than oats, and are eagerly eaten by fowls, causing them to lay. It may be sown either broadcast or drilled. The seeds are large, and require to be covered deeper than those of clover or almost any other agricultural seed. If sown broadcast, it will require five or six bushels per acre ; if drilled, four to five bushels. In dry sections, it should be sown with half crop of barley or other grain to shade it from the hot sun for the first summer. It will crop from seven to ten years, according to the nature of the soil. (See Cut.) 10c. lb. ; \$1.75 bu. of 20 lbs. ; \$10 per 100 lbs.

SAINFOL OR ESPARSETTE.

POTATOES FOR SEED.

In drills 3 feet apart; 10 to 12 bushels to the acre. 1 peck will plant about 125 hills.

A CHANGE OF SEED ALWAYS PAYS.

Our Potatoes are all specially raised for seed purposes, are "Northern Grown," and are exceptionally fine in quality this season. Prices subject to variation. We deliver all potatoes into the hands of transportation companies safely packed; after that our responsibility ceases. Purchasers must take all risks from freezing or heating. In comparing our prices on

Potatoes, remember we make no charge for barrels or cartage, but deliver F.O.B., New York, at prices quoted.

Our Potatoes are all
"Northern Grown."

A CHANGE OF SEED
ALWAYS PAYS.

Potatoes we do NOT deliver free.

HENDERSON'S
EARLY PURITAN
POTATO.

EARLY VARIETIES.

"EARLY NORTHER." Several days earlier than the Early Rose, and equally prolific; a most desirable sort. It is a strong, vigorous grower, and the potatoes are bunched well together in the hills. In shape it resembles the Early Rose; the eyes are few and shallow. Its table qualities cannot be excelled, cooking dry and floury, whether baked or boiled. Seems to do well everywhere. (See cut.) 60c. peck, \$1.75 bush., \$3.50 bbl.

"The Early Northern Potatoes I planted last spring have proved to be the best I have ever had, both in quantity and quality."

"Your Early Northern Potatoes I got of you last spring have done splendidly for me. I think them just perfect."

THE "BOVEE." (See description, page 28.) 1 lb. 30c., 3 lbs. 70c., 5 lbs. \$1.00, postpaid. If by freight or express, deduct 8c. per lb. \$1.25 peck, \$4.00 bush., \$8.00 bbl.

QUEEN. A grand potato of recent introduction, closely resembling Beauty of Hebron in appearance, color, size and shape, but is much earlier and a heavier yielder. 60c. peck, \$1.75 bush., \$3.50 bbl.

ROCHESTER ROSE. Of recent years the Early Rose has not done well in some sections. The Rochester Rose, which we now offer, is a seedling of the Early Rose, and is an improvement in every respect. It will average larger in size, is not quite so early, and is a much heavier yielder. 60c. peck, \$1.75 bush., \$3.25 bbl.

HENDERSON'S EARLY PURITAN. One of the most valuable early varieties, entirely distinct from all other early sorts, the skin being nearly pure white. It cooks dry and floury, and is unequalled in quality. Awarded the medal of excellence at the American Institute Fair. (See cut.) 60c. peck, \$2.00 bush., \$3.75 bbl.

"From the one peck of Early Puritan Potatoes that I purchased from you last spring I dug 18 bushels."

"In the spring I bought one peck of Henderson's Early Puritan Potatoes from you. They were planted on my Island Farm on April 1st and dug July 16th. The yield was 33 pecks. They are large, smooth, and could easily have been dug a month ago."

"Our potatoes from your Early Puritan were the very finest potatoes I have ever eaten. They kept finely, though every one around lost by rot."

EARLY OHIO. Tubers almost round; flesh solid; cooks dry and mealy; very early. 60c. peck, \$1.75 bush., \$3.50 bbl.

EARLY ROSE. The leading variety for earliness, quality and productiveness. 60c. peck, \$1.75 bush., \$3.25 bbl.

BEAUTY OF HEBRON. One of the best early sorts; productive and of excellent flavor; a good keeper; pure white skin and flesh. 60c. peck, \$1.75 bush., \$3.25 bbl.

