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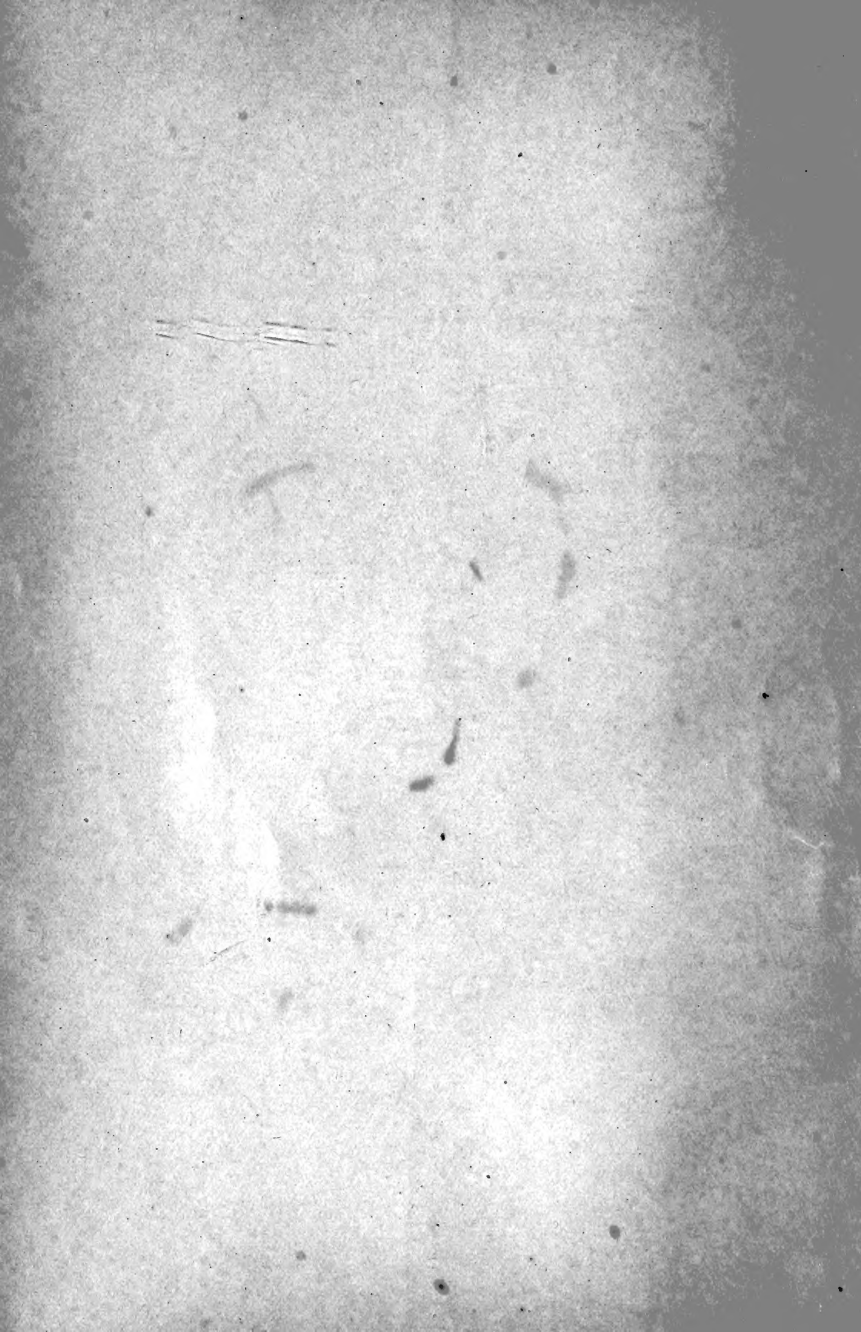
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Flesh.



Milk.



Health.

PUBLISHED BY

The F. E. Sanborn Company,

OMAHA, NEB., U. S. A.

Flesh.

Milk.

Health.

A TREATISE FOR THE

Practical Stock Raiser and Dairy Farmer

ON THE

Production of Flesh;

Production of Milk;

Prevention and Cure of Disease..

✓
BY THE F. E. SANBORN COMPANY,

OMAHA, U. S. A.

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REVISED EDITION.

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By F. E. Sanborn.

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REES PRINTING COMPANY
1892

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UNIVERSITY OF NEBRASKA.

LINCOLN, May 4, 1889.

THE F. E. SANBORN COMPANY,

Omaha, Nebraska.

Gentlemen:

I have examined a sample of the Standard Horse and Cattle Food and find that it does not contain any mineral matter whatever, except a small percentage of sulphur and common salt.

Very respectfully,

(SIGNED) H. H. NICHOLSON,

Professor of Chemistry.

Iowa College of Science, Agriculture and Mechanic Arts.

CHEMICAL DEPARTMENT.

AMES, IOWA, July 18, 1892.

To Whom it May Concern:

This is to certify that I have chemically examined a sample of Standard Horse and Cattle Food, put up by THE F. E. SANBORN COMPANY, of Omaha, Nebraska, and I find that it contains no poisonous or harmful mineral or organic substances whatever. The substances composing this mixture are those that excite a healthful appetite in domestic animals, and are promoters of good digestion and assimilation.

(SIGNED) A. A. BENNETT,

Professor of Chemistry.

STANDARD HORSE AND CATTLE FOOD is entirely free from arsenic, antimony or any other poisonous drug. It contains no mineral whatever, except one per cent. sulphur and three per cent. common salt. We will pay \$500 and the cost of analysis for the detection of any other mineral in its formation.

THE F. E. SANBORN COMPANY,

Omaha, July 18, 1892.

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PREFACE.

THE PROFIT IS IN THE FOOD, and to him belongs the credit who can, in the feeding and management of live stock, most fully utilize that profit. The great need of the farmer of to-day is not so much fine-spun theories as a general knowledge of the sound principles which underlie the practical feeding and management of our domestic animals.

The purpose of this book is to furnish to the farmer and stock raiser, in a popular form, not only reliable information and advice regarding the general management and feeding of horses, cattle and all farm animals, and in preventing the diseases to which they are commonly subject, but it is to show to them, in as fair and candid a manner as possible, the advantage in security from disease, as well as the profit to be secured from the use of Standard Horse and Cattle Food. In the body of this work we have said much upon the prevention of diseases among live stock, but not too much, by any means; for, were space not so limited, we could still say more, and continue to give the farmer advice which he could follow with profit.

The methods by which the greatest results may be secured from the feeding of a given amount of fodder have received, within the past two decades, almost universal recognition among practical feeders. Experiments, based upon scientific research, have established the fact that the feeding of a ration to farm animals, properly adapted to their needs and containing a proper proportion of nutrients necessary to the maintenance of the body so that no one kind will be overbalanced by another, is the proper method of feeding to prevent waste. We have included a table of analysis of feeding stuffs showing the nutri-

tive qualities contained in a large amount of the fodders commonly used in this country, and have endeavored to show by theoretical application the means by which the farmer may avail himself of the information contained in it to his profit, whether it be in feeding working animals or those intended for the market or dairy.

The importance of maintaining a good appetite and securing thorough digestion and assimilation have been quite fully treated; for it is in these respects that the farmer certainly needs assistance.

The special attention of the stock feeder has been directed to the ill-advised practice of feeding animals intended for the dairy or for the market a ration but little more than sufficient to maintain their existence.

That part of the book embracing the treatment of diseases has been directed by a thoroughly competent and experienced veterinarian, and in no case has any treatment been advised which is not endorsed by the highest authorities.

We trust that our efforts will meet with that recognition which we believe our honesty of purpose merits. If they do, we will be satisfied. Very respectfully,

THE F. E. SANBORN COMPANY.

OMAHA, NEBRASKA, July 5, 1892.

INTRODUCTION.



OUR FARM ANIMALS, representing the investment of millions of wealth, are kept with two principal objects in view—labor and profit. It is, therefore, of the most vital importance that the food consumed should produce the best results in the direction for which it is intended; also that their general care and management be such as will insure their health and fullest development.

That the proper care of our domestic animals, which contribute so much to our comfort and necessities, is often times neglected, and many times misunderstood, none will deny. This statement will gather strength when we reflect upon the abuses of the natural laws governing the care of these same domestic animals, otherwise designated live stock.

Perhaps there is no pursuit which is surer of success, when well understood and practically followed, than that of farming and stock-raising. On the contrary, if but partially understood and indifferently followed, the best laid plans are too often attended by disappointment and disaster.

It costs the farmer no more to keep a good animal than a poor one. The only profitable condition is a good condition; and the farmer and stock raiser will consult his own best interests by keeping his live stock constantly in the highest state of thrift and health. *Keep the animals constantly in good condition* ought therefore to be the motto of every farmer. It is the great secret of their success, and the difference between success and failure turns upon it.

The organ of first importance is the stomach; for it is here that the food undergoes those changes which transform fodder into flesh, milk or energy. A good appetite, vigorous digestion and thorough assimilation must all be secured, in order that the animal may reach its highest degree of profit or usefulness.

In feeding animals for profit a certain amount of food is

required to maintain their existence. This much is outlay without any returns. All that is consumed in excess of this amount means profit. It is, therefore, of first importance that the appetite of the animal be developed to the highest capacity, in order that it may consume the greatest amount possible in excess of what is required as the food of support. When this increase in appetite is satisfied with properly selected food, and is followed by good digestion and assimilation, the highest condition of profitableness of the animal may be secured.

The blood is the colored fluid which circulates through every part of the body, by means of the arteries and veins, carrying nourishment which it derives from the food taken into the digestive organs. It is also the channel through which all the effete and worn out matter is carried from the system.

When we consider that the blood is the primary source of all vitality, we can readily understand the importance of its being properly supplied with nourishment. This nourishment can only be secured through the agency of the stomach, which in its turn must be supplied with proper food in proper quantities.

Impure blood is the most prolific of all sources of disease, and is due chiefly to impaired circulation, or improper nourishment, or both. Defective circulation among live stock is due principally to the blood being thickened by a heat producing diet, or by a debilitated condition of the general system. It is not hard to understand the result of feeding stock month after month with corn, which, from its heat producing tendencies, creates an impaired circulation, thereby hindering the blood in its great work of purifying the system.

The intelligent use of Standard Horse and Cattle Food, when accompanied by proper feed in proper quantities, not only thoroughly regulates the condition of the blood, but strengthens and invigorates the digestive organs, and enables the animal to secure the greatest possible amount of nutriment from all the food consumed.

FEEDING STOCK TO PRODUCE FLESH.

VERY intelligent reader and thinker who has studied the history of stock raising and stock feeding, for the past quarter of a century, has been astonished at the progress made in this great industry. The slipshod methods of former years have been swept aside, and science has been called to the aid of the farmer. Weights and measures have taken the place of guesswork, the thoroughbred has supplanted the scrub, and order and prosperity reign in the domain of the husbandman.

Whilst nearly every farmer has his own peculiar methods, and these methods may differ widely from those of his neighbors, yet the great body of feeders and farmers are moving forward along the same line, and keeping pace with the spirit of progress which characterizes the age in which we live.

Conditions and methods have changed as the years have gone by; the vast grazing grounds of the western states have gone forever; the prices of hay and grain increase with the seasons, and the stock raiser of to-day, who will not acquaint himself with the results of investigation and experience, and profit by the lessons which they teach, will find himself distanced by his more progressive neighbor.

The methods which found favor twenty-five years ago were good in their way, and the times and conditions which then prevailed allowed them to be successful; but they will not do now; the farmer of to-day cannot do as his father did, and hope to reap the same reward.

It costs more to raise stock under present conditions than it formerly did, and, as our agriculture becomes more intense, this cost will increase. Our rich prairie soil, which now seems inexhaustible, will become less and less fertile by continued cropping, and a rapidly increasing population will necessitate a

greater subdivision of the lands. All of this means an increase in the cost of farm products, as well as a rise in the price of land itself. The legitimate result of these conditions should be a more systematic method of cultivating the soil, and a more careful husbanding of all the waste materials. In no branch of practical farming should this apply with so much force as in stock raising.

Agricultural colleges and experimental stations have been established for the purpose of securing reliable data to be used as a basis of operations by the practical stock feeder; in short, to find ways and means by which this greatest of industries may secure to its promoters the largest profits possible.

While these experiments furnish reliable knowledge upon this subject, each individual stock feeder must think out for himself the manner of applying this knowledge to his personal needs. All of the materials which go to make up the most approved rations may not be at his command; he must learn to utilize to the best advantage those feed stuffs which he can raise or procure the most economically. If he would succeed, he must not only consider the proper kind but also the cost of the different feed stuffs. Profit must be the basis of all successful stock feeding.

NATURE OF THE ANIMAL BODY.

Science has enlightened us upon the workings of the animal organism, and, while there are many things about it which we do not understand, yet the knowledge we possess enables us to act very intelligently with regard to its nourishment and care. We know that it is built up by the digestion and assimilation of the food; we also know that much depends upon the character of that food, as regards the results attained; but it remains for chemical analysis to give us the constituent elements of the body, and the nutritive qualities found in feed stuffs.

By comparison we find that certain feed stuffs supply nourishment to particular portions of the body, when digested and assimilated, whilst other kinds of feed stuffs perform a similar office for other parts of the body. From these facts, it will

be seen that the body can be sustained and increased by a judicious selection of those feed stuffs which most fully supply its proper nourishment.

The animal body can be reduced to four substances, namely, protein (lean flesh), fat, water and ash. These are the substances which the food must supply. The condition of the animal depends upon their relative proportion in the body. The amount of water in the body varies from forty to sixty per cent. of the live weight. The fundamental elements of which the body is built up are, therefore, lean flesh, fat, water and ash. They are not created or altered by the body. They must be furnished by the food, and when furnished in the proper form the body has the power to extract from it its proper nourishment.

NATURE OF FOOD MATERIALS.

Providence has been very generous to the brute creation, as well as to man himself; she has provided for their every want. The intimate relationship between plant and animal life is marvelous to contemplate. The two are equally dependent one upon the other. The growing plant gives off oxygen, which, when taken into the lungs, helps to sustain the life of the animal; while the carbonic acid gas thrown off from the lungs forms nourishment for the plant. The animal fed upon the products of the vegetable world dies, and its body returns to the elements from which it sprung; thus the great phenomenon of nature goes on.

Feed stuffs are composed substantially of the same elements and in the same combinations as those found in the body. The protein, carbohydrates, etc., are found in varying quantities in plants, some containing more, and others less, of the nourishing elements. One plant or grain may be especially rich in protein, and another contain a surplus of carbohydrates. No one plant contains all of the elements necessary to sustain life for a protracted period, hence the necessity of a mixed ration in order to secure perfect sustenance. This leads us to the interesting subject of selection of feed stuffs, so as to secure as

nearly as possible a proper and profitable ration for our animals.

SELECTION OF FEED STUFFS AT HAND.

The farmer and stock feeder will not always find upon his farm, or economically within his reach, all of the feed stuffs which the most approved ration may require. His duty, as well as profit, lies in making the most economical use of the materials at his command. He should carefully study the relative value as a feed stuff of every plant produced upon his farm, compare their digestibility, and, by reference to the table of plant and grain analysis, select the most economical combinations possible. In other words, he should select such a ration as will most perfectly answer the purpose he has in view, whether it be a ration for maintenance only, for work animals, or one which is expected to fit animals for market. His calculations must take into account the materials at hand, their particular properties, and their comparative digestibility, as well as their cost. He must not for a moment lose sight of the real object of feeding cattle or hogs for the market, namely, profit; nor should he neglect, in the least, the details of his business; for it is the little things which make up the great results of successful business in this, as well as in any other, calling.

The accompanying table, which covers a wide range of materials, many of which are available to the practical farmer, will be found of great value in selecting a proper food ration:

FODDERS.	Per cent. of Water and Ash.		Per cent. of Digestible Nutrients.			Nutritive Ratio.
	Water.	Ash.	Protein.	Carbohy- drates.	Fats.	
HAY, STRAW.						
Corn fodder, field cured	32.1	4.3	2.5	35.1	0.6	20.0
Clover hay.....	12.6	6.1	6.9	37.7	1.3	5.9
Timothy hay.....	11.1	4.1	3.1	43.3	0.9	14.7
Mixed grasses.....	15.5	4.7	3.2	40.2	0.9	13.26
Oat straw	9.6	5.2	1.4	42.6	0.7	20.15
Rye straw.....	11.1	5.4	1.0	37.5	0.6	39.00
Wheat straw.....	6.5	7.0	0.9	37.7	0.5	43.27
Timothy and redtop	12.36	4.80	3.72	44.87	0.96	12.6
Barley hay, seed in milk	10.25	4.44	5.24	44.82	1.18	9.0
Oat hay, seed in milk.....	9.15	6.48	5.07	43.85	1.31	9.2
Maize stover.....	19.56	5.79	2.41	34.48	0.47	14.7
GREEN FODDERS.						
Pasture grass.....	80.00	2.00	2.5	9.9	0.4	4.36
Corn ensilage	80.50	1.30	1.1	11.0	0.5	11.13
Clover ensilage.....	76.30	2.50	2.2	11.0	0.6	5.68
Maize fodder.....	80.98	1.13	1.19	10.87	0.31	9.90
Sorghum.....	76.08	0.91	0.80	12.26	0.28	16.00
Rye fodder.....	75.28	1.88	1.77	13.38	0.39	8.00
Clover.....	73.33	2.16	2.70	12.78	0.44	5.00
GRAIN AND SEEDS.						
Barley	10.9	2.4	9.7	62.0	1.7	6.72
Oats.....	10.9	3.0	9.8	48.0	3.9	5.5
Rye.....	11.6	1.9	8.5	58.4	1.5	7.37
Wheat.....	10.5	1.9	9.5	60.9	1.9	6.91
Dent corn.....	10.10	1.55	8.16	65.64	4.36	9.3
Flint corn.....	11.00	1.44	8.35	65.00	4.21	8.9
Sweet corn.....	8.82	1.92	9.18	62.56	6.92	8.6
Western corn	19.10	1.20	6.25	60.06	3.14	10.8
Millet.....	14.00	3.0	9.5	45.0	2.6	5.4
Buckwheat.....	14.00	1.8	6.8	47.0	1.2	7.4
Field bean.....	14.5	3.1	23.0	50.2	1.4	2.3
Flax seed.....	12.3	3.4	17.2	18.9	35.2	6.21
Rape seed.....	11.8	3.9	15.5	10.2	40.4	7.16
Hemp seed.....	12.2	4.5	12.2	16.2	30.2	7.5
Pumpkins.....	89.1	1.0	0.4	7.1	0.1	18.4
Peas.....	13.2	2.4	19.7	55.0	1.5	2.95
Cotton-seed meal.....	8.3	7.3	35.8	22.3	11.7	1.44
ROOTS AND TUBERS.						
Mangolds.....	91.3	1.0	1.1	4.5	.....	.....
Rutabagas.....	87.1	1.4	0.7	8.1	.....	.....
Turnips.....	88.9	0.7	0.8	7.2	.....	.....
Potatoes.....	78.5	0.9	1.4	16.6	.....	.....
Artichokes.....	80.0	1.0	2.0	16.8	0.2	8.7
Sweet potatoes.....	69.7	1.1	0.9	28.0	0.3	31.9
BY-PRODUCTS.						
Brewers' grains.....	75.0	0.3	4.8	11.3	1.2	3.0
Sunflower cake.....	10.3	8.1	31.3	24.7	7.6	1.3
Malt sprouts.....	10.3	5.7	18.8	48.1	0.9	2.73
Oilmeal, old process.....	9.2	5.9	27.1	34.3	7.0	1.91
Oilmeal, new process.....	10.7	5.6	28.3	34.8	2.8	1.48
Rye bran.....	11.5	3.7	10.2	47.7	1.5	5.04
Wheat bran, roller mill	12.0	5.6	12.6	44.1	2.9	4.10
Wheat bran, old process.....	12.0	4.9	10.2	47.5	2.6	5.40
Wheat shorts.....	12.7	4.3	10.8	46.8	2.8	4.97
Wheat middlings	12.0	3.18	11.6	48.87	2.68	4.7
Corn and cobmeal.....	.....	.....	6.8	56.6	3.9	9.7

FEEDING STANDARDS.

Feeding Standards are concise statements of the amounts of digestible protein, carbohydrates and fat, which experience has shown are the best adapted to the accomplishment of the purpose for which the animals are intended, whether that be for the dairy or the butcher's stall.

The advantages of a reliable feeding standard are various. It enables the stock feeder to choose such fodders and grains as will the most economically prepare his stock for any condition he may have in view for them. It presents at once, and in form for practical and immediate application, the best results of many experiments, and places the stock raiser and feeder in a position to utilize the products of his farm to the best advantage.

A feeding standard is but a guide for the formation of feeding rations, which latter may be varied as often as the materials at hand will admit. The amounts given are calculated for a thousand-pound animal; of course, for a larger animal, the amount should be increased according to the increased weight of the animal; but for smaller ones the amount should not be decreased in proportion to the decreased weight, as the surface which radiates or loses heat is nearly the same in the smaller as in the larger animal.

In the body of this work the terms albuminoids and carbohydrates are frequently used in explaining the quality of foods. On page 11, and following, we show the complete composition of fodder vegetables. But for those who have never studied chemistry we will explain the use of these different parts of foods.

PROTEIN, OR ALBUMINOIDS, make or grow muscles in animals; and foods rich in albuminoids are also rich in phosphate of lime, to grow the bones—so that such foods grow the muscles and frames of young animals—such as oil-meal, pea-meal, wheat, bran, oats, clover hay, etc.

CARBOHYDRATES are composed of carbon and water. This part of foods produces animal heat and makes fat. Starch, gum, sugar, woody fiber, and all the vegetable oils are composed of carbohydrates. Nine-tenths of the value of straw, ripe corn stalks, etc., is in their carbohydrates.

The following feeding standards are given as the averages of a large number of experiments with horses, cattle, sheep and swine, made in Germany and in this country:

FEEDING STANDARDS PER DAY AND PER 1,000 LBS.,
LIVE WEIGHT.

	Total organic substances, lbs.	Nutritive (digestible) substances.			Total nutritive substances, lbs.	Nutritive ratio, lbs.
		Protein, lbs.	Carbohydrates, lbs.	Fats, lbs.		
1. Oxen at rest in stall.....	17.5	0.7	8.0	.15	8.85	1:12
2. Wool sheep — coarser breeds.....	20.0	1.2	10.3	.20	11.70	1:9
Wool sheep — finer breeds.....	22.5	1.5	11.4	.25	13.15	1:8
3. Oxen moderately worked.....	24.0	1.6	11.3	.30	13.20	1:7.5
Oxen heavily worked.....	26.0	2.4	13.2	.50	16.10	1:6
4. Horses moderately worked.....	22.5	1.8	11.2	.60	13.60	1:7
Horses heavily worked.....	25.5	2.8	13.4	.80	17.00	1:5.5
5. Milch cows.....	24.0	2.5	12.5	.40	15.40	1:5.4
6. Fattening oxen — first period.....	27.0	2.5	15.0	.50	18.00	1:6.5
Fattening oxen — second period...	26.0	3.0	14.8	.70	18.50	1:5.5
Fattening oxen — third period.....	25.0	2.7	14.8	.60	18.10	1:6
7. Fattening sheep — first period.....	26.0	3.0	15.2	.50	18.70	1:5.5
Fattening sheep — second period..	25.0	3.5	14.4	.60	18.50	1:4.5
8. Fattening swine — first period.....	36.0	5.0	27.5		32.50	1:5.5
Fattening swine — second period..	31.0	4.0	24.0		28.00	1:6
Fattening swine — third period....	23.5	2.7	17.5		20.20	1:6.5

The first column in the above table, headed "total organic substances," gives the amount of feed required, less the water and ash. It must be borne in mind that in feeding dry fodder the amount as given in that column must be increased to allow for the water and ash it contains, which can easily be ascertained by referring to the table of analysis of feed stuffs.

The next three columns, headed "protein" (lean flesh or albuminoids), "carbohydrates" and "fat," state the amount that the ration should contain of each of them.

The fourth column represents the sum of the protein carbohydrates and fat.

The "nutritive ratio" is the ratio which the amount of digestible protein bears to the sum of digestible carbohydrates and fat. In calculating this ratio, we take two and one-half

times the amount of fat and add it to the amount of carbohydrates, for the reason that one pound of fat produces as much heat as two and one-half pounds of starch.

HOW TO COMPOUND A RATION.

The first point to be determined is the object for which the feeding is intended, whether for simple maintenance only, or for growth, fattening or milk. The next thing to do is to ascertain the weight of the animal, as the ration must be in proportion thereto. The amount of coarse fodder contained in the ration for cattle and sheep should be from 2 to $2\frac{1}{2}$ per cent. of the live weight of the animal; then refer to the table of analysis of feed stuffs, and learn the amount of nutritive elements contained therein. This done, add to the ration grain feed containing such an amount of protein, carbohydrates and fats as will bring the ration up to the required standard.

In preparing a ration, enter the ingredients of each material used, as given by the table of analysis of feeding stuffs, under four columns, headed, respectively, "total dry matter," "protein," "carbohydrates" and "fats." To secure the amount of total dry matter in the feed used, deduct the amount of water and ash, as given in the table, from the total weight of the feed stuffs; then put the amount of each nutrient under its respective column, and continue in like manner with each kind of feed to be used, adjusting the quantity of each kind, so that, when the required amount of total dry matter has been employed, the totals of protein, carbohydrates and fats, as shown by the footings in each column, will, as nearly as possible, correspond with the amounts called for in the standard.