CLARKE'S No. 1. Earlier than the Early Rose and very productive. Cooks mealy. 60c. peck, \$1.75 bush., \$3.25 bbl.

MEDIUM EARLY VARIETIES.

NEW IDEAL. Yields a very much heavier crop than any of the earlies; in fact, it outyielded several of the late potatoes. It is a handsome potato, having a pink russet skin; it is one of the best cooking or baking potatoes, the flavor being excellent; the vines are large, stocky and healthy; its keeping qualities are of the best. 60c. peck, \$2.00 bush., \$3.75 bbl.

RURAL NEW-YORKER No. 2. Large and smooth variety, of excellent quality; white skin and flesh, with few and shallow eyes. 60c. peck, \$1.75 bush., \$3.25 bbl.

CARMAN No. 3. A new seedling raised by Mr. Carman. It is of perfect form, even in dry seasons, almost every potato being of uniform size and shape, averaging nearly a pound each in weight. It has but few eyes, and they are very shallow. The skin and flesh are extremely white, no hollow or dark parts, and its cooking qualities are exceptionally fine; a remarkably handsome potato and enormously prolific. 60c. peck, \$1.75 bush., \$3.25 bbl.

CARMAN No. 1. Introduced five years ago and created a sensation on account of its very large size, uniform shape, handsome appearance and immense yield. Its cooking qualities are of a high order. 60c. peck, \$1.75 bush., \$3.25 bbl.

"SIR WALTER RALEIGH." (See page 29.) 1 lb. 30c., 3 lbs. 70c., 5 lbs. \$1.00, delivered. If by freight or express, at purchaser's expense, deduct 8c. per lb., or buyer paying transit, 75c. peck, \$2.50 bush., \$5.00 bbl.

The "BOVEE" is the Best Early, "SIR WALTER RALEIGH" and "UNCLE SAM" THE BEST MAIN CROP POTATOES OF RECENT INTRODUCTION.

Henderson's "Bovee" Potato

"TWO WEEKS AHEAD OF
HIS NEIGHBORS."

A Marvel in Earliness!

The EARLIEST of the Earlies.

A Marvel in Yield!

*Outyielding all of the Earlies,
and equaling the heaviest
cropping Lates.*

A Marvel in Vigor!

Health and freedom from disease.

A Marvel in Quality!

White, dry and mealy.

We give below a few reports selected from hundreds, which will give some idea of

New Extra Early Potato. **The "BOVEE."**

The Earliest of all, and a Great Cropper.

WHEN we introduced The "Bovee" Potato two years ago, our own tests and the opinions of others led us to claim a good deal for it, and our confidence has not been misplaced. Not only is it the earliest, but it takes a leading place among the heavy cropping varieties, an unusual thing among first earlies. It is even earlier than Early Ohio, and compares favorably with Triumph, a light cropping variety that has only extreme earliness to recommend it, while the "Bovee," in all competitive trials has outyielded all the early Potatoes, and in many of the tests conducted by Experiment Stations and private growers it has outyielded even the late varieties. The vine is dwarf and stocky, enabling it to be planted six inches closer than nearly all other varieties, which results in a much larger return per acre, and is a feature of the utmost value where land is valuable. The tubers grow remarkably close, all bunched together in the hill close up to the vine. (See cut.) They size up to a marketable size more evenly than any Potato we ever saw; none too large or too small; practically the whole crop being merchantable and the quality is perfect. We have only one warning—it is apt to prove disappointing on poor soil or with poor cultivation, as it sets so freely the tubers are apt to be small. But on good Potato ground, well fertilized and cultivated, no other early Potato to-day compares with it.

The World-wide Popularity of The "BOVEE" Potato. . . .

"It would appear that The 'Bovee' is at least twelve days earlier than Early Ohio, but, even though no earlier, the almost perfect shape of The 'Bovee' would win the prize every time over the poorly shaped Early Ohio. It is as perfect in shape as the well-advertised Freeman and less variable. It is probably three weeks earlier, and will yield more per acre, with a smaller proportion of unmarketable tubers."—THE RURAL NEW-YORKER.

"Uncommonly prolific for such an early variety."—OHIO AGRICULTURAL EXPT. STATION.