A little attention to this important matter will soon make it easy for any stock feeder to compound a suitable ration for his animals.

Suppose it is desired to adjust a ration for fattening oxen for the first period; the feeding standard calls for 27 pounds dry matter, which must contain 2.5 pounds protein, 15 pounds carbohydrates and one-half pound of fat for a thousand pound animal. It may be made up as follows:

DAILY RATION FOR AN OX WEIGHING 1,000 POUNDS.

	Dry Matter, lbs.	Protein, lbs.	Carbohydrates, lbs.	Fat, lbs.
Fifteen pounds clover hay.....	12.20	1.04	5.65	.19
Five pounds corn fodder.....	3.18	.13	1.75	.03
Ten pounds western corn.....	8.03	.62	6.00	.31
Five pounds bran, roller process.....	4.11	.63	2.21	.14
Totals.....	27.52	2.42	15.61	.67
Amount required by standard.....	27.	2.5	15.	.50

The above ration is slightly in excess of the feeding standard in carbohydrates and fat. It is calculated with the idea that corn fodder and clover hay form the basis of the ration. In compounding this ration we refer to the table of analysis of feed stuffs, and find that 100 pounds of clover hay contain 12.6 pounds of water, 6.9 pounds of digestible protein, 37.7 pounds of carbohydrates and 1.3 pounds of fat. These figures, divided by 100, by removing the decimal point two places to the left, gives the amount one pound contains of each of these substances, and multiplying by 15 gives the quantities of each in 15 pounds, the amount used. All the other ingredients of the ration are treated in the same manner, it being ascertained by trial how much to use of each one.

The proportion of food consumed by swine, when compared with that of other animals is very large. Full grown hogs when fattening will, during the first period, consume upwards of forty pounds of dry matter for every thousand pounds of live weight. During the second and third period the amount of food diminishes, until it does not greatly exceed that of fattening cattle or sheep. It is a common custom to feed pigs a fattening ration as soon as they are weaned; they thus grow and take on fat at the same time. This fact, in a measure, accounts for the rapid gain in weight often noticed in young fattening hogs. It is not uncommon for them to make a gain

in weight equal to twenty-five per cent of the dry matter consumed, while generally it requires from five hundred to six hundred pounds of dry matter to produce an increase of one hundred pounds in the weight of mature animals.

It may be stated that no feeding standard intended for fattening swine can be unvarying; for the only limit to the consumption of food among these animals is the limit of their appetite. The different fodders produced upon the farm which may be fed to swine are usually plentiful, and afford a choice to the intelligent feeder. The same plan substantially is followed in compounding a ration for fattening swine, as was explained under the head of cattle in this chapter.

Sheep are very nearly allied to cattle in habits, both being ruminants, and feeding upon nearly the same character of foods. They require, however, a more liberal supply of protein than the other animals. The results of a great many experiments made in feeding sheep for mutton proves the truth of this statement. The increase in the percentage of protein naturally increases the cost of feeding; at the same time it is offset by the fattening process being made more rapid. Feeding standards for sheep, on this account, are even more difficult to formulate than for other animals.

The feeder should thoroughly familiarize himself with the table of feed stuffs analysis, as well as the other tables given. Most people lose the real essence of a book, or treatise, by not regarding the tables with that interest which their importance merits.

Having become familiar with the tables referred to, the stock feeder should chose from among those feed stuffs at his command the products which most nearly contain the elements required, and in the proper proportions. He will not find any one containing all the needed nutrients, but by successive experiments he will be enabled, with the aid of the tables, to approximate an excellent feeding ration, and one which will, in point of economy, amply repay him for every hour spent in compounding it.

A variety of feed stuffs, when used in compounding any feeding ration, has a peculiar and distinct value, which few farmers, until of late years, have appreciated, and which science has not yet satisfactorily explained.

DIGESTIBILITY OF FEED STUFFS.

All feed stuffs are not equally digestible. Some may contain an equal amount of nutritive elements with certain other plants or grains, and yet when fed to animals yield a much less amount of valuable matter for sustenance. This is due to certain conditions existing within the plants themselves. When we speak of a food as being more or less digestible, we simply mean that the animal has the power of appropriating more or less of the nourishment which it contains. Chemical analysis will reveal the exact amount of nourishing elements bound up in a food, but, of two foods of the same composition, one may be more digestible than the other, and therefore the more economical food of the two. Some foods are completely digested, as, for instance, milk; others are only partially digestible. The grains, hay, straw, etc., contain a certain amount of nourishment which can not be appropriated, the animal body not having the power to extract all of it, and in this respect it is like our field crops—they can not absorb all of the available fertilizers; a given amount will always remain in the soil. This is an important point, because it is only that portion of the food which is digested that is of any value, and hence, in mixing and apportioning feed, we should in all cases count only on the digestible portion.

DIFFERENCE IN DIGESTION AMONG ANIMALS.

The most common observation will detect among animals on any farm, whose owner makes a pretense of stock raising, some animals which do not show the average thrift of the herd. With substantially the same opportunities and advantages, they seem unable to keep pace with their fellows. They are conspicuous among the other animals by reason of their generally unthrifty appearance, and, although the amount of food con-

sumed might well give them a place among the best of the herd, yet it seems to be almost wasted when compared with the actual returns secured from the more thrifty ones. Individual peculiarities may account for a few of these cases, but faulty digestion lies at the bottom of the great majority of them. Other things being equal, it is fair to presume that there is a wrong here which can be corrected, for, if the food which is consumed is properly digested and assimilated, it will surely yield a profitable return in the gain of the animal; in other words, make something more of him than a mere machine for the grinding of grain.

EFFECTS OF INJUDICIOUS FEEDING OR EXPOSURE.

It is a well-known fact that bodily exercise will draw upon the energies of the body, and demand an increased feed ration. This is not only true of the outward motions of the body, but also of the internal movements necessary to digestion. If a very bulky fodder be given, the increased work of moving it in and through the digestive apparatus has exactly the same effect as labor of any other kind. Undoubtedly a great deal of the benefits derived from the feeding of easily digested food is due to the saving to the body of the extra loss caused by the effort to digest the less soluble food.

Exposure has an unfavorable influence upon fattening animals, also. Certain elements of the body, notably fats, are consumed by it to maintain a certain degree of animal heat. If an animal be unduly exposed to the cold, a greater amount of fat will be consumed to keep up the normal temperature, the fattening process will be deterred, and more food will be required. The body undergoes a constant change; the food builds up, and exercise tears down. The careful stock feeder will use his endeavors to have the balance always on the credit side.

AMOUNT OF WATER DRANK SHOULD BE RESTRICTED.

We have already shown the ill effects of exposure upon cattle, and especially upon feeding animals. A too generous allowance of water is no less to be guarded against. They

both lead to the same result, namely: consumption of matter in the animal body by an effort of the system to restore its normal temperature. This consumption of the materials already stored up in the body decreases the profits of the feeder. The stock feeder should restrict the amount of water drunk by his feeding animals to the amount required by health. This is, for cattle, roughly estimated, at between four and five pounds of water to every pound of dry matter consumed. Of course the more watery the fodder, the less water is required. Too warm a stable, or too large an allowance of salt, are conditions which cause the animal to drink too much water. Animals should not be compelled to slake their thirst from icy streams, or from the consumption of snow, as they are sometimes allowed to do. Where practical with feeding cattle, it would be profitable to warm the water slightly, as the real loss to the body in drinking ice cold water is caused by the effort in warming it to the temperature of the body. This misapplied energy comes from the combustion of tissue, and is no less a loss than that which would be sustained were the feeder to shelter his fattening animals on the bleak side of a straw stack. It is just so much profit subtracted from the net results of feeding, and consequently from the owner's pocketbook.

NO PROFIT IN FEEDING A LIFE SUSTAINING RATION.

What is meant by a life sustaining ration is one which will keep the animal in such a condition that he will neither gain nor lose. A knowledge of the exact amount necessary in what is called the maintenance ration for the various animals is very valuable. It enables us to calculate a ration and cost of keeping of idle animals, and to tell the amount which we must feed to secure a profit. There is no greater mistake made by the stock raiser than niggardly feeding. Be he ever so penurious in other matters, he should be generous to his fattening animals. His very niggardliness is rank extravagance. A fattening animal may be compared to a mill; the more grain he grinds the more toll will the miller get. Every pound of hay, grain or fodder that a fattening steer or pig can be induced

to eat more than is required to maintain his body in its normal condition is a gain to its owner, if that amount be digested and assimilated. There is a two-fold gain in this increased consumption by the animal; it is not only feeding in a manner that will secure absolute and perceptible gain, but it will, by the increased ratio with which the flesh is laid on, shorten the time required to prepare the animal for the market.

APPETITE, DIGESTION AND ASSIMILATION.

A careful selection of the most palatable foods to be secured and a vigorous condition of health are the prime requisites to a good appetite and a greater consumption of food. The animal should be in prime condition, not only that his fattened carcass may become wholesome food, but that he may be the more profitable as a flesh forming machine. His digestion should keep pace with his appetite, so that assimilation may be carried on more perfectly, and the increased nourishment be secured.

APPETITE.—Appetite may be called the voice of the system calling for the means to sustain it. It is the sensation which the creator has placed in the animal to induce it to seek sustenance. The limit of the appetite is the real feeding standard for any fattening animal. The stock feeder may select the finest of the herd, he may provide himself with the most approved ration, and yet, if the animal does not consume more than a maintenance ration, he loses money every day that he feeds him. The results of repeated experiments prove that the growth of an animal is in direct proportion to the amount of digestible food consumed. How necessary then it is that our fattening animals have a good appetite.

DIGESTION.—The process of digestion takes place in the alimentary canal; it begins in the mouth, and ends in the smaller intestines. The first step is called mastication, or chewing of the food. When it is broken up, the food is more readily acted upon by the juices of the stomach. During the process of mastication the food is mixed with saliva, which moistens the food and softens it so that it may be the more easily swallowed and

acted upon in the stomach. The saliva acts powerfully upon the starch in the food, converting it into a sort of glucose, or grape sugar, thus preparing it for easy digestion. In all animals having a simple stomach, the act of mastication is completed at once; but in the case of ruminants, or animals which chew the cud, it is only slightly chewed at first, and then passes into one of the compartments of the stomach. The partly chewed food remains in this large stomach, or paunch, for a time, where it is softened by the saliva with which it was mixed in the mouth and by the fluids secreted in the stomach. The part of the feed which becomes dissolved by this process passes directly to the other divisions of the stomach, whilst the undissolved parts are returned, a portion at a time, to the mouth, to be re-chewed and again mixed with the saliva. When swallowed the second time, a part of the food passes through a peculiar opening in the gullet into the first and second divisions of the stomach; but a large portion of it passes on into the third stomach. In this division of the stomach, the food is subjected to a squeezing process, which is accomplished by the contraction of the muscles of this organ. This process brings the dissolved contents of this apartment in contact with myriads of small capillaries, which cover the entire inner surface of the third stomach. These little vessels, like tiny mouths, suck the nutriment from the food, and convey it almost directly to the blood, by which it is sent on its way to build up the different portions of the body. The whole process of digestion is simply a changing of the solid matters of the food into forms which are soluble in the fluids of the stomach, a condition in which they can be taken up by the circulation.

Careful experiments have determined that the albuminoids are acted upon principally by the gastric juices in the stomach. Starch is dissolved by the saliva, and the fats by the bile.

Digestion is both a chemical and physical process, consisting in solution and chemical change of the nutriments contained in the food. The rapidity and completeness of these changes

depend largely upon the condition both of the animal and of the food itself.

ASSIMILATION.—Assimilation is the process by which the dissolved nutritive elements of the food are conveyed to the blood and by it incorporated into the tissues of the body.

We have seen how the food is dissolved by mastication and the action of the fluids of the mouth, stomach and other organs. As before stated, the inner surface of the entire alimentary canal is supplied with minute vessels which unite with the larger ones and finally carry the nutriment which they have absorbed to the circulation. These small vessels, covering the entire inner surface of the digestive apparatus, suck up the nutritious qualities of the food all along the line, until the useless part of it passes from the bowels. Thus the albuminoids, carbohydrates and fat of the plants become parts of a living animal.

We have seen that the body can only be sustained and increased by the nutrients taken into it, and the more careful the selection of feed stuffs, the more economically is this result obtained. A certain portion of the food consumed is required to sustain life and keep the animal where he will neither gain nor lose. This amount, as before stated, is called a maintenance ration. Obviously, therefore, a profitable feeding ration must exceed a maintenance ration. The more you can increase the amount of food above the mere point of sustenance, the greater the profit.

VALUE OF STANDARD FOOD.

The previous portions of this chapter have been devoted to the scientific methods of stock feeding. The table of feed stuffs analysis reveals to us the nutritive elements bound up in the vegetable kingdom. The feeding standards state the quantities of these elements which must be contained in a properly compounded feed ration, but neither of them inform us as to the manner of increasing the appetite, digestion and assimilation. Throughout every treatise on the feeding of stock to produce flesh is heard the refrain, "Increase the appetite and you increase

the profits." Every pound of digestible feed that an animal can be induced to consume beyond a maintenance ration means profit to the owner. An animal, like a machine, must be in good order to produce good results. Right here is where Standard Horse and Cattle Food begins its work. It is the most powerful aid to the appetite, digestion and assimilation available to the stock feeder of the present day. It purifies the blood, builds up and strengthens the system, thus placing it in a condition of thrift—a condition most favorable to the taking on of flesh.

As has been previously observed, the appetite is the voice of nature calling for food. In fattening animals the great need is to have them vigorous enough to consume more food than is required to sustain the body. It may be increased to any reasonable extent by toning up the entire system, increasing the capacity for the consumption of food, and comes naturally as a manifestation of the increased demands of a more vigorous body. By a judicious use of Standard Food, the stock feeder can easily improve the appetite of his animals so that their consumption of feed stuffs will be increased fully twenty per cent, the value of which is easily shown.

INCREASED DIGESTION AND ASSIMILATION.

An important factor in the feeding of stock is a vigorous digestion. We have demonstrated the value of a good appetite, but it is equally important that the animal have a strong digestion and a perfect assimilation, for, no matter how much feed an increased appetite may induce an animal to consume, there can be no proportionate gain unless that food is thoroughly digested and properly assimilated, and thus made to accomplish the end for which it was intended. Standard Food, by producing a more abundant secretion of the fluids of the stomach, enables the animal to digest and assimilate the greater amount of feed consumed, thereby securing to the body the full benefits of the increased diet. Standard Food does even more than this: it not only increases the consumption of feed, and stimulates digestion in proportion, but it actually enables the system

to extract an increased amount of nutriment from the whole amount of feed consumed. This it does by inducing the harmonious and increased action of all the forces of the digestive apparatus.

Of course no practical stock feeder will expect the above results from an occasional feeding of a ration of Standard Food. It must be fed regularly throughout the fattening period. If this be done, the extra nutriment secured from the grain feed and stored up on the ribs of the animal, by reason of the increased digestion and assimilation, will much more than repay the cost of the Standard Food used, to say nothing of the increased appetite or the increased marketable value of the animal.

Let us see. Take, for instance, three pigs of equal weight and as nearly alike as possible; suppose that, by feeding one 75 pounds of corn in thirty days, he neither gains or loses during that time. This would be a life sustaining ration. Feed the next one 100 pounds of corn in the same time; this would leave 25 pounds of corn for the production of flesh, the life sustaining ration being the same in both. This 25 pounds of corn produces, we will say, 20 pounds of flesh. Now, suppose that, by adding Standard Food to the ration of the third pig, we increase his appetite, so that he will consume 125 pounds of corn in the same time. We would, in this case, have 50 pounds of corn in excess of the life sustaining ration, against 25 pounds in the case of the second pig, which, in the same ratio, would give us a gain of forty pounds. The result is plain, and is as follows:

	Amt. of corn fed	Life sustain- ing ration	Amt. available for increase of flesh	Increase in weight
First pig.....	75 lbs.	75 lbs.	.....	.....
Second pig.....	100 lbs.	75 lbs.	25 lbs.	20 lbs.
Third pig	125 lbs.	75 lbs.	50 lbs.	40 lbs.

The 75 pounds of corn fed the first pig is lost; the 100 pounds for the second pig has produced a gain of 20 pounds of flesh, while, in the case of the third pig, the 125 pounds of corn fed, which is an increase of 25 per cent. over the second pig,

makes a gain of 40 pounds of flesh, or just double the gain made by the second pig. In other words, the extra 25 pounds of corn, aided by the Standard Food, has, in the case of the third pig, produced as much gain as the 100 pounds of corn which was fed to the second pig.

We have given the above figures to illustrate the most important principle in stock feeding, which is that the more a pig, or any fattening animal, will eat and properly digest and assimilate, the more profitable he will prove.

DOES IT PAY?

It may occur to some careful farmer, who has never fed anything except corn and oats, and says they are good enough for him, to ask the question, "If you make my animals eat more, and I go to the expense of feeding Standard Food besides, where does my profit come in?" The result secured is the only criterion by which the cost can be justly estimated. Some farmers may think that because Standard Food costs more per pound than corn, oats, oil cake, etc., that they cannot afford to use it; but the result is lost sight of in their calculation. If the addition of Standard Food to a fattening ration, during a period of sixty or ninety days, will yield a profit on the extra investment of from 100 to 200 per cent., it certainly can be afforded by the most careful and economical stock feeder. Profits even greater than these have been made under our personal observation, as well as by regular consumers of the Food, many of whose reports we have corroborating our experience.

The following table will simplify the above, and at the same time prove that it pays to feed Standard Food:

	Daily ration	Days fed	Pounds fed	Total gain	Value of gain	Total cost	Net profit
Ten head...	18 lbs.	60	10,800	.....	.....	\$43.20	.....
Ten head...	25 lbs.	60	15,000	1,800 lbs.	\$80.00	60.00	\$30.00
Ten head...	30 lbs.	60	18,000	3,085 lbs.	154.25	87.00	67.25

In the above table we have assumed that, at the commencement of the feeding period, the animals weigh 1,000 pounds

each, and that 18 pounds of mixed feed, properly proportioned, is a life-sustaining ration, the price of which is estimated at 40 cents per 100 pounds; also that the flesh gained is worth 5 cents per pound. In feeding the first ten head a maintenance ration, he not only fails to secure a profit, but actually loses \$43.20. In feeding the second lot 7 pounds per day in excess of a maintenance ration, a net gain of \$30.00 is secured, or 50 per cent. profit on his outlay; while in feeding the third lot 2 pounds of Standard Food per day, which has increased the appetite so as to consume 12 pounds of feed per day to each animal in excess of the life sustaining ration, he has secured a net gain of \$67.25, which is a profit of nearly 80 per cent. on the total outlay, or considerably more than 100 per cent. on the outlay of extra corn and Standard Food over lot number two; in other words, the feeder realizes 85 cents per hundred weight on all the feed fed to lot number three, against 60 cents for that which was fed to lot number two.

In this calculation we have taken no advantage of the increased digestion and assimilation, or the higher marketable value of the beef from feeding Standard Food, while in reality they are subjects for just as serious consideration.

The process of fattening stock is an expensive one, therefore the shorter that period can be made the more profit will be realized. The proper use of Standard Food will shorten the fattening period fully 25 percent, and at the same time produce more and better flesh and with less grain. Take, for instance, ten head of steers weighing 1,000 pounds each, and by feeding them in the ordinary way they are able to consume 25 pounds of mixed feed per day for a period of 100 days. In this time they would consume 25,000 pounds of feed, and we will assume that the gain is 3,000 pounds of flesh. Now let us take another ten head of equal weight and condition, and, by feeding a daily ration of Standard Food, they are able to consume 30 pounds of mixed feed per day each, for a period of 75 days, in which time the total consumption is 22,500 pounds, a saving in feed of 2,500 pounds over the other lot. Assuming that with both lots

the life sustaining ration is 18 pounds of mixed feed per day, the first lot has 7 pounds for the production of flesh, the lot fed the Standard Food consuming 12 pounds a day each in excess of the life sustaining ration, will make a proportionate gain of over 5 pounds per day, or 3,950 pounds of flesh in 75 days, which is 950 pounds more than is gained by the other lot in 100 days; the tabulated result is as follows:

	Daily ration	Time fed	Amount of feed consumed	Gain
Ten head.....	25 lbs. mixed feed.	100 days.	25,000 lbs.	3,000
Ten head.....	30 lbs. mixed feed.	75 days.	22,500 lbs.	3,950

As in our previous calculations, this does not include any advantage from the greater percentage of nutriment secured by the increased assimilation, nor the increased value per pound of the beef in the market, which are of too much importance to be overlooked.

INCREASED MARKET VALUE.

The final test of any method adopted in the fattening of stock is the price which the animals will command when placed upon the market. By looking over our market reports almost any day we will observe a difference of from one to two cents per pound in the prices paid. The following is copied from a report of the Chicago market of March 25, 1892, showing the grades offered and prices secured on that date:

Extra steers, 1,600 lbs.....	at \$5.15—\$82.40
Choice steers, 1,400 lbs..	at 4.60— 64.40
Good steers, 1,300 lbs.....	at 4.00— 52.00
Fair steers, 1,100 lbs.....	at 3.45— 37.95
Poor steers, 900 lbs.....	at 3.00— 27.00

No more convincing argument can be produced than is shown by a comparison of these prices; the difference between the prices paid for the best and poorest grades of these steers is \$55.40 per head, an amount equal to more than twice the full value of the inferior animals. This shows the difference between good and shiftless management, and proves that in the feeding of stock the more brains and skill employed in connection with a legitimate outlay the greater will be the returns. What counts

most on the market is weight and appearance; the glossy coat, the well-rounded flank and the ability to tip the beam at the highest notch, count for everything in the sharp competition of the general markets. Such animals not only command the highest prices, but secure an immediate sale.

How are these most desirable results to be secured? They are of themselves suggestive of the answer. Proper care and liberal feeding are the essentials. The farmer who will, in connection with good care and shelter, feed a regular ration of Standard Food, for the purpose of increasing the appetite, digestion and assimilation, and provide a feeding ration which will satisfy the increased appetite, is bound to secure the best results possible to be obtained.

To show more plainly the difference between ordinary and scientific feeding, let us take, for example, two lots of steers of ten head each. We will presume that one lot have always had good care and shelter, with plenty of wholesome food, and have been kept thrifty by a judicious choice of feed stuffs and an occasional use of Standard Food. When turned out to pasture at three years old, they should weigh one thousand pounds each. The other lot have been compelled to shift for themselves, and, while they have had just as good pasture in the summer time, they have had a straw stack for shelter during the winter; they have been neglected and underfed. A liberal estimate of their weight would be eight hundred pounds each. Give both the run of the pasture from that time until the middle of December, giving the first lot ten pounds of chopped corn per day from the first of September, and giving the second lot nothing excepting what they will pick up. The first lot should weigh, December 15th, twelve hundred pounds each, and the other lot would do well to weigh nine hundred and fifty pounds each. Then put the first lot in the feed yard and provide good sheds; feed them 18 pounds of ground corn, 5 pounds of bran, with 10 pounds of clover hay, and 5 pounds of well cured corn fodder per day. In addition to this ration give two pounds of Standard Food per day to the lot. This ration continued until the

first of April should produce a gain of four pounds per day each, or 400 pounds per head during this fattening period of about 100 days, at the end of which time they will weigh, say, 1600 pounds each.

Taking the other lot from the 15th of December, we will give them the run of the stalk fields until the first of February, with a daily feed of 25 pounds of corn in the ear. Then put them in the feed yard and give them 20 pounds of shelled corn per day, and what hay they want to eat until April 1st, when they will be better than the average if they weigh 1200 pounds each. Presuming this date to be the period for marketing both lots, the first one would sell readily at five cents per pound, while the other lot are well sold if they go at four cents per pound. The following table shows the result :

10 head of steers,	1,600 lbs. each,	at 5c per lb.,	\$800 00.
10 " " "	1,200 " " "	4c " "	480 00.

To pay for extra feed..... \$320 00.

This will doubtless furnish a pretty good argument in answer to the claims of some farmers who say that they cannot afford a liberal grain feed, or to use Standard Food.

DIRECTIONS FOR FEEDING STANDARD FOOD TO FATTENING STOCK.

For cattle during the fattening period, feed one pound of Standard Food to ten head, twice a day, with the grain feed, omitting its use one week in each month after the first month.

In feeding in stalls this can be attended to with little if any loss of time. If the feeding is done in the yard, it should be given with the grain feed in tight troughs; in this way it can be fed with ear corn, or any grain feed, without waste.

For hogs of average size, feed one pound to twenty head twice a day, increasing the amount in proportion to the size. Its use may be omitted one week in three, after the first month. It can be conveniently mixed with the swill or grain feed.

For sheep, feed one pound to thirty head once a day, with the grain feed, using the ordinary care, as directed in the feeding of other animals, to prevent waste; skipping one week in each month after the first month.

SPECIAL FEEDING FOR MILK.

It has been clearly demonstrated that we can take an ordinary cow of good constitution and form, and greatly improve both the quality and quantity of the milk by a special and regularly conducted system of care and improved feeding. If such a cow does not produce more than three thousand pounds of milk per year, she is, under ordinary circumstances, kept at a loss; but when well fed, and kept in good health and condition, she will yield at least six thousand pounds of good milk per year, and the cost of producing it will be but very little more than the production of three thousand pounds. This clearly demonstrates the economy of liberal feeding, and maintaining good health, as essential elements in increasing the productivity of the cow beyond the point at which profit begins.

To fully understand the advantages to be secured in this direction, it is important to know how milk is formed in the udder of the cow. Although the blood is its primary source, milk is not secreted directly from it, but is formed in the milk glands, from the cells of the gland itself. In fact, milk is nothing less than the liquefied organ. The milk gland is composed of a great number of small vesicles; these are made up of the simplest kind of cells lining a structureless membrane; this membrane doubled in folds forms numberless small sacks, all having a common outlet. These vesicles are covered by a very fine network of blood and lymph vessels which nourish them. Now, as milk itself is formed from the melting or liquefying of these small cells within the glandular tissues of the udder, it becomes a positive necessity for the continued flow of milk that new cells be rapidly formed. In cases where insufficient or improper food is supplied, these cells are formed from the reserved flesh of the body, and the animal becomes poor; also where the system is in a depleted condition from poor digestion and assimilation, producing an impoverished

condition of the blood, the formation of these cells is decreased in a corresponding degree.

A properly selected ration for cows is just as essential to the economical production of milk as is a properly adjusted portion for fattening animals. Certain kinds of feed stuffs are much more valuable as milk producers than others. Experience has taught that foods rich in protein or albuminous properties are best adapted to the peculiar needs of the milch cow. The following feeding standard is based on numerous experiments in feeding milch cows.

Feeding standard for milch cows per day and 1,000 pounds live weight:

	Lbs.
Digestible protein.....	2.5
Digestible fat.....	0.4
Digestible carbohydrates	12.5
	<hr/>
Total dry matter.....	24
Nutritive ratio.....	1:5.4

These quantities are the amounts which the animals would obtain from good pasture.

Suppose the dairy farmer wishes to feed his cows so as to give each the required amount of the various nutrients required by this table. By reference to the table of analysis of feeding stuffs given in the previous chapter, the amounts of the several nutrients contained in each article of feed which he proposes to use can easily be ascertained. Allowing his cows to weigh 1,000 pounds each, and 18 pounds of clover hay as the basis of their daily ration, he finds that, by adding to it 5 pounds of corn meal, 5 pounds of bran, 3 pounds of oat meal and 16 pounds of carrots, he has a full ration, and one in excess of the standard, as is shown by the following table:

	Total dry mat- ter	Protein	Carbohydrates	Fats
Eighteen pounds clover hay	14.66	1.2	6.79	.2
Five pounds corn meal.....	4	.3	3.00	.15
Five pounds bran (roller process).....	4.12	.63	2.20	.14
Three pounds oat meal.....	2.59	.29	1.44	.11
Sixteen pounds carrots.....	2.40	.22	2.00	.03
Totals.....	27.77	2.64	15.43	.63
Amount required by standard.....	24	2.50	12.5	.40

Although this ration is nearly four pounds larger in dry matter than is required by the standard for milch cows, yet the dairy farmer will find that his cows will fully digest and assimilate this amount when allowed a regular ration of Standard Food; for it increases the appetite so that this extra amount of food is demanded, all of which goes to the production of milk. This table is given merely to show how a ration may be prepared so as to conform, as nearly as practicable, with the amounts required by the feeding standard. Any articles of feed stuffs adapted to the needs of milch cows may be used, bearing in mind the important object of furnishing such articles as will supply the necessary amounts of the various nutrients. A fuller explanation of how to compound a proper ration will be found in the preceding chapter on flesh producing. The principle in this case is exactly the same.

Cows should be fed a certain amount of bulky food, in order that the stomach may be distended, a condition necessary to good digestion.

There must always be a variety of food in the milk ration, and the dairy farmer should study the nature of the feed stuffs he uses that he may produce the best results. The error too frequently committed by dairymen is in supplying a ration from one kind of fodder which can almost always be overcome by a little study of their resources.

Cows require a very large amount of water while in full

milk. Cows giving twenty pounds of milk per day may be considered to require nearly forty pounds more water than fattening cattle of the same weight. As water permeates every portion of the system of the cow, its purity is of the first consideration. So important is this, that the rule may be generally applied that no water is fit for a milch cow which is not fit also for man to drink. It should be bountifully supplied both in winter and summer; it should also be of easy access, and so guarded that they may drink unmolested.

Some of the most successful dairy farmers put a little bran or middlings and salt into the watering troughs to induce cows to drink often. It is an excellent practice, and one which will be repaid for all the extra trouble by the increase in milk.

In regard to profits in dairy farming, the cow is simply a machine for converting feed into milk to the same extent that an engine is a machine for producing power from fuel. If only enough fuel is supplied to keep the water warm, no power is generated; or, if the machine be defective, valuable power is lost. The boiler must have sufficient fuel to produce extra heat before any power is secured, and the various parts of the machine must be in good order to secure the best possible results. Just so with the milch cow. She must have feed sufficient, in quality and quantity, to more than maintain her existence, and her condition must be the best in order to secure the highest degree of her usefulness. In accomplishing this result, the organ of first importance is the stomach. It is here that the first change in this wonderful process commences. The peculiar value of Standard Food in strengthening the digestive organs and promoting the general health can not be overestimated by the practical dairy farmer. It will increase the appetite, stimulate the digestion, and produce thorough assimilation, thus securing rich, pure blood and vigorous health.

Standard Food does this by cleansing the stomach of any morbid accumulations which obstruct the action of the digestive organs. It then comes in contact with the coating of the stomach, and produces a healthy and copious flow of the gastric

juice. This fluid, acting directly upon the feed, dissolves and digests it, so that every available portion of the nutriment contained in the feed may be secured and utilized. Under these conditions, the entire body becomes more vigorous, and, by its increased demand for more nourishment, directly and naturally develops an increased appetite.

Any increase of the appetite, when accompanied by proper digestion and assimilation, is a source of direct profit; for all nutriment contained in the ration which is not consumed in maintaining the normal condition of the animal goes to the production of milk. Standard Food, therefore, not only returns a profit from an increased digestion and assimilation, but also from an increased consumption of feed.

There is a vast difference in the grades of cows, and in their abilities as producers of milk. This is due to a variety of causes, such as breeding, difference in feeding and general management. In a general way, cows may be divided into three classes with regard to their condition and profitableness—poor, fair and good.

To the first class belong such cows as are unprofitable as milkers. Usually the digestion is weak, and the assimilation is imperfect, being hindered by a disordered condition of the digestive organs; poor blood and a depleted condition of the general system are the results. Much of the nourishment contained in the feed is lost, and nearly all of the remaining nutriment is consumed in maintaining the existence of the animal, so that very little is left for the production of milk. The regular feeding of Standard Food corrects this unprofitable condition. It strengthens the digestive organs, causing a healthy flow of gastric juice, so that good digestion and thorough assimilation are secured. These conditions secure good blood, a strong natural appetite and the highest state of health; and the increase in both the quality and quantity of the milk, which is sure to follow, will gradually bring them up to their highest capacity.

To the second class belong those cows which yield a mod-

erate amount of milk even under ordinary circumstances. The common manner of feeding and management has failed to develop their full capacity; their digestion, while not poor, has been far from vigorous; they have not gotten all the nutriment out of the feed they have consumed, nor has it been properly assimilated.

The great mass of our dairy cows are yet of the common or native kind, properly belonging to this class, and are capable of great improvement in their lacteal qualities; much more so than most farmers are aware of:

The grade of these cows may be greatly raised, and a large percentage added to their ordinary yield in quality and quantity, and the consequent profit from them, by the use of Standard Food. Its proper use with good feed assists greatly in stimulating the digestion, promoting assimilation and increasing the appetite, so that more feed will be eaten, and at the same time more nutriment secured from the full amount consumed. This produces increased activity of the milky glands, by the great abundance of pure blood flowing to them, and, in consequence, a full and profitable yield.

To the last class belong those cows which are in generally good condition, and without special care or feeding yield a good flow of milk. The number of cows of this class is greatly in the minority, yet the actual value of a regular allowance of Standard Food is equally as profitable with them as with either of the other classes. It is fully adapted to their needs in securing thorough digestion and assimilation and in making rich, pure blood, thus securing increased activity of the milky glands to keep up the normal flow during the whole period of lactation. The period of the greatest productiveness of the cow is usually soon after calving, when the milky glands are most active, after which there is a natural tendency to decrease the amount. In keeping these glands continually active, through the agency of the stomach, in increased digestion and assimilation, and a full supply of rich, pure blood, this flow may be kept up to nearly the amount produced at the com-

mencement of the milking period. This can be done by a proper daily allowance of Standard Food, with a well-proportioned feed ration of sufficient amount to fully supply the demands of the animal.

Another and very important gain from the use of Standard Food on this class of cows is in increasing the appetite so that the animal is enabled to eat, digest and assimilate a larger amount of feed. This is easily explained. The cow must first be supported before she can produce any milk whatever. Careful experiments in many cases prove that it requires two-thirds of a full ration to keep a cow in fair condition—her food of support. Up to that point there is no profit from the expenditure. By increasing the ration, say one-third, a certain return in milk is secured, and by making another like increase double the amount of milk is secured. Thus with an increase in the feed of twenty-five per cent, a gain of one hundred per cent is secured.

To put the matter in another light, suppose the dairy farmer is feeding his cows 18 pounds of mixed feed and hay per day, which simply keeps them in condition, but produces no milk. If he increases the ration to 24 pounds per day, which fully supplies the appetite and is all they can digest and assimilate, he may secure 14 pounds of milk each per day. By feeding Standard Food it can be safely claimed that the appetite would be increased so that each cow would eat and thoroughly digest and assimilate 30 pounds per day, which would, in the same proportion, increase the milk to 28 pounds per day. In other words, 18 pounds of feed return nothing; 24 pounds of feed return 14 pounds of milk; 30 pounds of feed and 1-6 pound of Standard Food return 28 pounds of milk. This production of milk is based on the claim that from three to four pounds of nutritious feed in excess of the amount required for support will produce six quarts of milk. Thus, it will be seen that Standard Food, in increasing the appetite of milch cows, will add largely to their yield in excess of the additional expenditure.

A great many good cows are fed beyond their ability to digest and assimilate; as a consequence their systems become clogged and they lose their usefulness as profitable milkers. These are known in many districts as over-mealed or "burnt out" cows. These cows have simply been overworked as milk producers, and the lacteal functions have become actually worn out, so that the nourishment consumed goes to the production of flesh rather than milk. The action of Standard Food is most effective in regulating this derangement. By producing an abundance of rich, pure blood it invigorates and builds up the entire system, and restores every organ to its normal condition and usefulness. Standard Food has been tested in so many cases of this kind that its use is recommended without hesitancy to regulate this condition.

It must be borne in mind that in using Standard Food nature is assisted in every instance and not forced in any. It supplies the lack of what nature would furnish to the cow in her natural condition. The dairy cow of today is a creature of circumstances, and too many of us fail to realize that constant high feeding on unchanging diet does not always furnish them with all that nature requires.

Cows in calf may be fed Standard Food with the utmost safety, as it strengthens the generative organs, and, barring accidents, prevents abortion, and insures easy parturition.

The dairy farmer should remember that all healthy increase in milk production is gradual: The first effect from the feeding of Standard Food is the regulation and improvement of the condition. This often requires considerable time, and no extra flow of milk can be expected until it is accomplished.

GUARANTEE.

In using Standard Horse and Cattle Food according to our directions on milch cows, we guarantee value received in every instance, in the increase of the quantity and quality of the milk and in the general health and condition of the animal.

Our regular agents, and all parties selling Standard Food,

are authorized to give this guarantee, which will be honored by this company, in any case where it can be fairly shown that the results secured are not equal to our representations.

THE F. E. SANBORN COMPANY,
Omaha, Nebraska.

HOW STANDARD FOOD SHOULD BE FED.

Feed one pound to twelve head twice a day, mixed with the grain feed. Omit its use one week in each month after the first month. The object of allowing this intermission in the use of Standard Food is to furnish that change to the system which is necessary in the feeding of any nourishing substances.

One of our directions, which must never be overlooked, is to furnish an abundant supply of pure water, as the larger the production of milk the more water is required.

CARE AND MANAGEMENT OF HORSES.

CONTAGIOUS AND BLOOD DISEASES.

LOSS FROM—PREVENTABLE—BLEEDING—INFLUENZA—EPIZOOTIC
—CATARRH—PINKEYE—STRANGLES—DISTEMPER—FARCY
—GLANDERS—RHEUMATISM—HUMORS OF THE BLOOD.

These are among the most important of all the diseases to which horses and, in fact, all farm animals are subject, being the most destructive, and, at the same time, preventable by strict care and a rigid following of the common sense laws of health.

The experience by which so many of our farmers and stock owners have suffered proves the appalling losses from its devastation, and authentic records show that thousands and thousands of animals are annually lost from the terrible ravages of these diseases. To detail the losses from them to any extent would be a difficult task. Suffice it to say that in the year 1872, alone, the investments of millions of dollars were swept away in the horses that were attacked in almost every part of the United States, and, from the effects of it, every horse owner dreads the possibility of its return.

PREVENTABLE.—It is proven beyond question, by practical experience, that contagious diseases in animals are preventable with certainty by the proper application of sanitary laws and sensible measures of prevention.

Clean, airy, wholesome surroundings go a long way toward hindering the progress of disease; and good blood, good digestion, strength and vigor of body and of the whole system and its vital organs, assisted by these measures that are all important, give no chance for disease to secure a foothold; for it has nothing to work upon; it has nothing to assist it. While an animal is in this virtually perfect physical condition, with the advantage of these favorable surroundings, it is next to impossible for

it to take disease, unless through its germ by direct contact with it, and, even then, it can only be of the mildest type, and, unless of a necessarily fatal character, like glanders, easily handled and easily cured.

It can be readily seen that the animal system is overcome by any contagious disease in proportion to its debility and its feeble powers of resistance. The system, therefore, which is weak from living in impure air, damp buildings, darkness, on poor or deficient food, foul water, from over work, from long standing or debilitating disease, etc., is more ready to succumb to the attack of contagion than one in the strength of the most vigorous health. Hence it is that all that contributes to robust health contributes to insurance against contagious disease.

The use of tonics, of health-giving and strengthening food, that build up and fortify the whole system, is based on their tendency to produce a more vigorous health, for they assist, with good hygiene, in warding off infection. What an important subject, then, for the serious consideration of every stock owner who knows the grave results of neglect to keep the health of his stock in the most vigorous condition. The thorough and systematic use of Standard Horse and Cattle Food has proven that, as a preventive of contagious diseases, it is a success and positive in its results, and that in the hands of any practical horseman it will never fail to give every result that could be expected.

BLEEDING.—This is one of the methods for the treatment of disease that is certainly unwarrantable, and is a practice that should never be resorted to, however much it may be doubted by the adherents of an exploded theory. It is a disgrace to humanity, and an outrage on the privileges of the noble and useful animals on whom we are so much dependent. A moral responsibility rests upon every man to see that their natural claims are respected, and that, when sick or dying, they should be treated with mercy. Medicines and forms of treatment will be presented in these pages that, if followed, will insure greater success in treating these and other diseases, without in any way

impairing the powers of the animal's constitution that are all needed to combat with disease.

INFLUENZA — EPIZOOTIC-CATARRH.—This is a disease of an epizootic fever type that is of frequent occurrence, usually in the spring and fall of the year, always accompanied by great weakness or debility. Indeed, it is very rare that we see a cold run its course, as such, without some complication of one kind or another.

In stables that are badly ventilated, or overcrowded, the malady is apt to make serious havoc, unless prompt measures are adopted to control it.

Nothing can be definitely stated as to the primary cause of its development, but it can be safely asserted that its furtherance is assisted by impure air, poor and scanty food, debility and general neglect, that any one ought to know are most alluring to disease, and apt to cause disease by their own influence.

SYMPTOMS—The disease comes on suddenly with extreme weakness and stupor, succeeded by a chill or shivering, then increased heat, with irritation and fever. There is loss of appetite, cough and a discharge of mucus from the nose, watering of the eyes, all followed in a day or two with swelling of the legs, and, in severe cases, of the belly and breast; harsh blowing sounds are heard in the chest, and the membrane of the nose is pink or lead color. The limbs are alternately cold and hot and the hair rough.

TREATMENT—Do not carry the mistaken idea that a horse suffering from this disease does not need the best care that can be given. It is not only due him, but is a material saving to the owner; furthermore, without proper care the disease is more than likely to assume a complicated form, when treatment would do but little good; or it may leave him in a condition from which he will be a long time in recovering, or perhaps never will; so, all around, the best care that can be given is none too good.

Place the horse in good shelter, where he can get pure air, and cover him according to the condition of the temperature; if the weather is cold, blanket well and bandage the legs.

If there are symptoms of high fever give him twenty drops of the tincture of aconite root in a little cold water, every four hours, till five doses are given, to reduce the fever. Prepare a light feed of bran mash or soft feed and mix with it two measures of Standard Food, and give three times a day. Place fresh cold water before him and allow him to drink as much as he wants. No other treatment, except the regular use of this Food, and seeing to his general comfort, will then be necessary. Increase the grain feed as his appetite calls for it, and when well improved decrease the Standard Food to one measure at each meal. Do not apply blisters or any such thing to the throat, as is too often done, as they can do no good.

Nothing will result better than the regular use of the Food, as it will keep the bowels in good order, coax the appetite, and, most of all, keep up the strength of the horse. Be sure the animal is entirely well and in full strength before putting to work again. If treated as described, in from six to ten days he will be almost well.

Thousands of horses have been thus cured with this Food, many of them under our personal notice, and in no case have we ever had it fail to bring the animal out in good condition. From our experience we know that in such cases, when its use is begun at once, and our instructions are followed, it will do just as we claim, which we are willing to guarantee to all horsemen.

PINKEYE.—This is a name that has, of late years, been applied very generally to a peculiar form of disease, of epizootic nature, among horses. It is quite prevalent during the spring and fall seasons, attacking nearly all the horses in a community with greater or less severity, seemingly from one common cause.

SYMPTOMS.—Are very much the same as those of influenza just described, except that the breathing and respiratory organs are seldom affected. There is dullness and stupor, with loss of appetite; the coat is rough and staring and there is some cough,

with discharge from the nose. The eyes are watery and have a peculiar pink color.

TREATMENT—Provide sufficient shelter and covering to keep the horse warm, and see that he gets pure air and all the fresh cold water he wants to drink, offered to him every three or four hours. Give Standard Food regularly, as directed for influenza, mixed with light feeds of bran mash, or soft feed, three times a day, and in a week he will be all right again.

STRANGLES—DISTEMPER.—A specific fever of young horses, usually accompanied with swellings and formation of matter between the bones of the lower jaw, though often seen on the sides of the face and elsewhere. It is caused by change from field to stable, from idleness to hard work, and change of location and climate. We are also informed that it is caused by a specific poison in the blood that but few horses escape. Exposure to cold and wet, and to impure air, contribute to hasten its development, while contagion is a common cause.

SYMPTOMS—The disease is often preceded by a period of unthriftiness, staring coat and loss of condition. This will be followed by a cough, watery flow from nose and eyes, quickened breathing and pulse, costiveness, scanty and high colored urine, fever and thirst; then a swelling appears, usually between the bones of the lower jaw, that is hot and tender to the touch. Water is often returned from the nose in drinking and food dropped after chewing.

TREATMENT—Sustain the strength of the horse by an abundance of soft, nourishing food and pure air. Give twenty drops of the tincture of aconite root every four hours, in a little cold water, till five doses are given. Use Standard Food as directed for influenza, and the disease will very likely be over in ten days. The secret in treating this disease, the same as others of similar nature, is to keep up the strength and appetite of the horse. Therefore any extras that can be furnished, in the way of bran mashes, boiled oats, or other tempting food, or even hay tea or gruel in extreme debility, is of great benefit. Hence,

it is easily seen in this connection the assistance which is rendered by the use of Standard Food.

If the swelling between the jaws is bad, it is a good plan to poultice it with flax-seed meal, by means of a square piece of cloth, with holes for the ears and eyes, tied down the middle of the face, which will hold the poultice in place. Steaming the nostrils is also good, and may be done by feeding hot bran mashes from a nose bag hung on the head.

The bowels will be kept in good order and the blood active by feeding Standard Food, thus avoiding any complications of the disease; and, if the animal has otherwise general good care, its full recovery in a short time is assured.

FARCY.—Most authors who are recognized as authority state distinctly that farcy is a variety of glanders, but in our experience with this disease we are obliged to recognize the sound arguments and principles of Dr. McClure, that farcy is a disease of scrofulous nature and is produced by a fermentation of the blood. For instance, if the liver, kidneys and bowels of a horse are not performing their proper functions, the worn out or effete matter is not carried from the blood or body through the usual channels. This effete matter decays and becomes an active ferment in the blood and fluids of the body.

SYMPTOMS—The coat is rough; one leg, usually the fore leg, will swell to a very large size, hot and painful, and in a day or two it will break out in small, running ulcers, discharging a watery fluid, though frequently thick and of a resinous color. Soft, puffy swellings are usually seen about the mouth, lips and, indeed, on many parts of the body. After a few weeks the condition of the animal becomes much changed for the worse; the blood becomes so deteriorated that the animal's vitality is soon exhausted. Overcrowding, with little or no ventilation, and debility, from neglected or long-standing diseases, are common causes. It is also produced by inoculation from the virus of glandered or farcied horses.

TREATMENT—Having explained the cause and nature of the disease, the kind of treatment is plain. Destroy the ferment

and purify the blood to stop the effect. Give a tablespoonful of sulphite of soda at a dose, twice a day, for about ten days, then three times a week thereafter, for a few weeks; this will destroy the fermentation. While the blood is thus being regulated, it will be necessary to add to it, also, and in every way assist the powers of the constitution to overcome the disease. Feed two measures of Standard Food three times a day in good rich feed; for this purpose nothing can be better, for by this means the power and strength of the body is kept up as well, and a cure can be depended on with more certainty. Remove the horse, with all his blankets and articles used in feeding, etc., to a comfortable place and remote from well animals, as this is considered one of the contagious diseases of the horse.

GLANDERS.—This is essentially a disease of an ulcerative character. Horses affected with chronic glanders will live and work for years, but the disease during this time is as contagious to other horses, as well as to man, as though existing in the most aggravated form. The causes of this disease are many, among which are starvation, filth, neglect and debilitating diseases, as strangles, epizootic catarrh, lung fever, or indeed any disease that is neglected or capable of forming pus.

SYMPTOMS—Languor, dry staring coat, impaired appetite, quick pulse and breathing, ulceration of the lining membrane of the nose, accompanied by a discharge of pus of a greenish color that dries rapidly when spread over the nostrils, and which sinks when placed in water. Soon the nasal flow becomes yellow and sticky and upon the mucous membrane may be seen deep ulcers of irregular form, with little or no tendency to heal. There is one symptom that nearly always accompanies this disease and that is the enlargement of the gland under the jaw. Another frequent symptom is the painful dropsical swelling of the limbs and joints. A rational understanding of the nature of this disease explains the reason why a cold in horses terminates in glanders; it is the absorption of the pus.

TREATMENT—It is very evident, from the results that have

been produced in the various forms of treatment, that there is no specific known for the treatment of this disease. In fact, most of our educated veterinarians contend that it is incurable. Therefore it is very probable that the best and most humane course to be pursued is to destroy the animal as soon as the disease is manifested and bury it deeply in the earth.

PREVENTION—When the causes of this disease, which produces such frightful havoc, are taken into consideration, it is right and sensible to assert that much may be done in the way of prevention; for it is highly probable that more than one-half of the cases of glanders, from year to year, are produced by allowing the simpler forms of disease to take their own course. Coughs and colds are neglected, distempers are left to cure themselves, and other diseases, that affect the blood and vital powers, are left to be their own doctors, and a disease that is incurable, and upon which it has been found necessary to legislate, is the result. Is this right? It is evident that the punishment inflicted by the unerring law of nature proves that it is not. An empty granary or a depleted pocket-book offers no excuse for the neglect of stock, even in the simplest afflictions, and the natural law demanding their comfort and relief no man has any moral right to evade.

RHEUMATISM—In the acute form of this disease there is extreme pain in the legs and joints, accompanied by fever, irritation and excitement, and, on account of the severe pain the horse seems to dread to move from one position to another. He sweats profusely, but has no fever in the feet, by the absence of which it can be distinguished from founder. An observance of this may be of assistance in forming a correct opinion of the case.

One of the most frequent causes is from placing horses, heated from exertion, where they are exposed to a draught of cold air and suddenly checking the perspiration. The secretion is absorbed by the blood and acts as a poison, producing inflammation.

TREATMENT—Put the horse in a comfortable, airy place,

with plenty of bedding under him, to induce him to lie down. Give twenty-five drops of the tincture of aconite root every four hours, till six doses are given. See that the animal is comfortably blanketed and give general good care. Give well prepared rations of soft feed and oats, containing one to two measures of Standard Food, morning, noon and night. This will be of great benefit in regulating the condition of the blood. By the time the six doses of aconite have been given, the fever will have been greatly reduced and the general condition much changed for the better; but the use of the Food should be continued for several weeks until the blood is thoroughly regulated.

CHRONIC RHEUMATISM—This is usually the sequel of the acute form of this disease, but unlike it, is relieved by counter irritation and exercise. There is no doubt but many of the cases of hidden lameness in horses are caused by chronic rheumatism.