"Yielded at a rate above any other in trial, and we consider it a very promising new variety."—MASSACHUSETTS AGRICULTURAL EXPERIMENT STATION.

From England.—"It is very early and I made a point to try it as soon as large enough to use, and found it quite white and dry."—JOHN CROOK, Forde Abbey Gardens, Chard.

From Germany.—"The 'Bovee' is very satisfactory in every way; the tubers growing close together, are of a fine oval form and almost all of a uniform medium size, fit for table use. Eyes few and flat. The 'Bovee' was ripe ten days sooner than Early Rose and Paragon, and about a week earlier than our Improved Six Weeks. Quality fine and dry."—HAAGE & SCHMIDT, Erfurt.

From Sweden.—"Your new Potato 'Bovee' is a most valuable addition to the many you have sent out. I had a splendid crop of the finest quality, and it is the best this season out of thirty sorts."—SVENSONS FROHANDEL, Stockholm.

Price, 30c. lb.; 3 lbs., 70c.; 5 lbs., \$1; post or express paid. If by express or freight, at purchaser's expense, deduct 8c. lb. | \$1.25 peck, \$4 bush., \$8 bbl., by express or freight at purchaser's expense.

MAIN CROP POTATOES..

"UNCLE SAM."

It is the handsomest Potato grown.
ITS COOKING QUALITIES
are Superior—WHITE, DRY AND FLOURY.

A luxuriant, healthy grower, free from
disease, blight, scab or rot. ❀ ❀ ❀ ❀

IT OUTYIELDS all other Potatoes nearly two to one!
ITS SHAPE AND SIZE are wonderfully uniform."

"UNCLE SAM" possesses more desirable
qualities than any other Potato. Its cropping
qualities are phenomenal, and we believe it to
be the heaviest yielding Potato known, not even
excepting several varieties worthless in every
other respect than their heavy cropping quali-
ties—varieties which produce coarse, waxy and
unpalatable tubers. On clay or heavy soils
"UNCLE SAM" is not a satisfactory Potato and
is apt to get coarse and unshapely, but on a loam
or sandy soil there is no Potato which will outyield it or give more satisfactory results. Its productiveness is largely attributable to
the uniform size of the Potatoes, nearly all sizing up alike, none too large and few too small, but its crowning merit is its superb
cooking qualities, which will ultimately place "UNCLE SAM" on every table where quality in Potatoes is appreciated. Its hand-
some, pure white, floury appearance attracts the attention of all. It is a medium late variety, ripening along with Rural New-Yorker
No. 2, and has most luxuriant foliage, completely shading the ground. The tubers are oval, with pure white russet skin, with very
shallow eyes near the surface, and are so handsome in appearance and perfect in form that they will always bring an enhanced price
upon the market. (See cut.) 60c. peck, \$2.00 bushel, \$4.00 bbl.

"I bought ten pounds of your 'Uncle Sam' and it has proved to be a good
yielder with me. I have twenty-one bushels grown from the ten pounds of seed."

GUY W. CRAWFORD, Letcher, S. Dakota.

"We sent last year for three lbs. of your 'Uncle Sam' Potato and were
very much pleased with the result. We raised about seventy pounds from the three
pounds."

MRS. ROBERT BICKERTON, West Elizabeth, Pa.

LATE PURITAN. In the **LATE PURITAN** we have a potato which is identical with the Early Puritan in appearance, color and quality,
but far more productive. 60c. peck, \$1.75 bush., \$3.50 bbl.

"If you are interested in hearing of your Late Puritan Potatoes, I am happy
to say that not only have they outyielded everything in this part of the country
and are fast taking the place of the old standard varieties, such as White Star,
etc., but also the consumers pronounce them the best potatoes they have ever
used."

E. D. KASSON, Gloversville, N. Y.

"I got three pounds 'Uncle Sam' Potatoes and I got ninety pounds last
spring."

JOSEPH EDGAR, Hopewell Center, N. Y.

"We are enjoying the nice potatoes. About eight bushels from the ten pounds
of 'Uncle Sam.'"

C. L. QUIGLEY, Martinsburg, W. Va.

"From the 'Uncle Sam' Potato of which I got three pounds, I dug two bushels,
and would have had as many more but for an accident."