TREATMENT—Give five twenty-drop doses of the tincture of aconite root four hours apart; also give thirty-drop doses of the powdered meadow saffron seeds twice in the day. In the place of this, a few doses of nitrate of potash may be given in the water, so divided that one ounce will be given in a day. Standard Stock Liniment, applied twice a day, will relieve the pain and soreness in the limbs, and is the best external remedy that we have ever used. Use the Standard Food regularly, as directed for the acute form, to regulate the blood, bowels and appetite. Feed generously and give general good care.

HUMORS OF THE BLOOD—An impure and disordered condition of the blood, that affects the general health, is very much more frequent among horses than is generally supposed. Indeed, most owners may believe that the blood of their horses is in good condition until their attention is called to it, perhaps, by eruptions of the skin, sores, a bad coat, or other symptoms equally as convincing. And it is not to be wondered at; for, with the changes of climate, exposure to heat and cold, hard labor, high feeding on corn, with little change, and oftentimes

neglect, it is enough to not only pollute the condition of the blood, but to wear out a machine made of steel, of equal, or even greater, powers.

Stand a tired horse, wet with perspiration, where a draught of cold air will reach him, feed him on corn, all that his naturally strong digestive organs can assimilate, to give him bodily strength for hard labor; then subject him, in the collar, to a scorching sun, and very soon again to a cold winter's wind and storms, and what is the result? If nothing else, then certainly a disordered and impure condition of the blood. Therefore, something is needed occasionally to strengthen and purify and regulate it, to expel the accumulated impurities that have been absorbed. In our experience of many years in the practical care and treatment of horses, we have found nothing so practical, economical, or so highly satisfactory, as Standard Food, and for this use its value is praised by many beside ourselves.

DISEASES OF THE RESPIRATORY ORGANS,

PREVALENCE—TREATMENT—COLD—COUGHS—SORE THROAT—
BRONCHITIS—NASAL GLEET—HEAVES—PLEURISY—CON-
GESTION OF THE LUNGS—PNEUMONIA—LUNG FEVER.

In almost all domestic animals, these are of first importance, on account of their frequency and the serious consequences they entail. In young horses, especially, they are very common, and probably more destructive than any other class of disease. They may be safely classed as one of the evils of domestication.

Frequently the assertion is heard, coming from some horse-man, who is generally credited with dispensing broad gauge ideas, that if his horses take cold and have a fever, or even are more seriously afflicted, that he does nothing for them, for they will get well as quickly without his assistance as though he were all the time poking medicine down them. In some cases this may be so, particularly if the right treatment is not used; but he does not realize that he has taken the horse out of his natural position, and subjected him to a form of usage and mode of life that is contrary to his nature, and which very things have produced disease that he leaves to true nature to cure. Were it not for the natural power of self-restoration that is possessed by all animal creation, such a man would recognize the teachings of dear experience. We will agree with him that strong medicines have done more harm than good, and are seldom needed; but he must agree with us, even though a portion of his experience, under the most favorable circumstances, may give him some right to his claim, that, in the care of his stock when they do get sick, because the law of nature has been violated by him, they need such relief and medical care from him to overcome disease as will compensate for their deprivation of the great assistance of nature; not to force but to assist in their restoration to health.

COLD.—No disease is more common among young horses; but, unfortunately, it rarely runs its course as such.

SYMPTOMS—A slight cough, fever, and more or less discharge from one or both nostrils, thin and watery or, perhaps, a thick pus. The lining membrane of the nose is red and inflamed. Cold sometimes extends into the throat and lungs; when it spreads to the chest it is called bronchitis.

TREATMENT—Keep the appetite good and the bowels in good order by feeding one to two measures of Standard Food at each meal. Give nutritious feed in generous quantities, but not enough to bring on indigestion. Keep the horse comfortable and in a warm, airy place. Continue the use of the Food until entirely well, and this will be found a simple and successful plan of treating common cold.

COUGHS.—A symptom of disease of the respiratory organs, as tubercles of the lungs, thickening of the lining membrane of the windpipe and enlargement of the glands of the neck. It also occurs from a diseased condition of the liver or from indigestion. Coughs that are of long standing are, in many cases, almost incurable, but more recent cases can usually be treated with good success.

TREATMENT—The best that we have found in years of experience is the regular use of Standard Food, fed with the grain, one to two measures at each feed. It will help the worst cases, and, if not of a nature caused from enlargement of the glands, it can be relied upon to cure. In severe cases, drop a little oil of tar—half a teaspoonful—on the tongue every day, then give some grain so it will be swallowed. Another good thing is to sprinkle a handful of unground flax-seed in the feed every night. Feed generously and give occasional drinks of flax-seed tea.

SORE THROAT—**SYMPTOMS**—The nose is raised, the head being carried stiffly and more in a line with the neck than usual. There is swelling of the throat, and usually a cough and discharge from the nose. In chronic sore throat, there may appear to be general good health, but a cough comes on in par-

oxysms when the horse comes into the cold air, drinks cold water, eats dry oats or musty hay, or is subjected to violent exertion.

TREATMENT—Rest in a clean, dry, airy stable. Clothe comfortably and flannel bandage the legs. Tie a rug or blanket closely around the neck and steam the nostrils as for strangles. If the fever is high, give twenty drops of the tincture of aconite root, and repeat twice, four hours apart. Feed the Standard Food as directed for influenza and give general good care. The horse may be given drinks of flax seed tea twice a day with the best results.

BRONCHITIS—This is a very common disease among horses, and is confounded by many horse doctors with inflammation of the lungs, distempers and colds, from which it is distinguishable in various ways.

SYMPTOMS—A chill, fever, harsh cough, which in a short time becomes soft and rattling; loss of appetite, heaving of the flanks, mouth hot and dry and a discharge from the nose.

TREATMENT—The first steps should be to make the horse comfortable, and reduce the fever. Give fifteen to twenty drops of the tincture of aconite root every four hours, till six doses are given. Give plenty of cold water to drink, and occasionally a little flax seed tea or gruel. Give bran mash or boiled oats in small feeds and mix well with them one to two measures of Standard Horse and Cattle Food. This will gently relax the bowels and cool the stomach, also prevent debility and depression. Continue its use and give special care until entirely well. In the chronic form of this disease, Standard Food will be found equally valuable. In connection with its use the following ointment may be applied, well rubbed in, down the course of the windpipe, once a week: Lard, one ounce; red iodide of mercury, one drachm; mix. This will cause whatever thickening there may be to be absorbed. Lard or oil may be applied once a day where the ointment was applied, to keep the skin from cracking.

NASAL GLEET—This is a result, usually, of catarrh and cold in old and debilitated horses, and is shown by a thin, watery discharge from the nose. The case may be classed as one of simple gleet, if there are no ulcers on the lining membrane of the nose, or no enlargement of the gland under the jaw and can readily be cured by care and good treatment.

TREATMENT—See that the horse is well sheltered and allow a term of good feeding. Mix one measure of Standard Food with the feed at each meal. This will give the horse strength and vitality, and that is what is needed to cure the disease. Continue the use of the Food until the horse is entirely well.

HEAVES.—This is a disease that is much the same as asthma and may be defined as a difficulty in breathing. Some horses are so seriously affected with this disease as to be made almost unfit for use. In others it is so slight that it can only be observed by a peculiar hitch or double beat of the flank, different from any other form of breathing. It is caused by over-feeding on clover hay, chaff, cut straw or any bulky and innutritious food.

TREATMENT—Give five grain doses of arsenic once a day, for two weeks, then skip a week and commence as before. This will cure many cases. Use but little hay or any feed of large bulk. Improve the general condition of the horse as much as possible. This can be done by the regular use of Standard Food, three measures a day with the grain feed; besides, it is exceedingly good of itself in allaying the disease. A teaspoonful of oil of tar may be given every day, by placing it on the tongue, with excellent results.

The following is a good receipt for haves and has produced remarkable results in many cases:

2 ounces powdered lobelia seed

4 ounces linseed meal.

$\frac{1}{2}$ ounce black antimony.

Mix: divide into twelve doses, and give one night and morning. When used up wait a week and repeat.

PLEURISY.—Inflammation of the membrane covering the lungs and lining the cavity of the chest.

SYMPTOMS—The breathing is deep; not so short and quick as in inflammation of the lungs; there is a chill succeeded by fever; there is a disinclination to turn short. Usually the pain will subside in twenty-four hours after the attack, and the horse will appear better.

TREATMENT—Treat the horse as for inflammation of the lungs, by giving him pure air, cold water and aconite. This is to be given in twenty-drop doses, four hours apart, till six doses have been given.

To remove the fluids from the body after the disease has passed its active form, allow good feeding and a generous diet. In this connection Standard Food is always of great value.

CONGESTION OF THE LUNGS.—SYMPTOMS—The horse blows; he is heaving at the flanks, with the nostrils dilated, and, in a general way, shows symptoms of distress, and is very stupid.

TREATMENT—Clothe the body and bandage the legs. Allow plenty of fresh air and give the following mixture: sweet spirits of nitre, half an ounce; powdered carbonate of ammonia, half an ounce. Mix in a small quantity of gruel in the form of a drink.

An excellent form of treatment, when it can be had, is to wrap the entire body in rugs, wrung out of hot water, and covered thickly with dry ones, the limbs being actively rubbed at the same time.

PNEUMONIA — LUNG FEVER.—This is an inflammation of the substance of the lungs, and is sometimes very common in the spring after a hard winter.

So far as the direct or indirect causes of this disease are concerned, we may safely infer that crowding, and a bad system of ventilation include them all; yet, it is often caused in horses by hard and laborious work, or from a long drive facing a cold wind after being taken from a warm stable.

SYMPTOMS—A chill, followed by a fever that is high for a time, and is succeeded by cold legs and ears, quickened breath-

ing and pulse and dilated nostrils. The muscles of the side and breast will be seen to quiver in inflammation of the lungs, and will seldom deceive. The animal will eat nothing, and persistently stands with his nose in the manger, and, if taken out of the stall into the open air, a relief is secured from the fresh air so that he will almost refuse to go back into the stable again. This shows the necessity of pure air in all lung diseases.

TREATMENT—Place the horse in a light and airy place that is comfortable, and clothe according to the weather. Bandage the legs well to keep them warm. Aconite, judiciously given, is a great remedy in treating this disease. It should be given in twenty-five drop doses in a little water, four hours apart, till six doses have been given. Allow the horse to have plenty of cold water to drink. He should have one ounce of chlorate of potash every twelve hours until signs of improvement are shown, when it may be discontinued. This may be given in a few quarts of linseed tea. Give nourishing food and mix with each feed two measures of Standard Food. This will keep up the strength and appetite of the horse. Continue feeding in this amount until the animal is well improved, then feed one measure at each feed until entirely well.

We would caution our readers not to place too much reliance in strong medicines for the cure of disease. The physician does much good when he practices rationally; recognizes himself as the servant of nature; does her bidding and does no harm in the use of poisons and meddlesome medication. In the treatment of most forms of curable disease, what is needed is great patience, faith in nature, and a strong reliance in such remedial agents as will assist nature to restore health, not to force it. Hence the value, in working according to the requirements of nature—to assist and not to force—of Standard Horse and Cattle Food.

DISEASES OF THE DIGESTIVE ORGANS.

THE RESULTS OF BAD FEEDING—DIET—LOSS OF APPETITE—
INDIGESTION—CONSTIPATION—LAXATIVES—DIARRHŒA—
HIDE-BOUND—DEBILITY—DROPSY—WORMS—BOTS
—COLIC—INFLAMMATION OF THE BOWELS—
DISEASES OF THE LIVER—LAMPAS.

It is probably the experience of most farmers and stock owners that a great proportion of the diseases occurring among live stock are produced, either directly or indirectly, by errors in diet, or general care, that bring on a disordered and diseased condition of the organs of digestion. Such a fact is admitted by veterinarians, indeed to a greater extent than is generally conceded by those who have not made the subject a particular study.

More horses may be seen in a broken down condition from the effects of this class of disease than any other. They are so poor that their hide seems only to cover a lot of bones; they have no life, no vitality or ambition, and are sorry specimens indeed by the side of the well groomed, well fed animals that are not the subjects of the kind of care that forces such conditions. And the shame is in the fact that such a condition is avoidable by proper care and attention in the feed of the animals, and in their natural wants in sickness or in health.

DIET—No single article of diet, let it be ever so rich in the elements that form tissues and support life, can be used for any length of time with success. The natural desire in ourselves for something else, after being confined to any particular article of diet, proves to us that in order to be successful in preserving the health of our live stock we must vary the diet. The stomach must be made to labor hard at times, or its functions will deteriorate. It must be made to work for a living once in a while. Labor operates on the stomach in the same manner

that it does on the brain and muscle—increases their capacity. We may, therefore, distend the horse's stomach at times and not continually burden it with meal, chopped feed and concentrated food.

It must be borne in mind, too, that the various functions of the body need rest; for, should a horse be permitted to stand up to a full crib for hours at a time, disease of one kind or another is sure to occur. On the other hand, let him be deprived of what is actually necessary to keep up the strength and vitality, and he soon becomes poor and debilitated, and an excellent subject for disease. As a matter of fact, the art of feeding, of choosing diet and allowing it judiciously, to secure the best results, may be brought down to a point of great nicety.

LOSS OF APPETITE.—This is more of a symptom than a disease, and is due to some derangement of the system. In cold, influenza and fever, the appetite is bad and with their removal it will be restored. When it is caused by a disordered digestion, what is needed is good care and good feed. The use of Standard Food, three measures a day, will regulate the digestive organs to a nicety, and bring the horse to his feed again in a very few days, so that he will not only relish it, but it will be thoroughly assimilated.

INDIGESTION.—From various causes the horse is liable to this condition, which not only proves very inconvenient, but after existing some time usually leads to the establishment of incurable diseases. It is frequently caused in old horses by diseased teeth; but outside of this cause, in horses of any age, it may be laid to improper or irregular feeding, or to the practice which some persons ignorantly follow of constantly dosing the horse with mineral condition powders, poisons and all such remedies.

SYMPTOMS.—The condition is at first shown by an uncertain and irregular appetite, and, as the disease advances, good food is refused and the horse seems to have a desire to eat his bedding and rubbish generally; he licks the walls, etc., and seems to have a great desire for filthy water. There is a general want

of condition; the skin is tight, and the bowels are irregular. Many more horses are troubled with indigestion than is generally supposed, and particularly in cities where they are stall fed continually.

TREATMENT—If the teeth are affected, secure the services of a competent veterinary dentist to look after them at once; and, if they are in good condition to properly masticate the food, good care and good feed with grooming and the regular use of Standard Food will effect a complete cure. The Food should be used one to two measures at each feed, according to the condition of the horse, and roots, vegetables and even fruits should be provided, while a moderate amount of daily exercise is highly necessary.

Standard Food has been used in innumerable cases of this kind, all degrees of severity of which are seen in different horses, and its results have actually been wonderful.

CONSTIPATION—Inaction of the bowels, caused by natural torpidity or want of activity, debility or weakness, serious and latent diseases, etc. In those animals naturally prone to constipation, nothing is required beyond an occasional bran mash, the use of linseed or a mild laxative only, and as long as bodily health is maintained, all remedies of a strong medicinal character are not recommended. When debility or disease is the cause, Standard Food, fed in the proper amounts to act as a mild laxative, will produce every result that will be required. As a symptom of other diseases constipation must be dealt with accordingly.

LAXATIVES—In many cases, and especially in those with marked constipation or bowels loaded with indigestible material, a laxative is beneficial. For the horse, aloes in three to five drachm doses, or, often better, sulphate of soda in one to one and one-half pound doses, will usually remove an irritant, cool the general system and produce speedy relief. Where a mild laxative is needed to cleanse the system, Standard Food fed liberally is, without doubt, the most satisfactory of anything that can be used.

DIARRHŒA—This is nature's plan for ridding the bowels of any irritant or obnoxious substance, and consists of a looseness or increased action of the bowels. It is, therefore, not an independent disease, but a symptom of some derangement. When this condition is present, and no pain, griping or pawing, as in colic, it needs no special treatment, more than general good care and good diet. Continued diarrhœa, however, needs attention, as it shows that the irritation that has produced it does not pass away.

TREATMENT—Give twenty drops of the tincture of aconite root in a little cold water; then give the following powder every two hours until the animal is better: Prepared chalk, half an ounce; catechu in powder, one drachm; opium in powder, ten grains. Allow plenty of cold water to drink as it will help to allay irritation. Bran mashes should be given for a few days to overcome the effects of the binding medicine. The Standard Food will be an excellent assistant in this particular; in fact, there is no stage of diarrhœa in which it cannot be used to the best advantage.

HIDE-BOUND.—This is a condition that is produced by debility, indigestion or a general "out of sorts." It is not a disease, but is the result of derangement, brought on generally by poor feed, overwork and lack of proper care.

TREATMENT—Give the horse a good variety of grain feed in generous quantities, and cut hay daily, wet with salt water. Frequent feeds of bran are good on account of its bulk. Give Standard Food at each meal, one to two measures, according to condition, mixed with the grain. If the horse is cared for in this way, we will guarantee that he will regain his good condition in a very few weeks.

DEBILITY.—This is a condition that is in too many cases the result of ignorance and neglect, and accompanies many diseases. On this account it is very essential to discountenance any form of treatment, even in diseases of an exalted character, that will reduce the strength. The animal thus affected becomes weak and debilitated, giving an access so free to disease that the

system in its weakness is unable to rally its strength and fatal results often follow.

The majority of cases arise from neglect and poor treatment in sickness, such as purging and the inhuman practice of bleeding. The want of knowledge, or the lack of care on these points, has killed more horses and made more crow-baits than anyone could be made to believe. Valuable horses have been neglected and maltreated either by the hand of a careless owner or in the care of some horse doctor, whose ignorance, or bad judgment, is no excuse for him, until this shameful condition has been the result, that has either terminated in the animal's death, or left him an actual disgrace to his owner. For such results are surely avoidable with good care and proper treatment. Remedies that may seem simple in themselves, but if they perform that essential task—maintain the strength and work in unison with nature—are all that are needed.

SYMPTOMS—The horse is very weak and sometimes staggers as he walks. There is disturbed breathing and many other indications, to a general observer, that show weakness and depletion of the whole system. Of course there is almost every stage of this condition, from the horse that has lost but little of his strength and vitality to the one that is so weak and debilitated that he can scarcely walk.

TREATMENT—Give plenty of good feed and the best of care to the maltreated beast, and allow him every comfort that his condition demands. Feed Standard Food regularly, one to two measures at each meal, according to the animal's condition. This will give him strength and appetite, regulate the digestion and make good blood, and that is what is needed. Continue this treatment until the horse has been restored to good condition, and see that he is strong and well before putting to work again.

In cases of this kind the value of Standard Food cannot be too highly estimated. The results are always of the best and have been praised in cases innumerable, while it has saved the life of many a valuable animal.

DROPSY.—This is rather the result of disease than the disease itself, and means an unnatural accumulation of water in the cavities of the chest, belly, breast and tissues of the legs. It depends generally upon a debilitated condition, the result of other weakening diseases and starvation, or is the result of bleeding, blistering and physicing.

TREATMENT—Rest and blood-making food are demanded. Feed corn-meal mixed with bran and cut hay, give frequent feeds of steamed oats mixed with bran. In fact, tempt the appetite with whatever nourishing food the animal will eat. Give the following medicine three times a day, mixed in the feed: Powdered sulphate of iron, one drachm; Spanish fly, two grains. Feed the Standard Food regularly, beginning with one measure at each meal, and as soon as the appetite has increased, double the amount.

Water in the chest is removed by introducing an instrument called a trocar, but when an operation of this kind has to be performed, unless the attendant has some knowledge of it, it is necessary to seek the services of a veterinarian.

WORMS.—There are various forms of parasites that infest the alimentary canal of the horse; but really, they are not as injurious at all times as some writers claim them to be. They are rarely, if ever, found in the intestines of healthy animals, and their presence is generally due to a deranged condition of the digestive organs.

Among the different forms may be mentioned the thread worm, which inhabits the rectum; the long thread worm, which is found in the large intestine; the round worm, which is usually found in the small intestine, and the tape worm which also affects the same part.

GENERAL SYMPTOMS—These are shown when worms are present in large numbers, when they attach themselves to the mucous membranes, or when they bore through these to reach other parts. There are general signs of ill-health, poor condition, pot-belly, hide-bound, a scurfy, dry state of the skin, irregular and usually voracious appetite, diarrhoea, alternating

with costiveness, and above all, the passage of worms or their eggs. There is often a tendency to elevate the upper lip and rub it against a wall or manger, to lick earth or lime, or to shake the tail and rub out the hair about its root. There may sometimes be severe, flatulent or spasmodic colic.

TREATMENT—Most of the remedies recommended in the old works of veterinary are just about as likely to kill the horse as the worms, and are, to say the least, unsafe. The true theory is this: Worms are the result of indigestion; hence our object by way of prevention is to give tone and strength to the digestive organs. Their weak condition is not due to the presence of the worms, but is just what account for the presence of them, and which create morbid secretions that invite their remaining; but as soon as the digestion and tone of the system are improved worms cease to be nourished, when they die, are digested and pass from the bowels. In other words, worms are the effect and not the cause of poor condition in almost every case, and as soon as this poor condition is remedied they cease to exist.

Suppose we give the infested horse powerful purges, calomel, turpentine, etc., as are recommended; we may succeed in expelling worms by such methods, but that only mends the matter in part, for these medicines are all more or less prostrating, and create a worse state of digestive derangement than that which previously existed, which soon causes their return.

When a horse shows any of the symptoms here alluded to, feed him Standard Food with the grain, two measures at each meal, and keep it up persistently until the thorough good condition of the animal is established. It is obnoxious to the worms, but its great value in expelling them lays in toning up the digestion and general system to take up the morbid secretions just spoken of.

It cannot be expected that a few days' feeding of the Food will accomplish all that is wanted in expelling worms. Its use must be continued in some cases for weeks, but the good results that are sure to follow will more than pay all trouble and expense.

Where it is thought necessary, the following may be used in connection with the use of the Food: Fluid extract of wormwood, four drachms, to be given in the morning before feeding, for several days.

Four drachms of the solid extract of male fern, every other morning for a period of ten days, is said to be a specific for tape worm.

Bots.—The only parasite which occupies the stomach as its dwelling place is the common horse bot. There are doubtless others which undergo a process of development in the stomach, and we also know that many are carried into it by a reverse action of the intestines.

These parasites are produced by a variety of bot-fly, which attach their eggs to the hairs on the knees, breast, nose, sides and mane of the horse, which give rise to irritation and are licked by the animal. The moisture thus derived and the temperature of the summer season are sufficient to hatch the eggs. They are carried by the tongue to the mouth, and eventually to the stomach, where they attach themselves to the mucous membrane. In this situation they remain for a period of about eight months, when they leave their hold and pass from the bowels. The presence of bots within the stomach has been a subject of great consideration, some authorities claiming that they prove of great service in assisting digestion, etc., while others claim that their absence would be a boon to the horse. It is evident to us however, that they seldom do injury, unless congregated in large numbers.

TREATMENT—Improve the condition of the horse so that the debilitating effects of the bots' presence will not interfere with the general health and condition of the horse; for it must be borne in mind that no medicine will dislodge or destroy them short of killing the horse also. Once the eggs are in the stomach, which seems to be their natural dwelling place, they cannot be removed by force. Allow good feeding and the regular use of Standard Food to keep the animal in good condition, which

it will do, and without doubt prove the best form of treatment that can be adopted.

COLIC.—This is a disease of very frequent occurrence among horses and is the cause of extensive mortality. The term is used to denote the pain and disturbance arising in the bowels from various causes. The disease is of two kinds, flatulent and spasmodic colic.

FLATULENT COLIC.—This form of the disease is known by a distension of the intestines and abdomen with gas.

SYMPTOMS.—The attack comes on suddenly and some horses are liable to it under any circumstances. At the commencement of the attack the horse becomes uneasy from pain and commences to paw and soon begins to roll from side to side. Sometimes he is on his legs again in a moment, gives the body a shake, and looks at his flank as if endeavoring to point out the location of the disease. Occasionally the animal remains quiet for a time, the limbs being gathered beneath the body in a kind of crouching attitude, until the pain becomes so severe that he must shift his position, and again we find him rolling or standing with the hind legs stretched backward and the fore ones advanced. Supposing at this period that there be no flatulency, yet the breathing is quick, the pulse wiry, the eye glassy, and the animal exceedingly nervous and uncontrollable, the case is then one of spasmodic colic; but if gas is passed from the bowels or the abdomen becomes distended, it is surely a case of flatulent colic.

TREATMENT.—Give, the first thing, one tablespoonful saleratus dissolved in a pint of water, at one dose, and if relief is not secured in ten minutes, repeat the dose. If this does not give relief, give the following:

½ ounce extract of ginger.

½ ounce hyposulphite of soda.

1 pint water.

Mix: Give at one dose.

This colic drench we can highly recommend, having used it with success in many cases.

The following is also an excellent drench, and may be used if relief is not secured:

- 1 ounce powdered aloes.
- 1 ounce sulphuric ether.
- 2 ounces tincture of opium.
- 1 pint water.

Mix: Give at one dose.

Repeat in thirty minutes if necessary, and give an injection of warm water, soap and a handful of table salt.

SPASMODIC COLIC.—SYMPTOMS—The horse shows unmistakable signs of great abdominal pain that seems to come on all at once. He leaves his feed, shakes his head, looks around at his flank and almost strikes his belly with his hind feet. In some cases the horse will paw and stamp continually, or throw himself violently to the floor. The spasms continuing, the horse breaks out in a sweat, heaves at the flank, and is greatly excited. There are intervals of ease from pain.