F. L. HUNTLY, New Hartford, Iowa.

"I got two pounds of your Late Puritan Potatoes last Spring and planted
them. I have 110½ lbs.; some of them weighed over one pound."

JOSEPH EDGAR,

Hopewell Center, N. Y.

A GRAND NEW

MAIN CROP POTATO,

THE ONLY SEEDLING OF THE WELL-KNOWN RURAL NEW-YORKER NO. 2 THAT IS BETTER THAN ITS PARENT.

The best of Mr. Carman's introductions, and Mr. Carman has raised some of the best and most popular varieties, notably the great
pairs, Rural Blush and Rural New-Yorker No. 2, and the Carman No. 1 and No. 3. In most respects it closely resembles Rural
New-Yorker No. 2, but is more uniform and yields
practically no small tubers, every one being market-
able. It is from four to six days later than the Rural
New-Yorker; the color of the skin is the same, but the
flesh is whiter and of better quality; in fact, it is the
whitest-fleshed and finest-grained Potato, excelling
even the Snowflake. It is unquestionably the best of
its type, and will soon supersede all others for main
crop. (See cut.)

FROM EDITORIAL COLUMNS:

"RURAL NEW-YORKER," Nov. 5th, 1898:

"At present, ALL things considered, we are inclined to regard
the 'Sir Walter Raleigh' as the best Potato we have ever tried."

Those who have tried our "Sir Walter Raleigh" Potato write:

"I am of a decided opinion that 'Sir Walter Raleigh' will be
the coming Potato for main crop. It has certainly far exceeded
my expectations. I have grown all of Mr. Carman's Potatoes,
and believe that in 'Sir Walter Raleigh' Mr. Carman has ex-
celled all his previous efforts."

J. L. CONOVER, Wickatunk, Monmouth Co., N. J.

"The 'Sir Walter Raleigh' is a great yielder, all large Po-
tatoes, no small ones; vines grow strong and upright."

C. W. BEARDSLEY, Milford, Conn.

"'Sir Walter Raleigh' is an immense yielder, of fine quality
and very few small ones."

S. O. BENJAMIN, Aquebogue, Long Island, N. Y.

"I grew 'Sir Walter Raleigh' and 'Bovee' Potatoes last
year. I have tried many kinds, but they are the best varieties I
know. In both cases the yield was remarkable."

JAMES HOOD, Chittenango, N. Y.

PRICE, 30c. lb.; 3 lbs., 70c.; 5 lbs., \$1.00, Post or Express Paid.

If by freight or express, at purchaser's expense, deduct 8c. per lb.

PRICE, 75c. peck, \$2.50 bush., \$5.00 bbl.,

By express or freight at purchaser's expense.

"SIR WALTER RALEIGH."

MR. CARMAN'S BEST.

Root Crops for Farm Stock.

Copyright, 1899, by Peter Henderson & Co.

MANGEL WURZEL.

Mangels are the most important of all root crops for feeding, and may be grown in any part of the American continent on fairly good farm land; all that is necessary is good cultivation.

The best soil for Mangels is loose friable loam and deep plowing. If expedient, follow the plow with a subsoil plow, and the crop will more than repay the extra trouble. The ground should be well enriched, and the seed sown in May in drills 24 inches apart in light soils, and 30 inches apart in strong, rich land; thin out the plants with a hoe to 9 inches apart in the former and 12 inches apart in the latter. 6 to 8 lbs. of seed are used per acre if sown with a drill, or double that quantity by hand. Cultivate with a horse hoe.

If by mail, add for postage at the rate of 8 cents per lb.

Long or Tankard-Shaped.

HENDERSON'S COLOSSAL LONG RED.—The roots are smooth and regular, of the largest size and blood-red color. The quality is exceedingly nutritious, and in all respects this variety is most distinct and valuable. (*See cut.*) 35 cts. lb.; in lots of 10 lbs. and upward, 30 cts. per lb.

HENDERSON'S GIANT INTERMEDIATE.—This is a variety between the Golden Tankard and Yellow Globe. It is larger than the Tankard, not such a rich golden color, but a heavier cropper. 32 cts. lb.; in lots of 10 lbs. and upward, 28 cts. lb.

GOLDEN TANKARD.—The flesh is bright golden yellow, and in this respect differs from most other varieties, which cut white. Sheep have a preference for this sort over other Mangels; it is said that they will pick out every piece of Golden Tankard before touching others. It yields under the best cultivation 75 tons per acre. 30 cts. per lb.; in lots of 10 lbs. and upward, 25 cts. lb.

LONG RED.—This variety is more generally grown for agricultural purposes than any other, producing roots of large size and excellent quality. 30 cts. lb.; in lots of 10 lbs. and upward, 25 cts. lb.

LONG YELLOW.—Differs from the Long Red only in color. 32 cts. lb.; in lots of 10 lbs. and upward, 28 cts. lb.

Globe-Shaped.

HENDERSON'S CHAMPION YELLOW GLOBE.—Smooth, globe-shaped roots, of large size and excellent quality, are the distinctive features of this variety. 30 cts. lb.; in lots of 10 lbs. and upward, 25 cts. lb.

YELLOW GLOBE.—Roots of large size and globular form very productive; keeps better than the Long Red and is better adapted for growing in shallow soils. 30 cts. lb.; in lots of 10 lbs. and upward, 25 cts. lb.

HENDERSON'S RED GLOBE.—A variety similar to the Yellow Globe in shape and size, and different only in color. 35 cts. lb.; in lots of 10 lbs. and upward, 30 cts. lb.

I raised over 100 tons of your Colossal Long Red Mangel on 2 acres. In many cases three weighed over 100 lbs., the best crop I ever saw on an average, either in this country or in England. — JOHN HODGSON, Crystal Lake Farm, Paterson, N. J.

From 5 lbs. of your Colossal Long Red Mangel I raised 944 bushels. One mangel weighed 22 lbs., one 21 lbs. and over 300 of them 13 lbs. each. Thoroughly rolling ground after planting is one of the great secrets of success. J. J. KEATOR, Supt. Rathbun Farms, Ontario, Canada.

HENDERSON'S LONG ISLAND IMPROVED RUTA BAGA

Copyright, 1899, by Peter Henderson & Co.

Ruta Bagas, Russian or Swedish Turnips.

Grow very rapidly, and yield from twenty-five to thirty-five tons per acre, in good, rich, deep soil, with proper cultivation. The Ruta Bagas proper should be sown in this latitude from May 25th to June 25th; while the smaller-growing turnips can be sown from July 1st to the middle of August. Sow 2 to 3 lbs. per acre.

Long Island Improved Purple-Top Ruta Baga.

This is undoubtedly the finest variety of purple-top Ruta Baga, and originated by one of our Long Island growers. It is twice the size of ordinary American stocks, and although size is usually got at the expense of quality, the quality is superior to any that we have tested. It is perfectly hardy. In a fair test on several Long Island farms, alongside some of the best European and American varieties, it produced almost twice the weight per acre of any other variety. (See cut.) 10 cts. oz.; 25 cts. per $\frac{1}{4}$ lb.; 55 cts. lb.

IMPROVED AMERICAN (Purple-Top).—An old leading variety; very hardy and productive; flesh yellow, solid, sweet and fine-flavored; equally good for stock or table use. 10 cts. oz.; 20 cts. $\frac{1}{4}$ lb.; 45 cts. lb.; 10 lbs., \$4.00.

LAING'S IMPROVED.—One of the earliest of the Ruta Bagas; keeps well; good for stock or table use; 5 cts. pkt.; 10 cts. oz.; 20 cts. $\frac{1}{4}$ lb.; 40 cts. lb.; 10 lbs., \$3.50.

LARGE WHITE FRENCH.—Flesh firm, white and solid; attains a large size, and has a very rich and sweet flavor; a very popular variety. 10 cts. oz.; 20 cts. $\frac{1}{4}$ lb.; 50 cts. lb.; 10 lbs., \$4.50.

Turnips

SPECIALLY ADAPTED FOR
STOCK FEEDING.

WHITE FLESHED.