TREATMENT—We can recommend the following drench very highly, having used it many times with the best success:

- $\frac{1}{2}$ ounce sweet spirits of nitre.
- 1 ounce laudanum.
- $\frac{1}{2}$ ounce extract of ginger.
- $\frac{1}{2}$ pint water.

Mix: Give at one dose.

If the pain does not yield, repeat in thirty minutes. Repeat again in thirty minutes if necessary, and use a diluted injection of tincture of lobelia; two ounces in one pint of water.

Many persons ignorantly suppose that after an attack of colic has been cured, the horse is as well as ever, forgetting that violent spasms produce stiffness, soreness and weakness, and which are likely to pave the way to subsequent attacks or lay the foundation of other diseases when returned early to work. In addition the animal has so much medicine within his digestive organs that hard labor may produce serious results. Give the animal perfect rest, if possible, for several days. Allow good feed and the regular use of Standard Food to again

put the digestion in good order and guard against a return. We are safe in saying that most cases of colic can be prevented by keeping the digestive organs in good condition from the use of Standard Food.

INFLAMMATION OF THE BOWELS.—This is a common disease among horses, and may follow unrelieved obstruction of the bowels, especially if these have been treated by powerful medicines. The indiscriminate use of irritating purges, or of mineral condition powders, is prolific in its cause. It may also be caused by exposure to cold, drinking cold water in great quantities when hot, diarrhœa and as a sequel to colic.

SYMPTOMS—There is severe pain in the belly, which is continuous, giving no intervals of rest as in colic, for which disease it cannot be mistaken on this account; for in colic there are times of ease from pain, but never in this disease. There is extreme restlessness, sweating and breathing fast, with high fever and excitement.

TREATMENT—Give thirty drops of the tincture of aconite root, and repeat in two hours. Apply blankets wrung out of hot water to the belly and renew every twenty minutes. Do not bleed, as this only weakens the animal and tends to hasten death. Give injections every half hour of warm water and soap, to which has been added a small amount of table salt, and continue this form of treatment as long as sufficient strength of the horse remains. This is a hard disease to handle when once started, and purgatives, or any medicines except such as will allay fever and pain, are too slow to act.

But prevention is especially to be sought in such a terrible disease. Feeding regularly and sufficiently frequent, in moderate quantities, with food of good quality, and a gradual, instead of a sudden change in diet, are highly essential. Avoid full draughts of cold water when sweating and exhausted, and particularly the feeding of new hay or grain, or heating agents, like corn and wheat, unless the horse is accustomed to this kind of feed. Keep a box of Standard Food in the stable and give a measure of it daily with the grain feed. It will

strengthen the horse, give him good blood, good appetite and, not least of all, good digestion, that, with good feed, affords assurance against such attacks.

DISEASES OF THE LIVER.—Disease of this organ is often met with among horses that are highly fed and have little to do; at the same time hard-working horses are often its subjects from errors in diet and various other causes. The liver is the largest secreting gland of the body, and, without it, digestion cannot be maintained, and the waste or effete matter cannot be removed from the blood. Therefore, when the liver is disturbed there can be no health in the rest of the system.

Space being limited, we are prevented from enumerating in detail the various derangements and diseases of the liver, but a review of the general symptoms that are generally seen may be of special value.

GENERAL SYMPTOMS—Briefly, these may be stated as follows: Sluggishness; irregular bowels; the excrement of a yellow color from excess of bile in congestion of the liver; lameness in the right fore limb, or even in one of the others, without observable cause; cramps and even paralysis in the severe cases; slow pulse; yellow or orange color of the eyes and other visible membrane; tenderness when the last ribs are struck with the fist; a yellow fur may sometimes be seen covering the upper surface of the tongue; appetite lost; swelling or stocking of the legs, especially the hind ones, etc.

GENERAL TREATMENT—Relieve the horse from all very laborious work; but it must be remembered that a full limit of moderate daily exercise is very essential to a cure. Many of the books recommend bleeding or purging, but no authority can convince us of the good effect of such treatment. Give the horse as much change in diet as possible. Assist the liver in its all important work of digestion and strengthen and give it tone to perform its labor. This may be done by proper feeding and the regular use of Standard Food; if fed about two measures at each meal, it will act as a mild laxative, enough to very soon place the bowels in good order.

The Standard Food is prepared with the object in view to render natural assistance to the liver in digestion, and for this purpose it, without doubt, stands without a peer, and it can positively be relied upon, and is supported by our guarantee, to regulate all primary derangements of this organ.

LAMPAS—A red, swollen state of the soft parts behind the upper front teeth, and is seen in young animals on shedding the teeth, or in older ones in digestive disorder. The taking in of food may be painful from the tender palate projecting beyond the teeth.

TREATMENT—Feeding hard, unshelled corn has a good effect. Scarify slightly with a knife or lancet, for half an inch back from the teeth, and if caused with disorder of the stomach give a mild dose of physic and regulate the digestion by feeding Standard Food. This is a much more humane treatment than burning the mouth with a hot iron, an operation which the horse never forgets nor forgives.

DISEASES OF THE URINARY ORGANS.

INFLAMMATION OF THE KIDNEYS — INFLAMMATION OF THE BLADDER
— DIABETES — CALCULI — BLOODY URINE.

Diseases of the urinary organs are of considerable prevalence in certain localities, and not infrequently the assistance of skill, combined with great care, is demanded in relieving the subjects of their attacks. They are more frequent in localities that abound in diuretic or resinous plants; where fodder is secured in a wet, musty condition, and fed in this damaged state; or in lands containing limestone or alkali. The habitual privation of water also causes this class of disease, as well as injudicious dosing with diuretics, and finally mechanical injuries to the loins, etc., all tend to induce various urinary diseases.

GENERAL SYMPTOMS—In most cases where there is acute inflammation it is accompanied by a stiff, straddling gait with the hind legs. The loins are tender, as is shown by pinching them, when the horse crouches. There is less trouble in backing than where there is sprain of the back or loins, but it is found very difficult to turn the horse around or describe a circle with his body. There is straining to discharge urine, which may be passed in large quantities, in deficiency, or, perhaps, not at all, and, as is the case in all acute affections, thirst and loss of appetite are noticeable.

In the general treatment of the urinary organs we have always advised the systematic use of Standard Food in connection with good remedies for their relief. The basis of this advice has been the experience we have gained from feeding it in private use, and the high testimony we have received indorsing its value for these diseases. In the manufacture of the Food no direct diuretics are used, which, our experience teaches us, makes it of great value in treating this class of disease. Furthermore, ingredients for its manufacture have been introduced

by us, which act as a powerful tonic to these organs, and which are used by no other manufactory of the kind in the United States, and which our readers are assured will act in the mildest and most efficient manner, and, in connection with general good treatment, perform a cure where it can be reasonably expected.

INFLAMMATION OF THE KIDNEYS.—This disease is generally caused by hard work, by slipping, or from sudden colds by being exposed to rain and cold, the eating of musty hay or unhealthy food of any kind; powerful and continued diuretics are liable to cause it.

SYMPTOMS—More or less fever of the general system, and unwillingness to move, particularly the hind legs: very sensitive to pressure on the spine. The horse looks anxiously around at his flanks, stands with his hind legs wide apart and straddles as he walks. He is turned with difficulty on account of pain. The urine is high colored, sometimes bloody, and is voided in small quantities. The pulse is quick and hard.

TREATMENT—No diuretics are to be given as they would simply aggravate the case and make it worse. Give the horse one pint of linseed or olive oil and then the following:

$\frac{1}{2}$ drachm powdered opium.

$\frac{1}{2}$ pint linseed mucilage.

Mix: Give at one dose; repeat every eight hours.

The loins should be fomented with hot water, or covered with mustard poultice. Soon the inflammatory symptoms subside; the horse does not have so much pain, and the color of the urine becomes lighter. Discontinue the above treatment and give one ounce of the fluid extract of buchu morning and evening. Linseed tea should be supplied liberally as a drink during the time while the horse is under treatment, and care must be taken not to allow the bowels to become overloaded. After recovery the horse should be kept quiet for a month and allowed good feed and care, with light daily exercise. During this time the moderate use of Standard Food will be found very beneficial.

Should it be suspected that the horse is suffering pain, caused

by the passage or presence of urinary calculi, then thirty to forty drops of muriatic acid should be given in a pailful of water once or twice a day.

INFLAMMATION OF THE BLADDER.—It may be caused by the injudicious use of powerful diuretic medicines, or from the use of fly blister or turpentine.

SYMPTOMS—The principal symptoms are almost identical with those of inflammation of the kidneys. The urine is voided frequently in small quantities, and in some cases the act of stalling is almost continual. The horse looks frequently at his flanks, paws, and flinches to pressure on the flanks.

TREATMENT—The same treatment that is recommended for inflammation of the kidneys should be adopted. The principal object is to lower inflammation. Do not bleed; give aconite in twenty-drop doses, four hours apart, till six doses are given, to reduce the fever. In addition to the treatment advised, give five drachms of the bicarbonate of soda twice a day, to neutralize the urine.

DIABETES—PROFUSE STALLING.—This disease consists principally of a greatly increased flow of urine, without any apparent structural disease of the kidneys.

It arises, in a great measure, from feeding musty or heated hay, exposure to cold, etc. It is frequently caused by the improper use of diuretics, as nitrate, saltpetre, resin, etc., which are frequently used in large quantities by persons who are ignorant of the harm they are doing. These ingredients are used in most of the condition powders that are for sale. It is not prudent or necessary to give such medicine, unless it is for some specific purpose, and then very cautiously.

SYMPTOMS—The extreme thirst attracts attention; the horse is constantly craving water and rapidly loses condition, the coat is rough and staring, he passes large quantities of clear urine, his litter being constantly wet.

TREATMENT—It is usually easily checked, if taken in time. The bowels must be kept free. Give nutritious diet, and of the best quality, allow frequent draughts of linseed tea. A drachm or

two of the sulphate of iron may occasionally be mixed with the oats, and one ounce of the fluid extract of buchu may be given every night.

Iodine in two-drachm doses, once or twice a day, is claimed to be a never failing remedy.

The following ball may be given night and morning:

1 drachm iodine.

1 drachm iodide of potassium.

1 drachm Barbadoes aloes.

Licorice and syrup sufficient to make a ball.

Tonics should be commenced early. With this aim, feed a measure of Standard Food at each meal.

Should the disease not yield to such treatment, the case may be considered incurable.

CALCULI—STONE IN THE BLADDER.—These are concretions formed in the bladder from a diseased condition of the urine.

SYMPTOMS—Many of the symptoms are similar to those of spasmodic colic. There is pain, an occasional stoppage in the urine before all is passed, and a straddling gait.

TREATMENT—There is no treatment in the province of medicine that can be recommended. Relief is to be secured by a surgical operation, a description of which will be of no avail here. Seek the services of a competent veterinary surgeon and place the case in his hands.

BLOODY URINE.—This is the result of sprains or injuries of the loins, unwholesome food, violent exercise, etc. Strong diuretics are also occasional causes.

TREATMENT—Remove the cause, whatever it may be. Give plenty of linseed tea to drink. Apply warm water to the loins. Give one of the following pills daily:

1 ounce sugar of lead.

2 ounces linseed meal.

Mix with syrup and divide into eight pills.

DISEASES OF THE GENERATIVE ORGANS.

CARE IN PREVENTING — ABORTION — HINTS ON PREVENTION OF — DIFFICULT PARTURITION — STERILITY IN STALLIONS.

This class of disease in the horse is not by any means infrequent, but is mostly confined to breeding districts. It is certain that thousands of farmers and stock breeders suffer more loss from the evils of abortion, alone, than from all other diseases among their stock; while other diseases that come under the same general head go to make up a list that occupies a position to command their careful attention, that knowledge may be gained and measures adopted for their prevention and judicious handling.

They arise from a variety of causes, among the most prominent of which are poor feed and neglect, producing a debilitated condition of the system; mechanical injuries affecting the parts; the improper feeding of smutty corn or of fodder containing ergot; excitement and irritation accompanying gestation or parturition; and diseases of the urinary organs.

There is no class of disease in which the natural rules of prevention should be more assiduously adhered to than in this. The farmer or breeder who is active and watchful enough to prevent disease among his stock is, from a general point of view, successful. It means a great deal, and applies in the consideration of every class of disease, but in none more than this. In many cases severe forms of disease may be safely handled in proper hands, and the calling of a veterinarian may be the means of again setting matters right; but there is no use in doing this after the damage has been done, as in a case of abortion, where there is no help but in prevention.

ABORTION—as has already been stated, there are many cases in which more loss is suffered from abortion than from all other diseases among stock. It consists of the expulsion from the

womb of the fœtus, prematurely, or before its natural time. It is caused by blows or pressure on the abdomen, slips or falls, diseases of the abdominal organs, the feeding of poor and innutritious food, causing a poor and generally unthrifty condition; of ergotted hay or smutty corn, drinking water that is foul or very cold, severe exercise after a long rest, hot and damp stables, and the abortion of other animals in the same stable. These are the principal causes, but it is caused more from errors in diet and care, in feeding too little or too much, or upon fodder that is innutritious and harmful, than anything else, as they produce a deranged or diseased condition of the system, when abortion is likely to follow.

PREVENTION—Avoid every cause as much as possible that may seem likely to produce it. See that the animal is allowed good, wholesome diet, and enough to keep it in good condition. Indigestion should be studiously avoided, for it is followed by debility and disease. Smutty corn or hay containing ergot should not be fed, but if these must be consumed, feed with carrots, turnips, etc. Keep in well ventilated stables, and, finally, assist the digestion and strengthen the system by the moderate use of Standard Food. If the animal is in fair condition, two measures a day will be sufficient. It makes good blood and gives tone to the system, and strengthens the generative organs. If it is fed in this way, and general good care is given, it will prove of the utmost value, and, barring accident or injury to the animal, do all that is required. It has been used where abortions have occurred in a herd, effectually stopping it, by which reason we are amply able to judge of its value.

An animal aborting from any cause should be allowed to run over several periods of heat before she is served again. When abortions have broken out in a herd, good results have followed the use of chlorate of potassa daily, in one-half ounce doses.

When the abortion becomes inevitable, it must be allowed to proceed as in parturition, and assistance given if necessary.

DIFFICULT PARTURITION—Danger from parturition arises chiefly in its being forced from any cause before its natural time, from unnatural conditions of the passages or from wrong presentations. It is easy in most animals and is, in nearly all cases, a matter of mechanical simplicity. The results are usually most satisfactory when left to nature. The relaxation of the ligaments of the pelvis, which are gently dilated by the advancing water bags, is the natural preparation, and makes it in animals, where good condition has been maintained, a process which is rarely difficult or protracted.

Excellent results may be secured by feeding two to three measures daily of Standard Food in warm, sloppy feed, for several weeks before parturition.

Various disorders are likely to follow parturition that is difficult, particularly in animals that have become weak and poor from innutritious food or lack of care, and these should be carefully prevented. Flooding, retained afterbirth, leucorrhoea, etc., may be prevented by the regular use of the Food in building up and strengthening the system of the animal.

STERILITY IN STALLIONS.—The question has been asked us a great many times by farmers and breeders, "Is the Standard Food a good thing to feed to stallions," and we have always answered that it is, supplementing our reply with the information that we never saw any thing better. This we have always claimed without reserve, for we have observed the results of its use closely, and they have been good indeed. It is well known that many stallions, during a season of hard service, will fail to place some mares with foal, even though every surrounding is propitious to that result, and some, even without excessive copulation, prove sterile in frequent cases. Our careful observation of the tests of Standard Food in overcoming this difficulty fully warrants us in recommending its use in such cases. It makes good blood, gives fertility and tone to the system, and strength to the generative organs, and, in a general course of strengthening, fits him for labor and fruitful service.

DISEASES OF THE SKIN.

FROST-BITES—SCRATCHES—GREASE—LICE—MANGE— ERUPTIONS.

FROST-BITES.—These cause extreme swelling of the heels and back part of the hind legs, and are the result of exposure of the parts in severe weather on account of broken doors or open places in the walls of the stable, which admit the cold.

TREATMENT—If the legs are swollen and painful, rub them with snow or cold water, continuing gradually with warm water. Then rub dry and apply Standard Stock Liniment. Apply the liniment twice a day afterwards, until well.

SCRATCHES, MUD-FEVER, CRACKED HEELS.—These diseases are very common among horses, especially in the spring and fall months. They are often the result of keeping horses standing in damp or filthy stables. Another common cause is washing the legs without afterwards rubbing them dry. The hollow of the pasterns are swollen and cracked and there is usually more or less lameness. The parts are hot and tender and frequently bleed.

TREATMENT—The horse should be given plenty of litter and kept in a clean, dry stall. Wash off the parts with warm water and soap, dry thoroughly and apply Standard Stock Liniment twice a day. If the horse is in poor condition, or his blood disordered, feed one measure of the Standard Food at each meal. This treatment has been used in many cases and found very reliable.

We give below a remedy recommended very highly by one of the most successful horsemen in the country:

3 ounces oxide of zinc.

2 drachms carbolic acid.

10 ounces lard.

Mix: Apply twice a day.

The following prescription is regarded very valuable by a noted horseman:

2 ounces resin.
 2 " copperas.
 2 " alum.
 1 " bees wax.
 4 " tallow.
 1 pint tar

Boil slowly and skim. Use when cool.

GREASE.—This is a disease of the heels and legs of the horse, similar in nature to scratches, but of a more aggravated form, and produced by the same general causes. In the early stage the sweat glands are inflamed and there is a discharge from the heels of an offensive oily character, which often causes portions of the skin to slough off, producing unsightly sores on the parts.

TREATMENT—All medicinal aid is useless unless the parts are kept clean. Most cases are readily cured by washing the heels, and after drying them well applying Standard Stock Liniment twice a day. It may be safely claimed that this treatment is all that is necessary in the early stages of the disease. It must be kept up regularly, however, for, on account of the nature of the disease, there is no certainty of an early cure. In place of the Liniment the following lotion may be applied daily, which, in mild cases will generally suffice:

30 grains chloride of zinc.
 1 pint water.

In cases of long standing, cut off the hair and apply linseed poultices to the parts, mixing with them a little powdered charcoal. After removing the poultices apply the following ointment each morning and wash off clean at night:

1 scruple acetate of lead.
 4 drachms soft soap.
 4 drachms lard.

The above is highly recommended by a practical horseman. Feed the Standard Food while giving the external treatment,

one to two measures at each meal, according to the condition of the animal.

LICE.—In the majority of cases the presence of lice may be attributed to want of cleanliness. The curry comb and brush and clean stables are the preventives.

When a horse is taken with itching, and scratches and rubs himself as if something were annoying him, examine him carefully for lice, and if present they can be seen with the naked eye.

TREATMENT—Take liver of sulphur, one ounce; cold water, one pint; mix and apply with a hard brush to but a portion of the body at a time.

A decoction of stavesacre is very effectual, and is made as follows: Powdered stavesacre seeds, four ounces; boiling water, four pints. When cool, apply with a brush, after which tie up the animal's head till the skin is perfectly dry.

In addition to the local treatment feed Standard Food, one measure at each meal to improve the condition.

MANGE—This is the result of an insect burrowing in the skin, and is very contagious. It may be generated by uncleanness and poor care, but is usually the result of direct contagion from coming in contact with a mangy horse, his blankets or harness. A healthy and clean horse, however, may stand for weeks near a mangy one without taking the disease, which shows that plenty of "elbow grease" with the curry comb and brush and good feed are the preventives.

SYMPTOMS—Generally the first symptom to be observed is the horse rubbing his head and neck against the manger. Small pimples appear and the hair falls off. The skin is dry and hard; the hair has lost its gloss and does not lay smooth upon the body. A mangy horse is soon reduced in flesh on account of the constant irritation.

TREATMENT—The disease being of a local nature requires local treatment. The following is recommended:

- 2½ ounces creosote.
- 15 ounces spirits wine.
- 40 ounces water.

Before applying wash the horse thoroughly with soap and water, then when dry use the creosote mixture.

Another plan of treatment, recommended by a prominent veterinarian, is to wash the animal thoroughly with castile soap and water, wipe dry and apply the following mixture:

1 pound unslaked lime.

2 pounds flour of sulphur.

12 pints water.

This mixture should be previously prepared by placing in a stone jar on the stove until it boils. Stir with a wooden spatula and keep boiling for ten minutes; then set it aside and at the end of twelve hours pour off the clear liquid and bottle tightly and put away in a dark place. Should it fail in the first instance, a second application will do no harm whatever.

ERUPTIONS—There are many different varieties of skin diseases, many of which are much the same and produced by the same causes. A certain class of skin disease, which we have chosen to place under the head of eruptions, shows faulty digestion, humors and impurities of the blood, etc. The hair falls off in places, leaving the skin bald and covered with small pimples. The derangement may be so severe, indeed, that the limbs and body will break out in small sores.

The condition of the blood must be improved and the digestion corrected to cure the disease. To this end feed Standard Food regularly, one to two measures at each meal, with good grain feed. There is nothing more effective.

LOCAL INJURIES, LAMENESS, ETC.

GENERAL REMARKS—CUTS AND WOUNDS—BARB WIRE WOUNDS—BRUISES, PUNCTURES, ETC.—SPRAINS—SWELLINGS—SADDLE OR COLLAR GALLS—PROUD FLESH—STINGS OF BEES—BROKEN KNEES—CAPPED HOCK—CAPPED ELBOW—RING-BONE—SPAVIN—BLOOD SPAVIN—CURB—SPLINTS—SIDE BONES—THOROUGHPIN—WIND GALLS—FIRING HORSES—FOOT DISEASES—CONTRACTION—CORNS—PRICKS—SAND OR QUARTER CRACK—NAVICULAR DISEASE—THRUSH—QUITTER—FISTULA—POLEVIL—SWEENEY—FOUNDER—CHRONIC FOUNDER—LOCK JAW.

This class of affections is large and varied, and embraces wounds, bruises of the skin and deeper seated tissues, fractures of bones, sprains of ligaments and tendons, dislocations, etc., etc. The importance of this chapter entitles it to more space than we can devote to it, but we trust the following concise forms of treatment will, if carefully carried out, lead to the most satisfactory results.

The rational treatment of the foregoing diseases, the world over, has been the application of compresses, poultices and liniments. A careful study of these diseases has resulted in the production of our Standard Stock Liniment. Having stood the severe test of years of constant trial, this preparation has become what its name implies, a standard specific in the above and all kindred diseases; and, on account of the unusual merits of this Liniment, justice will compel us to recommend the Standard Stock Liniment in many of the forms of treatment which follow.

CUTS AND WOUNDS—These injuries are easily managed in most cases. In character they are either cuts, lacerations, bruises or punctures. In cuts from any instrument, the first thing to be done is to clip the hair from around the edges of

the wound, and wash thoroughly with warm water and castile soap, apply Standard Stock Liniment, and repeat this treatment daily until a cure is effected. In cuts of a more serious character, involving the rupture of large veins or arteries, the flow of blood should be stopped at once. This may be done by touching them with a hot iron, or a more simple and usually effective remedy is covering the part with cob-webs. Should there be much inflammation and pain, poultice; but, if poulticing is impractical, hot fomentations must be applied in conjunction with the Liniment, and continued until it subsides.

Give the horse freedom from flies and all other annoyances.

BARB WIRE WOUNDS.—Of all the dangers of external injury to which western horses are subject, the barbed wire fence is responsible for more than all other causes combined. Injuries from this cause demand the most intelligent treatment, on account of the seriousness of their character. The treatment should be similar to that recommended for ordinary cuts. The danger arises mainly from the poisonous effects of the wire, and should be promptly attended to. No better result can be secured than by the free use of Standard Stock Liniment. It counteracts the effects of the poison, produces a healthy suppuration and checks inflammation, so that by using it once or twice a day a speedy cure is effected.

We have used the Liniment in our personal practice so successfully that we have no hesitancy in guaranteeing it as the best specific for barb wire wounds on the market.

BRUISES, PUNCTURES, ETC.—These are caused by kicks, blows, falls, etc., and on account of location are frequently hard to treat. A special feature is a loss of vitality which often leads to slow recovery. The first object to be attained is the restoration of the affected parts to healthy action; stimulants must then be diligently employed. Standard Stock Liniment contains all the elements necessary to accomplish this end.

Punctures are usually caused by nails, the point of a fork, or other sharp instruments. The same treatment should be employed as has been recommended for barb wire wounds.

SPRAINS.—Injuries of this nature are caused by over exertion of the part affected, producing a rupture of some of the fibres of which it is composed.

The treatment of sprains is so simple, and their neglect so disastrous as to merit special attention. Give the horse complete rest, without which no cure can be expected; bathe the affected parts with warm water and rub thoroughly dry; then apply Standard Stock Liniment, rubbing well to promote healthy action, repeating twice a day until cured. Improve the general condition of the horse by feeding bran mash to which has been added a measure of Standard Food.

SWELLINGS.—Hard, inflammatory swellings, caused by injury, suppuration, diseased bone, etc., are very frequent among work horses, and are often the most troublesome and unsightly ailments the horse is heir to. Intelligent forms of treatment can always be had which will aid and often cure. As a general form of treatment, nothing will be found better than the regular and systematic use of Standard Stock Liniment, in connection with thorough and persistent rubbing.

SADDLE OR COLLAR GALLS.—These are very common as well as annoying evils which beset work horses. The cause is usually a poorly fitting harness or saddle.