PURPLE-TOP WHITE GLOBE.—One of the best early varieties grown; fine, thick globe-shape, of large size, rapid growth, and of extra fine quality; heavy cropper; in other respects similar to the Red Top Strap Leaf. It keeps well, and is unequaled for stock-feeding, table use or marketing. 10 cts. oz.; 20 cts. $\frac{1}{4}$ lb.; 45 cts. lb.; 10 lbs., \$4.00.

LONG WHITE OR COW HORN.—Matures very quickly; root shaped like a carrot, about half of which is formed above ground; flesh white, fine-grained and sweet, and of excellent quality. 10 cts. oz.; 20 cts. $\frac{1}{4}$ lb.; 40 cts. lb.; 10 lbs., \$3.50.

YELLOW FLESHED.

YELLOW GLOBE.—One of the best varieties for general crop; flesh very firm and sweet, and keeps well until late in the spring; grows to a large size, and is excellent both for stock or table use. 10 cts. oz.; 20 cts. $\frac{1}{4}$ lb.; 45 cts. lb.; 10 lbs., \$4.00.

YELLOW ABERDEEN.—Very hardy and productive, good keeper; globe-shaped; color, pale yellow, with purple top. Very firm in texture, and closely resembling the Ruta Bagas in good-keeping qualities; good for table or stock. 10 cts. oz.; 20 cts. $\frac{1}{4}$ lb.; 45 cts. lb.; 10 lbs., \$4.00.

If desired by mail add 8 cts. per lb.

HENDERSON'S HALF LONG DANVERS CARROT

WATKINS EXPRESS.

WATKINS, N. Y.

THURSDAY, NOV. 18, 1897.

Mr. Bowers has on exhibition in his store a bushel basket of carrots grown by Mr. Craft, Dr. S. B. Allen's gardener. The combined weight of twelve of these carrots makes a bushel. One of the carrots is fifteen inches and three-quarters of an inch in circumference, one foot long, and weighs nearly seven pounds. Upon being asked the reason of his success in gardening, Dr. Allen said it was due to the use of good seed, which for the last fifteen years he had purchased of Peter Henderson & Co., of New York. Dr. Allen further remarked that he thought farmers were generally too indifferent in regard to the quality of seed which they used, and that he had found it most economical in the end to purchase the best.

and Mrs. J. W. Fink entertained
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696 BUSHELS
PER ACRE

Copyright, 1899, by Peter Henderson & Co.

CARROTS.

There is no more profitable root crop on the farm than Carrots, especially on deep sandy soils. When grown as a field crop the finest and most shapely roots can be sold at a handsome profit, the balance fed to stock with the most beneficial results. Horses are particularly fond of them, and besides the nutritive value they seem to be a sort of tonic to horses, keeping them in the best of condition with sleek looking coats. They can be stored or pitted in the same way as potatoes and marketed or used during the winter. The best plan is to prepare the ground in April and harrow twice before sowing the seed the latter part of May. This will kill most of the weeds, and sown at this time the Carrots will come along quickly and be easily cultivated and kept clean. The rows should be 18 inches to 24 inches apart and to secure large shapely roots they should be thinned to 5 or 6 inches apart.

Any farmer who once grows a good crop will appreciate their value and never be without them.

WHITE VOSGES.—The heaviest cropping field Carrot, producing thick shapely carrots, which are easily harvested. They are used for stock feeding. They grow clean and free from side roots, and are easily harvested. 10c. oz.; 30c. $\frac{1}{4}$ lb.; 80c. lb.

LONG ORANGE IMPROVED.—Of large size, fair specimens averaging 12 inches in length, with a diameter of 3 inches at the top. Color orange red. Fed to milch cows it imparts to the butter a delicious flavor and rich golden color. 10c. oz.; 25c. $\frac{1}{4}$ lb.; 60c. lb.

HENDERSON'S HALF-LONG DANVERS.—A handsome cylindrical-shaped Carrot of good size and stump rooted. Under the best cultivation it has yielded from 25 to 30 tons per acre. (See Cut.) 10c. oz.; 25c. $\frac{1}{4}$ lb.; 70c. lb.; 10 lbs., \$6.50.

LARGE WHITE BELGIAN.—Exclusively grown for stock. 10c. oz.; 20c. $\frac{1}{4}$ lb.; 40c. lb.