The treatment consists in keeping the parts clean, properly adjusting the harness and applying a good healing lotion. The best thing we know of is Standard Stock Liniment.

PROUD FLESH.—A name commonly applied to hasty granulations in a sore or wound, which presents a fungous appearance.

TREATMENT.—Sprinkle the wound with a little powdered blue vitriol. The Standard Stock Liniment will also have an excellent effect in stimulating a healthy growth of new flesh.

STINGS OF BEES.—These are the source of great pain and irritation to horses, and sometimes lead to very serious results. The prompt application of Standard Stock Liniment will relieve the pain at once. Apply every two or three hours until cured.

In case the Liniment cannot be had, apply a strong solution of camphor and good vinegar.

BROKEN KNEES.—When a horse stumbles and falls upon his knees, taking the hair and some of the skin off, it is called broken knee. They are of all degrees of severity, but require much the same treatment as a common wound or bruise. Cleanse the parts from sand and dirt, and, if the knee joint has not been injured so as to allow the escape of joint oil, the regular use of Standard Stock Liniment will effect an early cure, as it is an excellent remedy for all abrasions of this character, healing them in a remarkably short time. In case the joint is affected, secure the services of a competent veterinarian at once, as it may save the horse.

CAPPED HOCK.—This name is given to a soft swelling on the point of the hock, and is caused by kicking in stable or in harness, lying on stone floored stalls, or by kicks from other horses.

The best treatment is the regular use of the Standard Stock Liniment. The parts should first be bathed with cold water, to reduce any inflammation, then rub thoroughly dry, and apply the liniment. This treatment, if repeated twice a day, will produce a cure as quickly as any remedy that can be prescribed.

It might be well to remember that time is required to remove any enlargement, and patience is as important as good medicine.

CAPPED ELBOW.—This is an enlargement at the point of the the shoulder, and is caused by the calk of the shoe pressing against the part while the horse is lying down.

TREATMENT.—The enlargement, partaking of the nature of an abscess, should be opened, after which treat as an ordinary wound, applying Standard Stock Liniment once or twice a day.

RING-BONE.—This is a form of disease similar to spavin and splint, and consists of a morbid enlargement of the bone located just above the crown of the hoof. Many cases are of hereditary origin, on account of ill-formed pastern joints, which are poorly

CAPPED HOCK, RING-BONE, SPAVIN.

adapted to hard work, and ring-bone is the result of nature's attempt to strengthen the joint.

The exciting causes of ring-bone are sprains brought on by overwork; in short, either sprain, injury, blow or bruise may act as the direct agent in bringing about the disease.

TREATMENT—The remedies commonly used are varied and extensive. Forms of treatment are adopted which are not only foolish but barbarous. It seems that the ring-bone is not enough to torment the poor brute, but that firing and other equally inhuman practices prevail, more in the past than in the present, to be sure; but such treatment should be discontinued by every man who loves a horse. The idea of curing ring-bone, and restoring the parts to their normal condition, is absurd. Much, however, may be done in the way of reducing the enlargement, and, in recent cases, intelligent forms of treatment will do much toward restoring the joint to its natural form and uses. First, remove all heat and inflammation with cold water cloths wrapped around the limb for three days, taking them off at night; then apply Standard Stock Liniment, and rub vigorously until thoroughly dry. This treatment should be followed daily. An accompanying treatment, recommended by a noted veterinarian, will be found to work exceedingly well in some cases. It is the application of cod liver oil and kerosene in equal parts, alternating with the Liniment, using it in the morning, and the Liniment at night. Bear in mind that a cure must not be expected, for you are treating what is termed an incurable disease; but perseverance in this treatment will reasonably reward every effort.

SPAVIN.—This consists of a diseased condition of the hock, and is commonly located on the inner side, the result of which is ulceration, inflammation, or a bony deposit. There is usually an enlargement of the size of half a walnut, and sometimes larger, while frequently there is no enlargement to be discovered.

The causes of spavin are numerous, but result chiefly from hard work, sprains, or any cause which may excite inflammation

of this part. The most common cause lies in the breeding of horses on account of malformation of the limb.

SYMPTOMS—The horse shows a stiff moving of the toe, which causes a peculiar, quick catching up of the leg, especially in trotting, which usually passes off so that no lameness is exhibited after being exercised for a short time. If turned quickly in a narrow circle, the animal drops on the limb, carries it stiffly or even rests on the toe only.

TREATMENT—The hopes of success must greatly depend upon the time the evil has existed, It must be begun before the bony deposit has gained its full solidity, so as to form a part of the bone itself. The removal of acute lameness is generally the chief benefit which can be expected. Our principal hope, in recommending the form of treatment we do, lies in not only preventing the bony deposit, but in removing the inflammation which is the cause of much of the pain, stiffness and enlargement of the ligaments. Standard Stock Liniment has given such universal satisfaction in the treatment of spavin, not to cure to all intents and purposes, but to do what we have stated above, that we feel justified in recommending it, knowing that it will satisfy any horseman who expects a reasonable result. Give the horse a complete and entire rest, as a cure can not be otherwise expected; bathe the limb in warm water, and rub thoroughly dry; then apply Standard Stock Liniment to the diseased part as often as three times a day. Continue this treatment until the lameness has been reduced, when one or two applications of Liniment a day, with good rubbing, will suffice.

Do not expect impossibilities; old cases are practically incurable, but more recent ones may be treated in this way with reasonable success.

BLOOD SPAVIN.—This is an enlargement situated in front of the hock joint. It is soft and fluctuating, rarely causing lameness. It is sometimes so extensive as to involve the sides of the hock joint. There is really no satisfactory treatment for this difficulty. The best that can be recommended is to bathe

the joint with cold water, or, better, direct a stream of cold water upon the joint for ten minutes; rub dry, and apply Standard Stock Liniment well rubbed in with the hand. Give the horse complete rest if possible. Do not attempt to open the swelling, as there is danger of injuring the joint.

CURB.—This is a swelling upon the back part of the hock just below the point and is the result of strain of the ligaments. Horses with ill shaped hocks are most susceptible to this disease, or those having what is known as cow hocks.

TREATMENT—Curbs are not usually difficult to manage; what is most required is attention and perseverance; without these no form of treatment can result happily. Put on a high heeled shoe, then bathe the hock in as hot water as the hand will bear, and rub thoroughly dry; do not neglect the rubbing, after which apply Standard Stock Liniment to the swelling. Repeat this treatment daily for at least a month, at the end of which time the swelling will begin to disappear. Continue the use of the Standard Stock Liniment as often as may seem necessary. Bear in mind that rest to the animal is one of the most essential requisites to a cure.

SPLINTS.—This is a small bony enlargement which appears usually upon the inner side of the foreleg, well up toward the knee. It is generally caused by working horses when too young, but frequently disappears as the animal grows older.

Treatment for this enlargement should be that usually recommended for bone spavin.

SIDE BONES.—This disease is most common in the fore feet, and especially where the pasterns are straight and short. Properly speaking, it is the ossification of the cartilages of the bones of the foot.

TREATMENT—The same principles must be observed as in all these diseases. Rest is essential; cold water application, and the regular use of Standard Stock Liniment, will be found as satisfactory as any treatment that can be used.

THOROUGHPIN.—This is synonymous with blood spavin, and is located on the inside of the hock just above the point where,

in the natural condition of the limb, is a hollow. These enlargements rarely cause lameness, although the parts involved may become inflamed. A simple and highly recommended remedy is the application to the enlargement, as soon as it appears, of soft soap and salt, well rubbed in at night and washed off in the morning repeating three or four times.

The same treatment can be recommended as that given for the cure of blood spavin.

WIND GALLS.—These are soft but elastic swellings or enlargements and are not accompanied by any inflammation whatever. They are found between the knee and the pastern joint. Any treatment for them will usually be unsatisfactory, from the fact that the same causes which produce them will bring them back again even after removal. Cold compresses, vigorous rubbing, and the application of Standard Stock Liniment, will do much towards their removal, as well as fortify the parts against their return.

FOOT DISEASES.—Nearly all of these diseases are directly or indirectly the result of faults in shoeing and the lack of care of the feet. One of the points on which the owner should always be careful is that the foot should be properly pared to receive the shoe. The frog need never be touched any more than to remove hanging shreds. More horses' feet have been spoiled by paring down the heel and in cutting and trimming the frog than in any other way. Always see that the shoe fits accurately at all points of the hoof, and that it is nailed on by careful workmen. Remove the shoes before the hoofs have overgrown them, so as to allow them to bear upon the sole.

CONTRACTION.—This is the result of bad management in the stable and a lack of knowledge in shoeing. Contraction is an alteration of the shape of the back portion of the foot—a narrowing at the heels.

TREATMENT.—Cut down the hoof and shorten the toe, but do not touch the bars nor frog. Soften the hoof by soaking it often in warm water. Then put on a light shoe and use the animal only at light work. Anoint the hoof, frog and sole

daily with a mixture of fish oil and spirits of turpentine, which will soon soften the foot and render it elastic. Nailing the shoe on one side of the heel only is recommended as an assistant in the cure of contracted feet.

CORNS.—This is the result of an injury to the sole of the foot, caused by a bruise, or from the shoe pressing upon the part. It is characterized by a red spot, which may not be observed until the sole has been pared down. It is usually located on the inner portion of the heel, and generally causes lameness to a greater or less degree. When neglected, corns are very apt to cause the formation of matter within the hoof.

TREATMENT—Remove the corns by cutting them out, then hold up the foot and apply a few drops of commercial sulphuric acid to the part. In shoeing the horse see that the shoe bears evenly upon the wall of the foot only. A dressing which is highly recommended is equal parts of tar and olive oil. When matter has been formed within the hoof, make a small opening in the sole, so as to allow it to escape, after which, cleanse the foot thoroughly and apply Standard Stock Liniment.

PRICKS.—This injury may occur from shoeing or from stepping on a nail or other sharp pointed substance.

TREATMENT—First pull out the nail and poultice the foot over night. Then see that there is an opening for the escape of matter that may have formed. This is very necessary, for, if the matter does not escape, it not only causes great suffering to the horse, but will break out at the top of the hoof, thus forming a quitter. After an opening has been properly made, drop five drops of muriatic acid into the hole once a day for a day or two, then treat the same as for suppurated corn. In all cases of pricks, where pus is formed and allowed to escape through proper openings, if rightly treated, no further trouble need be apprehended; but, if matter is not formed from injuries of this sort, a tendon has been pierced and lock-jaw may be expected.

SAND OR QUARTER CRACK—This is a split in the hoof which may occur in all places, and in either fore or hind feet, but is

usually located on the inner side of the fore feet. It is caused by the hoofs becoming dry and brittle. It is evident, also, that it is caused in some cases by contraction. The principal object should be to prevent it. This may be done by applying to brittle feet equal portions of oil of tar and fish oil, with a brush, a few times a week. Soaking boots are manufactured which are well adapted to supply moisture for the softening of the hoof.

NAVICULAR DISEASE.—This is a disease of the navicular bone in the foot of the horse, and is of frequent occurrence. It is caused by constant work upon hard paved streets. Slight inflammation, neglected, without giving rest to the horse, continues until it ends in ulceration of the bone.

SYMPTOMS—The animal, while standing, throws the affected foot forward, thus transferring the weight of the forepart of the body upon the other limb; he has a short, hobbling gait, and steps cautiously. It is also determined by undue heat of the foot; the muscles of the shoulder waste, and the heels become pinched in and the walls are thin and weak.

The liability to navicular disease is very great in horses with narrow chests, upright pasterns and out turned toes.

TREATMENT—This is unsatisfactory, except in recent cases. Remove the shoe, shorten the toe, and keep standing from morning till night in a puddle of wet clay in which the foot will sink to the top of the hoof. At night place in a dry stall and apply Standard Stock Liniment to the coronet and heel of the foot. In case the wet clay treatment cannot be secured, place the hoof in warm water, which will soften it and relieve the pressure; then use the Liniment as above directed. This treatment will give relief, and, in most cases, effect a cure.

THRUSH.—This is located in the frog of the foot, and is characterized by an offensive discharge. It is commonly caused by unclean stables, exposing the foot to the filthy accumulations of urine and excrement; it is also caused by bruises or wounds of the frog, or the accumulation of dried mud, etc.

TREATMENT—Wash the foot clean; pare away all ragged parts of the frog; keep the stables dry and clean; and apply Standard Stock Liniment to the part once a day.

QUITTER.—This is a painful disease of the foot, and is known by the swelling of the coronet, which soon breaks and discharges pus. The quarter is enlarged and the lameness is severe and protracted. It is caused by wounds of the coronet, suppurating corns, bruises, pricks and wounds of the sole, etc.

TREATMENT—It is very necessary in the treatment of this disease that a free opening be made in the bottom of the foot, so as to allow the escape of all matter. The swelling will thus be quickly reduced. Get a small syringe and inject into the opening a mixture of the sulphate of zinc, two ounces, and rain water, eight ounces, once a day. Never poultice the whole of the hoof. If poulticing is thought advisable, one of linseed may be applied to the sole. If no opening has been made in the sole, drop ten drops of muriatic acid into the opening above once a day for a few days, and apply Standard Stock Liniment to the coronet and heel. This treatment will be very efficient.

In concluding our remarks upon the diseases of the foot, we wish to say that it is necessary in these, as in all other diseases of a like nature, to keep the bowels free and active. To this end give frequent feeds of bran mash, and use Standard Food regularly, one measure at each meal. The general health of the horse will thus be promoted and any external treatment be greatly assisted.

FISTULA.—Fistula of the withers is caused by an injury to the bones of the withers. This disease is frequently called the solow. It is of the nature of an abscess, and is usually deep seated. By reason of its location, this disease is more liable to become serious than any other of this nature, for the pus, instead of working to the outward surface, penetrates the loose tissues of the shoulder, and forms pipes pointing in several directions. It may extend to both sides of the withers and even involve the vertebræ, if neglected, and the cure will be

proportionately more difficult. It is caused by bruises and accidents, inflammation of the bone; in fact, any cause which will produce an abscess will produce fistula.

TREATMENT—In the early stages, when there is simply inflammation and soreness, cooling applications, such as pouring cold water upon it, or directing a small stream of water from a hose against it, is very beneficial, and often times sufficient, when resorted to at once. The part may be kept wet with the following lotion:

- 4 ounces salt petre.
- 1 ounce sugar of lead.
- 1 ounce muriate of ammonia.
- 1 pint common salt.
- 2 gallons cold water.

Cover the withers with a few thicknesses of cloth kept wet with this lotion. If, however, matter forms, the sooner the abscess is opened the better. Make an opening into its lowest side, so as to allow the escape of matter as freely as possible; then inject a half tablespoonful of the tincture of iodine once a day, for a few days, which will serve to eat or destroy the membranous formations. It may then be treated as a common sore, by keeping it clean and occasionally washing the parts well, first with castile soap and water, then with a mild solution of blue vitriol or carbolic acid and water. A few drops of the carbolic acid to a pint of water will be sufficiently strong. The top of the sore should be kept open by inserting a small piece of cotton smeared with simple ointment, for, if allowed to heal while containing pus, it will continue to form and break out anew.

Keep the bowels open and improve the general condition of the horse by feeding Standard Food.

POLL EVIL.—The affection is located at the back part of the head, and is so well known to horsemen that a description is hardly necessary. It commences with inflammation, followed by suppuration in the form of a simple abscess, or in the form of fistula. It is caused by injury to the poll, which may occur in many ways, or from disease of the bone.

TREATMENT—As soon as the swelling has become a little soft have it opened without delay. It will not do to allow the matter to accumulate, as it would spread in various directions, making a very formidable affection. Make the opening at its base and large enough to admit a man's finger. As soon as this is done all the matter must be squeezed out, which process may be accomplished by the use of a sponge and hot water. The sore may be syringed out with a solution of the sulphate of zinc, one drachm of the zinc to four ounces water. A simple remedy, which is claimed to be very effectual, is as follows: Burn corn cobs and fill the cavity with the ashes. Repeat two or three times if necessary to effect a cure. This treatment is vouched for by a prominent horseman, and is so easily procured that it is worthy of trial.

The following treatment is recommended by a prominent veterinarian:

- 4 ounces acetate of copper.
- 4 ounces sulphate of copper.
- 4 ounces alum.
- 1 ounce white precipitate.
- 2 ounces nitric acid.
- 1 pound honey.

This is to be used by saturating a little tow with it and pushing to the bottom of the ulcer, so that it will touch every part of it. In about twenty-four hours the diseased part can be separated from the healthy flesh with the finger, and taken out, when it is to be dressed as a simple wound. In the meantime the animal must receive the best of treatment with regard to diet, for it is very rare that this disease can be cured by local treatment alone. The regular use of Standard Food will answer this purpose admirably.

SWEENY.—This is a sprain of the muscle which fills up the rear cavity on the outer side of the shoulder joint. Soon the muscles begin to waste rapidly until the shoulder blade is prominently exposed. The primary cause may be laid to some disease in the foot or leg.

TREATMENT—At first give rest and apply hot fomentations.

When the muscles begin to form again this treatment may be supplemented by moderate use of Standard Stock Liniment, with gradually increasing exercise. Time must be given for nature to do its work, as this is as necessary as good medicine. In most cases, where the horse is turned out to pasture, he will recover all right. An occasional application of soft soap and salt has been highly recommended as an efficient form of treatment.

FOUNDER.—This disease is of two forms, acute and chronic, the latter being a continuance of the former. Acute founder consists of inflammation of the sensitive parts of the foot, and may be caused by direct injury, over exertion on hard roads, blows, bruises, pricks with nails, injury from a badly-fitting shoe, etc. It may also occur from a sudden chill, from drinking cold water when heated, from standing in a draft of air after a hard drive, or from over-loading the stomach with grain.

SYMPTOMS.—The horse stands upon his heels with fore feet stretched forward and will scarcely move; the hind legs are brought well forward under the body; he is feverish and breathes quickly, presenting altogether a picture of distress.

TREATMENT.—The horse should be encouraged to lie down, by placing him in a wide stall with plenty of good bedding; give twenty drops of the tincture of aconite root in a little cold water every four hours, until six doses have been given; apply cold water cloths to the feet, changing them constantly until the pain subsides. If this treatment is adopted at once, the horse will usually come out all right in a few days.

Keep the bowels in good condition by a liberal use of Standard Food. It is an essential part of the treatment.

CHRONIC FOUNDER.—May be treated much in the same way, only it is more necessary to soften the horn of the feet with a preparation of oil of tar and fish oil in equal parts. Do not bleed from the foot or any other place for this disease; give the animal as much rest as possible, but do not expect a cure of this disease in the chronic stage.

CARE AND TREATMENT OF CATTLE.

It will be readily seen that to fully treat all the diseases common to cattle in a book of this size would be well nigh impossible, not to mention the limits of a single chapter. We will, therefore, confine ourselves to a description of and a treatment for the more common diseases among them, including some of the more malignant disorders among cattle, together with the most rational methods for preventing them.

ABORTION.—This affection is found among all animals, but is most common among cows. Location often has a great deal to do with the prevalence of this disorder; occasionally neighborhoods are found where it seems to take almost an epidemic form. It consists in the cow parting with her calf before the full period of gestation has been completed.

SYMPTOMS.—These are generally surrounded by more or less obscurity, according to the causes producing it. When the causes are not from disease of the generative organs themselves, the symptoms which will be generally observed are weakness and general debility. In cases where it assumes what appears to be an epidemic form, a slight, almost inaudible, cough will be observed.

The most of these are produced by the unnatural conditions with which the animal is surrounded, which, if we will reflect upon it for a moment, will show how unreasonable it is to expect the cow to thrive and do well under conditions totally foreign to her nature.

The main causes are, the feeding of slops, or any other feed, the tendency of which is toward the secretion of milk in excess, or which may produce scouring; poor and insufficient feed of any description which, from lack of proper nutriment, induces an impoverished condition of the system. Milking cows too close to the period of calving is a common cause of this trouble; any disease which may impoverish the blood or weaken the system in any manner, for it must be understood that weakness and debility are the most prolific causes of this dreaded scourge.

These causes, each in themselves, or altogether, are liable to produce abortion, and, when aggravated by neglect and unwholesome surroundings, may produce a veritable epidemic of this disorder.

PREVENTION—A careful study of these causes will convince every intelligent reader that this great drawback to success in stock raising can be prevented. To this end good, wholesome food, and enough of it, must be provided; great care must be taken not to feed to excess of anything sloppy, which is liable to keep the bowels too loose, for this condition relaxes the solids of the body, and, to the detriment of good health, produces an over secretion of milk.

Dry up the milk in all cows at least sixty days before the time of calving. If the flow of milk does not stop naturally, give three drachms sulphate of iron and one-half ounce powdered gentian root in the feed once each day for a week or ten days. No milking should be done during this time, unless found necessary to prevent injury to the udder. Give sufficient food that the extra demands of nature be supplied and the offspring thrive without affecting the health of the mother. If the animal has a cough, feed one measure of Standard Food at each meal, which will stop the cough and keep the blood in a healthy condition, prevent relaxation of the solids of the body and promote absorption. Cows, during this period, should be kept apart from other cattle, particularly in the feed yard, where they are liable to accident from vicious animals.

Cattle are of a nervous disposition and highly excitable, and boisterousness or undue force will counteract every other attention that can be given them. For this reason, during the period of gestation, cows need absolute quiet and freedom from all excitement.

Elsewhere in this book we have made the plain statement that Standard Food is not a cure all, but we do state, without fear of successful contradiction, that it is a preventive of abortion among cows, when intelligently used in connection with good, wholesome food in proper quantities, pure water, sufficient shelter and proper care. It regulates the whole system, purifies the blood, promotes absorption and strengthens the generative organs; in short, its use will insure that condition of health which will best fit the animal for the performance of the task that nature has placed upon her. Feed one measure of the Food to each animal at each meal with the grain feed. If this amount is deviated from, regulate it according to the condition of the bowels.

If these directions are followed in the use of the Food and care of the animal, we will, barring accidents and mistreatment,

guarantee the performance of every claim made for Standard Food in the prevention of abortion among cows.

CALVING.—Comparatively little will be said upon this subject, as most farmers and dairymen are familiar with this natural and necessary incident to stock raising.

The symptoms of immediate delivery are great restlessness and uneasiness, indicative of pain, which is shown by lying down and rising up, or otherwise continually changing position. These increase in severity until, in the natural process, the calf has been delivered. The natural presentation at full time is when the head and fore legs are presented together. If there are no malformations, either in the cow or her offspring, parturition will take place naturally and safely. Under these conditions, nature alone can do the work. Unnecessary assistance should be avoided, and the wisdom of waiting will be shown by the results. However, should the labor be unduly protracted, on account of the animal being weak, proper assistance should be given.

There are various forms of unnatural presentation, which, however, it is not our province to treat in this book. Suffice it to say that any explanations which could be given would leave the stock owner who has had limited experience little better off than before. An operation in cases of this character should be directed by skill and experience, in order that proper methods may be adopted in assisting nature.

The retention of the afterbirth is of frequent occurrence among cows, when there is some unhealthy condition present, such as debility and an impoverished condition of the system. Healthy cows are not troubled with protracted retention of the afterbirth. When this results from a deranged condition of the system, the cause readily suggests the remedy. When cows have not cleansed within a reasonable time after calving, give one pound of epsom salts, in the form of a drench, with sweetened water; also give in a light bran mash, or with gruel, two measures of Standard Food at each meal, and continue its use until a better condition of health is established. In case the afterbirth has not been expelled within six or eight hours by this treatment, give $\frac{1}{2}$ ounce of powdered ergot of rye, and repeat in half an hour, if necessary, which will cause its expulsion by contraction of the womb. The general health from this time must be carefully looked after. Give good wholesome food in generous quantities, and with each meal give from one to two measures of Standard Food, according to the condition

of the animal, and continue its use until its full strength and vitality has been restored. The Food has been used in many cases of this kind with remarkable success, and in no one of them has it ever failed, when properly used, to perform every requirement demanded.

MILK FEVER.—This disease usually makes its appearance within a very few days after calving. Cows which are heavy milkers, especially of the select breeds, are more susceptible to it than others; it is also more likely to attack cows that are too fleshy.

SYMPTOMS—Loss of appetite; dullness; staggering gait; full, high pulse; the head and horns are hot; soon the cow becomes weak, it falls and is unable to rise, and unless the disease is checked the brain will become affected also, when the animal lays the head back on the flank or dashes it upon the ground.

PREVENTION—Owing to the fact that a great majority of these cases are almost immediately fatal, the most rational course lies in prevention. If the directions which have been given for the treatment of animals during the period of gestation, in regard to the use of Standard Food, have been carefully followed, no trouble from this source need be apprehended. It must be borne in mind, however, that the Food is a flesh producer, and, while the animal should be kept in good condition, care should be taken against the over production of flesh. For the last week before calving, feed the Food freely, one to two measures at each feed, so as to act mildly as a laxative; feed but little grain or solid feed for one week before calving; avoid as much as possible the effects of sudden changes of the weather, by providing suitable shelter. If there is any reason to anticipate milk fever, give 25 drops of the tincture of aconite root a few hours after calving, and repeat every six hours until four doses have been given.

TREATMENT—As soon as the presence of this disease is discovered, give 30 drops of the tincture of aconite root and $\frac{1}{2}$ ounce of powdered opium in a bottle of thin gruel; repeat the aconite without the opium every four hours until four doses have been given. If the disease has affected the brain, place a bag of chopped ice upon the forehead, attaching it to the horns, and replenish as needed; give a powerful purge of two pounds epsom salts, $\frac{1}{2}$ ounce carbonate of ammonia, and $\frac{1}{2}$ drachm nux vomica. Keep the animal as quiet as possible, also keep the legs and body warm, by covering according to the season. After the animal has sufficiently recovered to take

to her feed, give two measures of Standard Food daily in bran mash, gruel or any tempting food, gradually increasing the amount to two measures at each meal; continue this treatment until the full strength and vitality has been re-established.

GARGET.—This is an affection of the udder in cows, and is often very troublesome; it often occurs soon after calving. It is caused by blows on the gland, lying on cold, sharp stones, exposure, lack of proper attention in milking, indigestion, or, indeed, any derangement of the general health. If the general health of the cow is carefully looked to, and the udder and teats are kept in proper condition, there will be no garget.

SYMPTOMS.—Heat in the udder with redness and pain; in a day or two swellings will appear, becoming soft and containing pus. These must be opened at this stage to prevent sores and the final destruction of that portion of the udder.

Chronic garget is distinguished from the acute form by the absence of swellings containing pus. Shivers and chills usually accompany the other symptoms mentioned.

TREATMENT.—In mild cases, where there is but little pain and fever, rub briskly and persistently with the hand, in addition to the application of spirits of camphor or weak iodine ointment. In case these remedies are not effective, apply a warm bran or linseed poultice to hasten suppuration; open the swellings at the lowest point, and when the discharge has ceased heal as for a common sore. It must be borne in mind that the full restoration of the parts depends largely upon the udder being thoroughly milked.

SORE TEATS.—Cows are frequently troubled with this ailment, and particularly during the spring season. The teats become chapped and cracked from exposure. A good treatment for this complaint is the application of an ointment composed of lard, 8 oz., and acetate (sugar) of lead, 1 oz. Wash the teats and udder well with warm water before applying the ointment.

HIDE BOUND.—This is caused by faulty digestion and a lack of assimilation of the feed, and must not, on that account, be considered a disease in itself. The digestive organs being impaired, the manner of treatment is plain; Standard Food being a thorough regulator of the blood and digestive organs, its regular and persistent use will completely overcome this condition and restore the animal to complete health in a few weeks. Feed one to two measures at each meal with the grain feed, according to condition.

DIARRHŒA.—This troublesome disorder is the result of

various causes, among which may be mentioned over-loading the stomach, consuming food that is inferior and indigestible, a change from dry food to green, or any food of a purgative or irritating nature. Disordered digestion is a common cause, as the food is then unacted upon and it enters the intestines as an irritant.

TREATMENT—Irritants are found to be common causes, therefore they should be cleared from the bowels when they are known to exist. For this purpose give the adult animal one pint of raw linseed oil. This will not only cleanse the bowels, but has a soothing effect upon the whole alimentary canal. Follow up this treatment with draughts of linseed or slippery elm; in obstinate cases mild astringents may be used, but only after the irritant has been carried off by a laxative. The following astringent is recommended:

Prepared chalk 12 drachms.
 Powdered kino 2 drachms.
 Powdered opium $\frac{1}{2}$ drachm.
 Powdered gentian 2 drachms.
 Warm gruel 1 pint.

Mix and give at one dose. Such a dose may be repeated in twenty-four hours, if required. In all cases look carefully to the quality and quantity of the food given. The regular use of Standard Food should immediately follow the foregoing treatment. This will improve the appetite, stimulate digestion and give tone to the entire system.

DIARRHŒA IN CALVES.—This is a very common and fatal affection among young calves. A general cause is the custom of not allowing the calf to suck its own mother, and feeding it skimmed milk. They are fed out of a bucket, and the rapidity with which they drink the milk, which is often more than they need, gorges the stomach and paralyzed the digestive organs.

PREVENTION—Allow the calf to suck its own mother until it is several weeks old. This will prevent gorging the stomach with cold milk. After the calf has been weaned, and particularly if it has been fed skimmed milk, give about one-third of a measure of Standard Food in the milk at each meal. This will keep the digestive organs in good condition, and increase the thrift and growth of the animal.

TREATMENT—One of the simplest and most effective treatments is to give the calf boiled milk for a day or two, discontinuing its use as soon as it has accomplished its purpose, so as not to cause constipation. In obstinate cases give three

drachms of carbonate of soda in well boiled wheat flour gruel, once a day. Give one-third of a measure of Standard Food to promote the digestion and thrift of the calf.

The regular use of Standard Food will be found a great aid in the growth and development of young calves.

JAUNDICE.—This is quite a common disease among cattle, and consists in an unnatural distribution of bile throughout the entire system, instead of performing its natural function as an aid to digestion. This condition is due to the bile ducts becoming closed. An active cause is the keeping of the animal in improperly ventilated and damp stables. Any food or surroundings which will produce a disordered condition of the liver is liable to cause jaundice.

SYMPTOMS—A yellow color of the lining membrane of the nose, mouth and eyes. These symptoms are all accompanied by dullness, constipation and general lassitude.

TREATMENT—All cases of jaundice, when attended to as soon as the symptoms are manifested, will readily yield to the use of Standard Food, in connection with good food and rational care of the animal. It effects a cure by regulating the digestion and stimulating the secretions. One or two measures should be fed at each meal, according to the condition of the animal.

CHOKING.—Cattle that are fed upon roots, turnips, potatoes and the like, are very liable to this distressing accident.

TREATMENT—This must be as prompt as possible. Elevate the head of the animal into a line with the neck and hold the mouth open with a balling iron or similar contrivance. Then the tongue being drawn out with the left hand, the right may be passed into the throat and the substance reached with the middle finger being hooked over it so as to withdraw it. If the substance is lodged low down in the gullet it may often be worked up into the throat by pressure beneath it. If this is unsuccessful it may be moved downward, if too great force is not used. Should these measures fail, lose no time in gagging the animal. A smooth, round piece of wood, two inches in diameter may be used, tying it in the mouth and carrying the cord up over the horns. This prevents dangerous swelling and the obstruction usually passes on in the course of an hour or two.

Failing to remove the body by the means advised, pour small quantities of oil or melted lard down the throat. This may enable the animal to either swallow the substance or expel it by coughing. Should all milder expedients fail, an attempt

must be made to force the obstruction downward by means of a piece of wood made about six feet long and one inch in diameter at its base and small enough above to be flexible. Have this perfectly smooth and well oiled. Great care should be taken in ascertaining that it has entered the gullet and is clear of and above the windpipe. If coughing follows the introduction of this instrument, withdraw it at once, as this indicates that it has entered the air passages. There are cases which require the gullet to be opened and the obstruction removed, after which the wound should be brought together with a couple of stitches of silk. Then feed the animal for a week upon soft feed and gruel, so as to give the wound time to heal.

HOVEN.—This is a distension of the paunch by gas. It is caused by overloading the paunch and is especially common among weak or underfed cattle when put on green food, such as clover which is wet, green crops containing much water, and roots which are frosted or partially decayed. As this is a disease which develops and becomes serious in a very short time, every farmer should be prepared to treat it promptly.

SYMPTOMS—There is a swelling of the whole left side of the belly, which, when lightly tapped, gives a drum-like sound; the breathing is difficult, the nostrils distended and the eyes blood-shot; there is an occasional belching of wind with a loud noise. All these symptoms are accompanied by great distress, which, if relief is not given, continues until the animal falls and dies from rupture of the paunch and nervous shock.

TREATMENT—In the first stage of this disease relief may be obtained by dashing cold water over the loins and exercising the animal. Gagging, as recommended for choking, is also said to be a successful treatment. In urgent cases the paunch must be punctured. No time should be lost in choosing an instrument; if a trocar is not at hand, use an ordinary pocket knife. Plunge it into the left side at an equal distance between the hip bone and the last rib; allow the knife to remain in the wound until a large quill can be inserted in its place; this will afford a means for the gas to escape. After the gas has been removed the following mixture should be immediately given: Epsom salts, one pound; ground ginger, three ounces; warm linseed mucilage one quart; mix and give at one dose. Restore the tone and full vigor of the digestive organs by feeding one measure of Standard Food at each meal for several weeks.

This disease occurring at intervals in a chronic form is due to a debilitated condition of the walls of the rumen, which will

yield to the regular use of the Standard Food as directed above.

GRAIN SICKNESS.—This is caused by overloading the paunch with an excess of solid food. Animals gaining access to a heap of grain will eat almost to bursting. Such an occurrence frequently proves troublesome, if not fatal, and from which the term, "grain sickness," has originated.

SYMPTOMS—Develop more slowly than in hoven; distress and dullness are among the first signs; the left flank bulges outward, the back is raised and the breathing hurried. The abdomen may be dented with the hand and gives no drum-like sound upon being tapped. The horns, ears and extremities are usually cold and rumination is suspended.

TREATMENT—In the first stages give a pound each of epsom and glauber salts, two ounces oil of turpentine and one-half drachm of nux vomica. Mix and give at one dose. Follow this in an hour or two by a stimulant, such as a pint of whisky or gin, and in seven hours, if no relief has been obtained, repeat the purgative dose, using it in the same strength as before. At the end of ten or twelve hours, if no favorable symptoms are shown, the paunch must be opened, as a last resort. This is an operation requiring both skill and care and, unless the operator is acquainted with it, proper assistance had best be called.

HOOSE IN CALVES.—This is a parasitic disorder common among calves in breeding districts. It is due to the presence of very small worms in the bronchial tubes and in the lungs.

SYMPTOMS—This disease is denoted by a husky cough, difficult breathing, emaciation and loss of appetite. Soon the cough becomes frequent, with the raising of mucus and worms; the hide is tight and the coat rough and staring. Thus the disease goes on from bad to worse, until death claims the victim in the course of a few weeks.

PREVENTION—The most effective way to prevent this trouble is to keep the animal on high grazing lands and away from marsh and meadow lands. All infected animals should be kept apart from well ones and the dead bodies should be deeply buried.

TREATMENT—Place the infected animals in a close building and burn small amounts of flour of sulphur on a shovel or pan until the air is sufficiently charged with the fumes to cause moderate coughing only. This should be repeated several days in succession, then at intervals of a week, for several weeks, in order to kill the young worms as they are hatched out. Feed generously on a diet including dry grain, and the animal should

have free access to salt, as that is destructive to the worms. For calves six months old feed one measure of Standard Food daily with the other feed. They should not be considered cured until all coughing and excitement of breathing have been dispelled.

BRONCHITIS.—This is an inflammation of the lining membrane of the windpipe and the large air tubes of the lungs. Cattle are subject to every degree of severity in this disease, and in many cases, on account of its insidious and deceptive nature, its presence is overlooked until it has often times assumed a dangerous character.

Farmers and dairymen generally are not careful enough in their observations of their stock in regard to health. The great prerequisite to success in this line is a thorough knowledge of the conditions attending both health and disease, so that, when any derangement of the animal organism presents itself, he may know how to act. This is the great obstacle to be contended with in the treatment of all diseases of cattle; for, through oversight and ignorance of their symptoms, the remedies are not applied early enough.

Bronchitis is rather a disease of the herd than of the individual animal, on account of its being due largely to atmospheric causes.

SYMPTOMS.—In the beginning of the attack the animal has a slight, harsh cough, accompanied by watering of the eyes and a discharge from the nose. If the ear be applied to the windpipe, a slight grating sound will be heard.

TREATMENT.—Upon the first discovery of the attack give twenty-five drops of the tincture of aconite root every four hours until five doses have been given; also give one-half ounce powdered sulphite of soda three times a day. Supplement this treatment with the use of Standard Food, two measures at each meal, three times daily, until the animal looks brighter and eats well; then continue the moderate use of the Food until full health has been restored. Feed lightly, so as not to produce indigestion, and give plenty of cold water and allow pure air.

BLADDER DISEASES.—This class of diseases, though not frequent among cattle, is occasionally the source of considerable trouble. Diseases of this organ among them are generally caused by foreign matter in the urine, and by calculi or stone in the bladder.

SYMPTOMS.—There is almost continual restlessness of the

animal from irritation and pain. The eyes present a blood-shot appearance, the attempt to void urine is almost constant and unsuccessful, only a few drops being passed at a time; the animal is likely to die from irritation, excitement and exhaustion, if proper relief is not given.

TREATMENT—The prompt administration of tincture of aconite root to relieve pain and fever is advisable. Give twenty-five drops in one dose. Follow this with draughts of linseed tea and thin gruel, which will have a soothing effect upon the kidneys and bladder. Feed regularly two measures of Standard Food at each meal; this will correct the emaciation and weakness consequent upon this disease, and at the same time, when fed in this quantity, have a soothing and healing effect. In cases where calculi or any foreign substance in the kidneys or bladder is suspected, give sixty drops muriatic acid once a day in cold water. This should not be administered during the presence of irritation or pain.

ANÆMIA.—This term signifies a want of blood in the animal and is very common among cattle, much more so than is generally supposed. Some cases are not traceable to any direct cause, but the great majority of them are the result of improper digestion, excessive secretions from the udder, feeding for a length of time on one kind of food, starvation, improperly ventilated or dark stables, etc.

SYMPTOMS—Extreme paleness of the lining membranes of the mouth, nose and eyes; slow, weak pulse, and a great lack of life and energy; the breathing quick, and slight exertion produces perspiration and fatigue. As the blood becomes poor, all these symptoms are aggravated, and in the advanced stages dropsical swellings beneath the jaws or in the limbs, the staggering gait, etc., are highly characteristic.

TREATMENT—The very nature of this disease indicates the character of the treatment; being, as it is, due to an impoverished condition of the whole system, what is needed is neither physic nor dosing, but a generous supply of wholesome, vitalizing food, such as will make rich, pure blood, and give strength and tone to the entire system. In addition to a liberal supply of nutritious feed give each animal two measures of Standard Food at each meal.

Make occasional changes in the character of the animal's feed and give proper care and sufficient shelter. Continue the use of the Food as directed in other parts of this book.

RED WATER.—This affection is essentially a blood disease, the

result of imperfect digestion and assimilation, and is characterized by a disordered condition of the liver, wasting of the bodily tissues and an impoverished condition of the blood. The color given to the urine is caused by the breaking up of the red corpuscles or coloring matter of the blood, which passes off through this channel. This disease is most common among cows, a fact which may be attributed to the demands made on the system by the secretion of milk and process of gestation.

SYMPTOMS—Diarrhœa, lasting for a day or two, and usually followed by constipation; there is a tendency to rapid emaciation; weakness is great, and increases as the disease advances; urine of a brown or deep red color.

TREATMENT—Relieve the stomach of all indigestible matter by giving a brisk purge, such as epsom salts one pound, calomel one to two drachms, gentian and ginger each one ounce; mix and give at one dose, with plenty of fluid. Give bran mashes freely and two measures of Standard Food at each meal. To assist in a complete recovery, give good, substantial feeding, which will also assist in making blood to replace that which has been lost.

BLACK LEG.—This is a malignant disease affecting young cattle in the spring of the year. It is very rapid in its development, usually attacking the best in the herd, and death follows in a short time. It is denoted by one hind leg and thigh becoming congested with blood and turning black.

This disease is incurable.

PREVENTION—About the best method of prevention that can be recommended is to keep the young animals on high pasture lands, allow them free access to salt, and give one pound of Standard Food to each twelve or fifteen head daily. This will regulate the bowels and keep the blood in a normal condition. On the first appearance of this disease in the locality, give each animal between one and two years old half a pound of epsom salts and feed the Standard Food regularly each day.

BLACK TONGUE.—This disease is manifested by eruptive blisters on the tongue, palate and cheeks, accompanied by swelling. Although apparently located in these members, it is a blood disease and of a very malignant character.

SYMPTOMS—The tongue is red and swollen; the muzzle, head and neck are also swollen; there is a constant flow of saliva from the mouth; mastication of the food is hindered and breathing is difficult. As the disease develops the breathing becomes labored, the saliva is tinged with blood and has an

offensive odor, when fever sets in and death usually occurs within two or three days.

TREATMENT—The following treatment in the earlier stages is recommended: Remove the diseased animals to a place by themselves. The tongue should be lanced to relieve congestion; cleanse the mouth with a wash of vinegar and tepid water and give the animal one pound of epsom salts. Allow plenty of cold water to drink, and, as food cannot be taken, supply nutritious drinks of linseed or hay tea, flour or oatmeal gruel, etc. Give also, twice each day, one ounce of sulphite of soda in cold water, to correct fermentation in the blood. Great caution should be exercised to prevent the contact of the poisonous saliva with the hands or any part of the body.

PREVENTION—The same measures for prevention should be adopted as those recommended for black leg.

EPIZOOTIC APHTHA.—(MURRAIN)—This is one of the most contagious diseases among cattle. It attacks the feet and mouth, and in cows sometimes extends to the teats and udder. It is caused, as has already been stated, by contagion, and, when once fairly established in a locality, most measures for its prevention appear to be futile.

SYMPTOMS—Rough, staring coat, increased temperature and shivering; dry muzzle; mouth hot and red; eruptive blisters within the mouth and on the teats, containing pus; great restlessness in cows when milking is attempted; there is a largely increased flow of saliva; the feet frequently become badly affected with sores on the coronet and between the hoof, often resulting in the loss of the hoof.

TREATMENT—Give a laxative of one pound of epsom salts; wash out the mouth with a solution of tincture of myrrh and borax, each one ounce, in one quart of water. Apply a lotion to the teats of one half drachm of carbolic acid and ten ounces of glycerine. Apply a dressing to the feet of one ounce of oil of vitriol in four ounces of water, with a feather. This is to be used after washing the foot thoroughly with castile soap and water. Give bran mashes, gruel, linseed tea, etc. The feeding of one or two measures of Standard Food at each meal will serve to regulate the system and facilitate recovery.

TEXAS FEVER.—This is a much dreaded disease, and is supposed to originate in Texas, but might with equal propriety bear the name of any of the Gulf States, whose low malarial marshes appear to propagate this malady.

Among the native cattle of those states it does not usually

assume a malignant form; indeed, its presence is often unnoticed; but when communicated to cattle in the Northern States it assumes an exceedingly fatal character. It is propagated by contagion through the bowel discharges, and roads, pastures, streams, etc., become mediums of infection. The germ of this disease is killed by frost. It is not considered contagious between northern animals. The disease usually develops within four or five weeks after contact, and is distinguished by drooping of the head, arched back, dullness, cough, trembling of the flanks, impaired appetite and very high fever. These increase in severity until the animal is compelled to lie down. The eyes become glassy and fixed, the secretions lessened and clotted with blood, the urine changes to a dark color and the mucous membranes are of a deep yellow or brown. The disease becomes more aggravated in time, until death ensues.

A regular form of treatment is useless. However, the animal may be given large doses of epsom or glauber salts in great quantities of sweetened water, repeating the dose in twenty-four hours. Allow all the cold water the animal will drink.

PLEURO-PNEUMONIA.—This is a disease among cattle, in regard to the origin of which there is a great difference of opinion among the highest authorities, some holding the apparently well founded opinion that it is never propagated except by contagion, while others of equal prominence advance the theory that it is due to atmospheric conditions, improper food, and unfavorable surroundings.

It is a specific disease, manifested by inflammation in the air passages, lungs and their coverings, accompanied by a profuse outpouring of fluid into the chest and lungs, gradually increasing in volume until the lungs are nearly submerged; they gradually become solidified and in the course of time the vital power gives way and the animal dies from suffocation.

SYMPTOMS—Fever is the first indication; then there is a slight cough, which increases in harshness as the disease progresses; the hair along the back is rough and staring, and there is tenderness in the back when pinched. Shivering, rapid pulse and breathing, constipation, high colored and scanty urine, impaired appetite and irregular rumination are among the more prominent symptoms.

TREATMENT—Will depend much upon the condition of the animal. Low vitality, occasioned by poor feeding or the excessive secretion of milk, are very unfavorable conditions. As

soon as the disease has been discovered, give 25 drops of the tincture of aconite root, and repeat every four hours until five doses have been given. Give also one-half ounce of the sulphite of soda, twice a day. Give well chosen feed in small quantities, adding from two to three measures of Standard Food at each meal. The purpose of this is not only to stimulate the system, but to restore and maintain the appetite.

CONTAGIOUS TYPHUS—RINDERPEST—CATTLE PLAGUE, ETC.—This disease consists in inflammation and irritation of the fibrous tissue or white membranes of the nose, windpipe and chest. These membranes become deteriorated and decayed, producing a dangerous poison, which, becoming absorbed into the general circulation through a gradual process, is followed by fermentation of the blood, and the body breaks out in carbuncular sores which discharge pus. This manifestation is accompanied by fever, weakness, etc. The blood and tissues of the body become so degenerated that the animal dies in from one to three weeks.

It is caused by certain conditions of the atmosphere, debility, weakness, and a low condition of general health, and contagion made possible by these predisposing causes.

SYMPTOMS—The temperature of the body is variable, being alternately cold and hot; there is a husky cough, and a discharge from the eye and nostril; the back is arched and the coat looks rough and unhealthy; upon examination eruptions will be found in the mouth and nose. Soon the discharge from the eyes and nose becomes streaked with blood; diarrhœa sets in. All of these symptoms are followed by stupor and the signs of approaching death.

TREATMENT—Give 25 drops of the tincture of aconite root, and repeat in four hours to allay the fever. Give also powdered carbonate of ammonia 1 ounce, powdered sulphate of iron 3 drachms, morning and night, Give daily 1 ounce of sulphite of soda in the middle of the day. Give good, strong feed in moderate quantities, adding from two to three measures Standard Food at each meal. In this, as in all other contagious diseases, give plenty of cold water, allow pure air and observe strict cleanliness. Isolate the affected animal from the rest of the herd, as the fundamental principle of prevention lies in this precaution. The above treatment, carefully followed, will cure the great majority of the animals affected with this disease.

PREVENTION OF DISEASE AMONG SWINE.

The development of disease among swine is the result of the conditions with which they have been surrounded. In their native state, unrestrained by yard or pen, and without master or provider, they were obliged to labor diligently for sustenance, which gave them endurance and strength of constitution. Under present conditions their physical functions have been greatly changed by confinement, high feeding, etc. During a series of years the hog has gained much in symmetry of form and appearance, but he has certainly lost in strength of constitution and the ability to resist disease. A general relaxation of the system has opened the way for hog cholera and other fatal diseases. We do not mean to say that the hog in his native state would not be liable to take disease, but it is certain that his hardier constitution would be a safeguard against it. Most fatal diseases among swine are contagious, and find their easiest prey among animals whose feeble vitality is insufficient to resist the epidemic tendency.

A great deal of confusion has been caused by applying the name of hog cholera to almost every disease prevalent among swine. It is immaterial what the name of the disease is, so long as it conveys the proper idea. Hog cholera is not a separate disease, but is a class of malignant diseases of a contagious and infectious nature which, while allied in fatality, differ greatly in their general symptoms, internal effects, primary location and duration of attack.

Among the various forms of diseases among swine, may be enumerated: Putrid erysipelas (malignant typhus), malignant putrid sore throat, inflammation of the bowels, quinzy, strangles, diphtheria, inflammation of the lungs, kidney worms, intestinal worms, etc.

There are certain articles which can be used in the treatment of these diseases, but which we do not consider within our province to mention here and at this time, for our mission is to advocate the prevention rather than the attempt to cure these diseases.

We have the testimony of thousands of farmers to the effect that Standard Food has alone cured their hogs of disease. We positively know that it is of great benefit when fed even to sick

hogs, but it must be distinctly understood that our claims for the Food are for the prevention and not for the cure of these diseases. Each one of them requires a separate and distinct form of treatment, yet the methods for their prevention are bound to remain the same.

GENERAL CAUSES OF DISEASE.

Local conditions have much to do with the health of swine, but, in the investigation of the causes of diseases among them, a careful study of other conditions is doubtless of more importance. With the domestication of these animals came all the evils of improper breeding, confinement and erroneous feeding. Naturally a forager, active in body and strong in constitution, and made hardy by a constant struggle for existence, is it to be wondered at that the primitive hog, when subjected to the evils of modern surroundings, is a fit subject for disease?

Grave errors are made in breeding; many farmers have been tempted to sell their larger and more thrifty sows and breed from the poorer ones; also to breed from animals too young. These, together with in and in breeding, have produced a race of animals deficient in constitution and bodily vigor.

Improper surroundings must come in for their share of the causes of these diseases. Hogs cannot be expected to thrive amid filth or when unduly exposed to the heat and cold. Such surroundings are almost sure, in themselves, to originate disease. Under these conditions, a single hog in a large drove may be in just the condition to develop the disease or take it by infection, thus imperiling the safety of others, in but little better condition, by direct contact, who, in turn, convey it to others.

Another, and one of the greatest causes, is a continued high feeding of kinds of food containing too much heat and fat producing properties. The most prominent among this class of foods is old, dry corn, which, when fed continuously, produces a feverish and inflammatory condition of the system. The natural tendency of foods of this character should be counteracted as much as possible by the addition of such other articles as will produce a cooling and loosening effect, thus avoiding the perils of a plethoric condition, yet keeping the animals fattening at the same time.

No one cause is, perhaps, more productive of disease than that of keeping hogs from year to year in the same pen or field. Nature has given these animals an instinct which teaches them

to search for bugs, vegetable roots, etc., which, in bilious and digestive derangements, are natural excitants of the stomach, liver and bowels.