LARGE YELLOW BELGIAN.—Similar to above except in color. 10c. oz.; 20c. $\frac{1}{4}$ lb.; 40c. lb.

SOW AT THE RATE OF 12 TO 15 LBS. PER ACRE.

SUGAR BEET.

AVERAGE YIELD, 20 TO 25 TONS PER ACRE.

LANE'S IMPERIAL.—An improved variety of the French Sugar Beet, obtained by careful selection in this country, and recommended as being hardier and more productive. 20 cts. lb.; in lots of 10 lbs., 15 cts. lb.

WHITE.—Attains a large size, and is extensively grown for feeding; largely cultivated in France for the manufacture of sugar. 20 cts. lb.; in lots of 10 lbs., 15 cts. lb.

VILMORIN'S IMPROVED WHITE.—A greatly improved variety of the preceding, obtained by over 20 years' continued and systematic selection. The proportion of sugar in the roots, under ordinary circumstances, amounts to 18 to 20 per cent., while in other varieties the usual average is 12 to 15 per cent. Has yielded 30 tons and over per acre, and is unequalled for feeding cows and young stock. 25 cts. lb.; in lots of 10 lbs., 20 cts. lb.

If desired by mail add 8 cts. per lb.

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The "Henderson" Lawn Grass Seed

IS THE BEST FOR OUR
AMERICAN CLIMATE...

Lawns, Grass Plots,
Cricket Grounds,
Tennis Courts, Etc.,

With it you
can make...

AS SOFT AS VELVET AND AS GREEN AS EMERALD
ALL SUMMER LONG,

In from 6 to 8 weeks' time!

Sow
...The...
"Henderson"
Lawn Grass Seed
and obtain
A Grassy Carpet of . .
. . Unrivalled Emerald
In 6 to 8 weeks' time!
It is the
PUREST, CLEANEST,
HEAVIEST
Lawn Grass Seed
Ever Offered.
NO WEED SEEDS
in the
"HENDERSON"
LAWN GRASS SEED.

THE "HENDERSON" LAWN GRASS SEED will form a close, thick turf in a few weeks' time, with no tendency to stool or grow in clumps. It roots deeply and withstands severe droughts without turning brown, maintaining its beautiful deep green color throughout the season. We have made the formation of permanent lawns a study for years, and **The Finest Lawns in this Country To-day** were obtained by using The "Henderson" Lawn Grass Seed, which is composed of various grasses that grow and flourish during different months of the year, so that a rich, deep green, velvety lawn is constantly maintained, rivaling the famous lawns of Old England.

If people only knew how comparatively easy it is to make a lawn with the "Henderson" Lawn Grass Seed, the days of using sod, with all the attendant expense, would soon be over.

The beautiful lawns at the World's Fair in Chicago we produced in six weeks' time with the "Henderson" Lawn Grass Seed. Not one of the charming features of the Exposition was so universally admired as our "setting of emerald velvet," which, notwithstanding the long-continued drought of the summer, *retained its verdure throughout the entire season.* Besides being the only lawn grass seed granted a medal, we exhibited the separate grasses used in the mixture, and received **Seven Awards** for superior quality and purity of samples.

THE "HENDERSON" LAWN GRASS SEED is, relatively speaking, the cheapest seed offered, because, while the lawn grass mixtures of other seedsmen will not average over 14 lbs. to the bushel, this weighs from 20 to 21 lbs. per measured bushel.

Full Instructions of "HOW TO MAKE A LAWN" are given free with every package.

... THE QUANTITY REQUIRED ...

(We furnish it in large or small quantities to suit the pretentious lawn or the modest dooryard plot.)

The quantity required for making new lawns is 5 bushels per acre, or for renovating old lawns, 1 to 2 bushels. For a plot 15 x 20, or 300 square feet, 1 quart is required for new, or 1 pint for renovating old lawns.

Prices, 25c. per quart, \$1.50 peck, \$5.00 bushel (20 lbs.) (If by mail, add at the rate of 5c. per quart for postage.)

HENDERSON'S
CLYDESDALE OATS

35 & 37 CORTLANDT ST.
NEW YORK.

Peter Henderson & Co's
AMERICAN FARMERS MANUAL 1899

DWARF
ESSEX
RAPE.

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