Frequent changes of the enclosure for hogs are impracticable and well nigh impossible to the average farmer, for the reason that it is not only too expensive, but also that space is limited which is suitable for this purpose. Recognizing this, it is a fact that the soil becomes exhausted after a time of the elements necessary to the health of the hog, and, being placed where he is unable to obtain them, it becomes imperative that he be supplied from some other source, if he remain free from disease.

PREVENTION.

The prevention of the diseases and epidemics common among swine means success to the practical hog raiser. To prevent disease among hogs is more rational than any attempted cure, however successful. Millions of dollars are annually wiped out of existence by the ravages of disease among these animals which might have been avoided by supplying proper and healthful surroundings, and the use of common sense methods of prevention. By prevention we mean the placing of the animal in such a condition of bodily vigor as to be able to resist disease in any form, and not in doping and dosing him with mineral drugs, or deranging the stomach and bowels with doses of antimony, copperas, madder, and a thousand and one things which have killed an army of hogs, said to have died with the cholera.

Avoid all causes, so far as possible, which are likely to produce this malady. Breed from the most vigorous animals only; furnish clean, comfortable quarters and plenty of pure water; feed a well-balanced ration which will keep them growing and insure them vigorous and healthy bodies. The very essence of prevention lies in securing the highest measure of bodily health, and that method which will the most surely and naturally reach this condition is the rational course of prevention to follow.

The value of Standard Food in bringing about these essential conditions of thrift and vigor, in the prevention of disease, is almost incalculable. For it will, if used sensibly and rightly in connection with good treatment otherwise, place the animal in such a condition that he is able to successfully resist disease. It stimulates the stomach to healthy and vigorous action, and, by increasing the flow of its juices, not only secures more sus-

tenance from the ration consumed, but enables it to throw off all accumulated impurities, whose presence hinders its proper action and endangers the health of the animal. Everything depends upon the proper action of the stomach, for, when good digestion and complete assimilation are secured, pure blood and good health are assured.

The presence of intestinal worms in large quantities is a source of serious trouble among swine. The indiscriminate dosing of hogs with mineral and poisonous preparations to kill worms is an absurd and dangerous practice, and one which discloses a lack of knowledge on this subject. Any small good that can be done in this way is only temporary, for, although it removes the worms, it does not remove the cause. The true theory is this: worms are the result of a deranged condition, and not the cause. The deranged condition comes first, and worms follow as the result—not the reverse.

The regular and continued use of Standard Food restores the stomach and smaller intestines to a normal condition and healthy action, which enables them to throw off the mucus accumulation which generates worms, and in which they exist. The success of this treatment lies in removing the cause, thus disposing of it effectually.

Improper feeding is a prolific cause of disease among swine. The continued feeding of old, dry corn produces a feverish and inflammatory condition of the system, which, if allowed to continue, is likely to end in disease. Young pigs suffer more from this manner of feeding than the more mature animals; it is one of the greatest sources of disease among them, and is very likely, from its heating and inflammatory tendency, to weaken and debilitate the digestive organs and lay the foundation for disease. Old corn should be soaked for a day or two before it is fed, and accompanied by a proper ration of Standard Food. These precautions will counteract the feverish tendency and produce a cooling and loosening effect, thus preserving health and insuring growth at the same time.

The feeding with corn of sloppy articles, boiled roots, boiled oats, etc., where practical, is of value in increasing the health.

The practice of keeping hogs in one pen or field from year to year is no doubt the cause of a great deal of loss from disease among them. The hog, from instinct, seeks for a natural regulator in bilious and digestive derangements in the soil. The use of one enclosure for a long time exhausts the soil of

these natural regulators of the health of the hog, and leaves him without anything to correct the irregularities to which he is naturally subject. It can be easily seen that, if these are not supplied in some other way, he has no protection against the inroads of disease. Standard Food supplies this deficiency in the most natural manner. It stimulates the digestive organs to prompt and healthy action and corrects every tendency toward a morbid condition.

PREVENTION PLUS PROFIT.

It is a fact that, in feeding Standard Food to hogs for the prevention of disease, it actually costs nothing as a preventive. While it is putting the system of the animal in a condition to resist disease, it is making an *extra* increase in flesh and fat to much more than pay its cost.

Some farmers, who think it costs too much to feed Standard Food as a preventive, lose sight of the gain it will make in the increase of flesh. A little calculation will show them what a small extra gain in flesh will offset the cost of the Food. According to our directions for feeding, an increased gain of three or four pounds per month to each head will do this. The actual facts, however, are that, with proper use, it will not only pay for itself in extra gain produced, but return a handsome profit, so that the farmer not only gets his preventive for nothing, but has a profit thrown in.

Let us suppose that the farmer has two lots, of ten pigs each, which have been weaned when six weeks old. Let both lots have the run of the yard, and what suitable food they may require. Give one lot, in addition, say one-third of a pound of Standard Food per day, until they are five months old, and the other lot none. After that increase the Standard Food ration a little with the one lot, so that the amount consumed daily will be about one-half pound, feeding in this proportion until they are eight months old. For the next two months, feed the one lot such a ration of properly selected food as will fully meet the demands of the increased appetite caused by Standard Food. The amount of Standard Food consumed by these ten pigs should be about one pound a day during this two months. At this time the age of the pigs in each lot will be ten months. The one lot, which have had the benefit of the Standard Food ration, have been healthy and vigorous throughout. The Food has increased their digestion and assimilation, and also has increased their appetite, thus enabling them to eat a larger

amount of feed than the other lot. If their appetites have been at all times satisfied, they will weigh, at this age, 300 pounds each, and be ready for market at the top price. The other lot have had the same advantages otherwise, but no Standard Food, and will do well to weigh 225 pounds each at this age. They will not be so saleable as the other lot when placed upon the market, and will command but a normal price. This year the one lot would have sold readily at 4 cents per pound, live weight, and the other lot possibly at $3\frac{1}{2}$ cents per pound. The following plainly shows the result:

10 pigs, 300 pounds each, at 4 cents per pound.....	\$120 00
10 pigs, 225 pounds each, at $3\frac{1}{2}$ cents per pound.....	78 75
Difference in gross receipts from two lots.....	41 25
Cost of Standard Food consumed by the one lot.....	12 00
Left for profit and to pay for extra food.....	29 25

The one lot of pigs would consume 25 pounds of Standard Food in the first 100 days, 30 pounds in the next 90 days, and 40 pounds in the last 60 days. This is allowing for the omission of its use one week in every three after the first month, which is according to our directions. The total amount of Standard Food consumed would be a little less than 100 pounds, or say 10 pounds to each pig during the $8\frac{1}{2}$ months, at a cost of \$1.20 per head. The returns over the other lot would be, according to these figures, $\$4.12\frac{1}{2}$ per head, an amount which not only pays for the Standard Food and extra grain feed consumed, but leaves a handsome profit besides. Thus it will be seen that, aside from the essential element of prevention, guaranteed to every farmer who uses Standard Food according to our directions, he secures an extra return which amply repays him for the outlay.

HOW TO FEED STANDARD FOOD.

For young pigs, feed in the proportion of one pound to 30 head, once a day; for medium sized pigs, one pound to 20 head, once a day; increase this amount on fattening hogs to one pound to ten head daily. In all cases, omit the use of the Food one week in three after the first month. The Food may be fed in swill, or with grain feed, when it should be fed in troughs to prevent waste.

MANAGEMENT OF SHEEP,

All the advantages secured from feeding Standard Food to horses, cattle and swine are obtained in an equal degree when it is fed to sheep. It acts directly upon the digestive organs, thus securing healthy action of all the functions of the body, which is the first step in the prevention of disease.

Most of the diseases of sheep, except those produced by external causes, can be very satisfactorily treated by the proper use of Standard Food. Diseases of the blood, digestive and respiratory organs are directly acted upon by its use. Many of the diseases to which sheep are subject are due to local conditions, such as keeping them on low, wet lands, undue exposure in inclement weather, and careless and improper feeding.

The rational treatment, under the first of these conditions, would be to remove them to higher ground, and give local treatment to the seat of disease. This, if promptly done, is usually sufficient, when accompanied by the feeding of a proper ration of Standard Food, to build up their impaired health.

Undue exposure in inclement weather, etc., should be corrected as much as possible by providing proper shelter. No animals upon the farm will show the effects of good treatment, or make a better return from it, than sheep.

The intelligent and systematic feeding of sheep is of great importance in securing and maintaining their health. The value of variety in feed stuffs for sheep is not enough appreciated. A properly proportioned ration for sheep will amply repay the trouble in improved health alone.

Another of the important points in successful sheep farming is strict regularity in the time of feeding, and proportioning the amount of fodder to the wants of the animal. With good attention to these particulars, sheep will maintain better health and make a more profitable return on moderate keeping than on the best food fed with irregularity. A due regard to proper location, comfortable quarters, generous and regular feeding, are all essential in preventing disease among sheep. If these be carefully observed, and they be allowed a moderate ration of Standard Food, for the purpose of correcting any irregularity of condition, which is quite likely to be present, although not observed, the owner may be assured of not only prevent-

ing disease among them, but of securing the greatest development in flesh and fleece.

THE FLEECE.

One of the greatest advantages secured from the feeding of Standard Food to sheep is in increasing the growth and quality of the fleece. Good feeding improves the coat, whether it be hair or wool. No one can fail to see the favorable effect upon the hair of well fed cattle compared to those poorly fed, and also upon the wool of well fed and poorly fed sheep. This is due to the superior condition of the animal, and is particularly noticeable among animals fed a regular ration of Standard Food. Poor, ill kept sheep can not produce wool of the first quality; neither can irregularly fed animals grow an even texture of wool. Expert wool buyers are able to tell the kind of care the sheep have received by the texture of the wool examined. It will be uneven and weak in places. These inequalities show the periods of good and shiftless keeping. Regular and continued feeding of a properly compounded ration, with the addition of Standard Food according to directions, together with proper surroundings, will insure an abundant growth of fine wool of even texture. The use of Standard Food as above directed will not only increase the quantity and quality of the wool grown, but will produce an increase in flesh alone sufficient to more than pay for its use.

FEEDING FOR MUTTON.

Sheep raising, for wool alone, is not a profitable enterprise; but when sheep are jointly raised for mutton and the profits of the fleece as well, we have one of the most surely and speedily profitable branches of stock-raising. A great advantage lies in the fact that both objects can be attained at the same time in the same animal. Liberal feeding, attended with proper care and judgment in its selection, will secure a marked improvement in the fleece, while adding pounds of flesh to the carcass.

The production of mutton is more profitable than the production of beef, pound for pound, it selling usually for a larger price per pound, and having the added profit from the fleece besides.

Sheep produce a greater percentage of flesh from a given amount of feed consumed than do cattle. The use of Standard Food in the feeding of sheep yields the most satisfactory returns both in flesh, selling qualities of the animal and in quantity of fleece secured.

As we have stated before, and we repeat it here, the stomach is the most important organ in the body, for upon its proper action depends the sustenance and health of the entire body.

Standard Food creates an increased appetite, and stimulates the stomach so that the extra amount of food demanded by this increase of appetite is properly digested and assimilated. It not only does this, but its regular use will secure a greater percentage of nutriment from all of the feed consumed, the natural result of which is to materially increase the gain over and above the amount secured from ordinary feeding. This increase will much more than pay for the extra outlay incurred by its use. To recapitulate, it acts as a powerful preventive of disease, adds largely to the quantity and quality of wool, and secures an extra production of flesh to more than pay for its use.

DIRECTIONS FOR FEEDING STANDARD FOOD TO SHEEP.

Standard Food should be fed to sheep in the proportion of one pound to thirty head, daily, with a fattening ration. As a preventive of disease and for the purpose of keeping sheep in a thrifty and healthy condition, feed one pound to fifty head, daily. It should be fed with grain or in their feeding troughs. Omit its use one week in four after the first month.

CARE OF POULTRY.

The experience of successful poultry raisers makes plain the fact that, as an adjunct to the farm and barn yard, this industry is one of the most profitable if properly handled. Unfortunately, too many farmers look upon this branch of their business as something of minor importance. Facts, however, do not uphold this opinion. In the year 1883, the poultry products of the United States were greater than those of the dairy, which proves that there are possibilities in this industry which are worthy of the most careful study and attention.

Many valuable fowls are lost every year from carelessness, and there are also a great many that die from the lack of proper attention when sick. A chicken is too likely to be looked upon as a thing of so little importance that it does not seem worth while to give it any care when sick, and, as a result in many cases, the sick fowl is the cause of spreading disease among the others, and likely causing the loss of the whole flock. Exposure, careless treatment, irregular and improper feeding, cause derangements and disease just as surely among fowls as among any other creatures upon the farm. Chicken cholera, roup, gapes, diarrhœa, etc., are due almost entirely to improper care and the lack of sensible methods of prevention. Fowls should be protected from wet and cold, as well as from the extreme heat of the sun; their enclosures should be kept scrupulously clean, and plenty of pure water provided at all times. The coops should be properly ventilated.

First and foremost in the treatment of these diseases, separate the sick fowls from the well ones; disinfect the coops and drinking vessels by the use of a solution of carbolic acid; give warm, stimulating food, and mix with it a measure of Standard Food to each twelve medium-sized fowls. This treatment, when accompanied by proper feeding and comfortable shelter, may be relied upon as the most efficient in the cure of these diseases.

The prevention of disease among fowls is much more sensible than to run any risk of curing them after they become sick. Standard Food, by acting directly upon the digestive organs, which in fowls, as well as animals, is usually the seat of disease, corrects all irregularities of the system, producing rich, pure

blood, and through it a healthy condition of the entire body. If Standard Food is fed for this purpose, as we direct, and accompanied by cleanliness, proper feeding and comfortable quarters, we are borne out by years of experience in guaranteeing it as a preventive of any of the diseases common among fowls. Practical poultry raisers have demonstrated the fact that the egg product of hens can be increased from 50 to 100 per cent, by a proper selection of feed and regularity in the time of feeding. Our experience justifies us in making the positive assertion that Standard Food will, when fed regularly, with a properly selected ration of feed, increase the egg product of hens very materially.

DIRECTIONS FOR FEEDING.

A measure for feeding will be found in each box of Standard Food. Give one of these full to each twenty-five chickens every day. Increase or diminish this amount according to size. In case of disease, double the amount fed.

A good way to feed it is with meal, or with grain that has been dampened, or it may be placed in the drinking vessels with pure water.

OUR REFERENCES AND ENDORSEMENTS.

We have in our files the original signed letters of which the following are true copies. These are only a few among thousands in our possession. If the statements in them are doubted in the least we earnestly urge writing to the parties, enclosing postage for reply:

MISSOURI VALLEY, IOWA, Feb. 3, 1892.

THE F. E. SANBORN Co., Omaha:

GENTLEMEN:—Please send me one thousand pounds (1,000) of your Standard Horse and Cattle Food, in fifty pound boxes; ship March 1st.

A year ago last January I bought 1,200 pounds of it and began at once feeding it to my hogs; I followed your directions closely. I weighed my hogs every thirty days and found a uniform gain of two and one-fourth pounds per hog, per day, each, for the entire feeding time of about one hundred days; they looked smoother than usual and their coats had an oily appearance. They ate their corn better, and ate more of it. Their weight was fully 25 per cent more in proportion to their size and appearance than usual. In hauling to market those that were fed on your Food shrunk but three pounds, while those that I fed corn alone shrunk five pounds each. Last fall before I began feeding it to my present herd many of them had a cough. After a few feeds of your Food the cough entirely disappeared. While over seven hundred hogs were lost in this immediate neighborhood, I did not lose a single hog after commencing its use.

Last winter I experimented with seventy head of cattle; thirty-two were in an open lot, with no other shelter than a straw stack; their coat was smooth and more oily than usual; they gained an average of five pounds per day, each, for three and a half months; in driving to market they shrunk three per cent as against four per cent in the other lot, or one-fourth less. The forty head were what I considered a finer lot, and I kept them up just six months, in a good lot with warm sheds; fed them one-half bushel of corn a day but no Standard Food. Their gain in total pounds was just about the same in six months as that of the thirty head in three and one-half months.

This winter my chickens were taken with the cholera and began dying off rapidly; a few feeds of the Food cured them completely. Last spring I fed it to my horses while doing my spring's work; at the end of the season they had not lost a pound, nor had a cough, or any sickness, while many teams about were sick and some died.

Yours truly, C. A. Moss.

NOTE:—The following is a copy of a letter received from Q. A. Breunier, proprietor Franklin Grove Creamery:

FRANKLIN GROVE, ILL., February 9, 1892.

THE F. E. SANBORN Co., Omaha:

DEAR SIR:—By request of W. A. Fenner, General Agent, I give a few facts directly connected with my business regarding the use of your Standard Horse and Cattle Food among some of my milk men. Five of my patrons who furnished one thousand pounds of milk per

day, for a period of one month when pastures were good, began to use the Food. Although the pastures became poorer and the owners did not use any additional food, the use of Standard Horse and Cattle Food increased the flow of milk to twelve hundred pounds per day, or an increase of twenty per cent. more than obtained without its use. I wondered at the increase of milk, and made special inquiries as above stated, recording the exact facts, figures, names and dates. I found all had been using Standard Horse and Cattle Food, buying it from our local agent, Mr. Joseph Graff, and feeding it according to directions: one-twelfth of a pound twice a day to each cow.

Yours truly,

Q. A. BRECUNIER.

PRAGUE, NEB., July 1 1892.

THE F. E. SANBORN Co., Omaha:

GENTLEMEN:—About three years ago I wrote you giving my opinion on Standard Food. I had then been using it about a year on my hogs, with the best of success; but I am even better satisfied with the results which I have secured from using it since that time. I began using it solely as a preventive of disease, as I had lost nearly all my hogs in the two years previous. From my experience I am thoroughly satisfied that it will prevent disease, for in more than four years in which I have been using the Food regularly I have not lost a hog from disease. I suppose that during that time four-fifths of the farmers in this county have lost more or less hogs from disease.

I can give no definite figures on the amount of extra gain which the Food has produced, but I am sure that it has made enough extra increase in the weight of my hogs to considerably more than pay for itself. I have always been able to get top prices, and I do not believe that any one markets any better hogs, or any heavier ones, for their age than I do. I usually have about two hundred hogs on my place.

Respectfully yours,

(Signed.)

GEORGE L. HAVENS.

SABETHA, KAN., July 6, 1892

THE F. E. SANBORN Co., Omaha:

GENTLEMEN:—I have sold your Standard Horse and Cattle Food for about four years, and must say that it has given universal satisfaction, both as a blood purifier and flesh producer. I could send you testimonials from some of our best farmers that have used Horse and Cattle Food for different diseases, both for cattle, horses, and hogs. For poultry I have never heard of anything that will take the place of your Food. I don't think that you advertise Horse and Cattle Food strong enough for poultry. My sales increased one-half this spring.

E. HORTON, Dealer in Groceries, Flour and Produce.

CHERRY VALLEY, ILL., June 25, 1892.

THE F. E. SANBORN Co., Omaha:

GENTS:—I have used fifty pounds of Standard Horse and Cattle Food with the best results. I fed a cow which I had tried in vain to get in condition until I gave her this Food, after which she was in good order doubled her flow of milk. I also fed it to my other cows and got a large increase in milk. I believe it to be all that the manufacturers claim for it, and I cheerfully recommend it to all stock men. As an earnest of this have bought one hundred pounds more to-day.

J. H. KITTLE.

SALIX, IOWA, February 10, 1892.

THE F. E. SANBORN Co., Omaha:

GENTS:—I have used your Standard Horse and Cattle Food about two years. Within the last year I have fed over a ton of it with the best of results. At present in a herd of over three hundred there are not ten poor ones. I find that they are all in better condition than under the old method of feeding, and they weigh heavier than ordinary hogs of the same size. I killed one recently that looked as though he would weigh about one hundred and twenty pounds, and he weighed 150 pounds. I am thoroughly satisfied that it pays well to feed it regularly all the year round, and would not think of raising hogs without it. I heartily recommend it to all hog raisers. I find it an excellent thing for horses also.

T. BRUGUIER.

MOBILE, ALABAMA, January 1, 1892.

We have sold and used ourselves nearly two thousand (2,000) pounds of Standard Food. It has given general satisfaction to our customers. In our own stables it has been of great benefit. We use it constantly among our stock, and find it invaluable as a tonic. We have brought to this market quite a number of western horses and mules since we have had the Food, and have not had a horse have distemper while using it. We consider it a great preventive of pink eye, influenza, etc. We could hardly get along without it.

Yours truly,

(Signed.)

PETTUS & MENEFFEE.

MENOMONIE, WIS., July 6, 1892.

THE F. E. SANBORN Co., Omaha,

GENTLEMEN:—I have used your Horse and Cattle Food for some time and find it to be a valuable preparation for diseased and debilitated stock, and that it will do all and more than you claim. It is an excellent flesh producer. I can honestly say it is the best thing I have ever used for stock, and I have used many kinds.

Yours respectfully, JOHN BRITZMANN.

FRANKLIN GROVE, ILL.

GENTLEMEN:—We have used Standard Horse and Cattle Food to cure and prevent disease and to produce flesh, and find it all that the manufacturers guarantee it to be.

A. R. WHITNEY,	SAMUEL DYSART,
HARVEY SPANGLER,	HENRY HERBST,
A. M. CARPENTER,	JOHN GRONEWOLD,
J. E. LAHMAN,	J. F. VANCE,
U. GRANT DYSART,	A. REINHART,
HENRY GROSS,	GEO. WINKFIELD,
C. D. HUSSEY,	S. BUSINGA.

CORNELL ILLINOIS, May 18, 1892.

THE F. E. SANBORN Co., Omaha:

GENTLEMEN:—Allow me to write a few lines to acknowledge to you that I have been using your Horse and Cattle Food in my practice for some time, and in every case where it was given according to my directions, it proved to be an excellent remedy in all cases of anorexia, "loss of appetite," strangles, urinary troubles, and in cases of convalescence. My patrons are loud in its praise as a flesh producer and a

reviver of spirits, also in cases of derangement of stomach and bowels. I shall endeavor to keep a good supply on hand. May the good news be spread far and wide. I am, sirs, yours very respectfully,

J. J. VANDEREE, V. S.

SEDALIA, MISSOURI, January 2, 1892.

THE F. E. SANBORN CO.:

GENTS:—Yours regarding Standard Horse and Cattle Food received. In reply will say that in our transfer department we have been using the Horse and Cattle Food for over a year; stock all look fine and fat. Have not had one case of colic or distemper in a year, or a veterinary account of any kind. Veterinary bill for colic and distemper for any year before we used the Food was fifty dollars, mostly for colic. In the mule departments the results are the same. It is death to horse doctors but of incalculable value to us. Yours truly,

HINSDALE & MENEFE.

P. S.—We have handled over three thousand mules since we commenced to use the Food, and not one case of distemper or colic since that time.

H. & M.

BLUE MOUND, KAN., March 8, 1892

THE F. E. SANBORN Co., Omaha:

GENTS:—Through the influence of your agent I was induced to try your Food, and found it has no equal among all kind of stock. I have been using it for two years and have never been without it. I know that it pays more than it cost in the way of feed, besides keeping your stock in a good, healthy condition. I have used it among my hogs when they had the cholera and found it a valuable remedy.

J. B. FINDLY,

Proprietor Victor Mills.

A private letter to Mr. F. G. Morgan, Rockford, Ill., from Hon. Samuel Dysart, ex-President Illinois State Board of Agriculture and member of Illinois Board of World's Fair Commissioners:

ILLINOIS BOARD OF WORLD'S FAIR COMMISSIONERS.

SAMUEL DYSART, COMMISSIONER,

FRANKLYN GROVE, ILL, Feb., 29, 1892.

F. G. MORGAN, AGENT STANDARD FOOD, Rockford, Ill:

DEAR SIR:—Your letter of 27th inst. at hand. I have used Standard Horse and Cattle Food for the past two years with good success in every case. I think it a valuable preventive of disease in domestic animals. It has been used largely among the farmers in this vicinity and is *praised by all*.

Many testimonials have been written in this locality in its favor.

(Signed) SAMUEL DYSART.

WHITING, IOWA, Feb. 8, 1892.

THE F. E. SANBORN Co., Omaha :

I have used Standard Horse and Cattle Food as a preventive of cholera in my hogs, for about two years, with perfectly satisfactory results. Since beginning its use I have not lost any hogs by disease, although on the adjoining farms on each side of me many hogs died of disease. Until using Standard Food I was always losing hogs by the cholera, and the year previous to commencing feeding it I lost all but

seven of my herd of one hundred and forty. My experience forces me to believe that Standard Food does prevent cholera, and that it has many times paid for itself in the hogs it has saved. I would not want to try to raise hogs without it. My losses by cholera in years past, previous to feeding the Food, had been so heavy that my herd was gradually growing less; but I am now, after two years' use of it, keeping a larger herd than I have had in years.

J. R. FOLWELL.

ELBURN, ILL., July 16, 1892.

THE F. E. SANBORN CO., Omaha:

DEAR SIR:—I have fed your Standard Horse and Cattle Food to my milch cows and to my horses with very satisfactory results, and it does all you claim for it.

My cows were not doing well and I was induced to buy some of your Standard Food by your agents here, C. H. & E. O. Hills, and feed it to my cows. It restored their appetite and put them in good health and condition. I have continued its use ever since early last winter and find it profitable to feed all the time.

I consider and believe every one that will feed it to their stock will get full value received.

I have no disease of any kind around my stock since commencing the use of Standard Food.

Yours truly,

JOHN JACOBSON.

BLAIR, NEB., July, 4, 1892.

THE F. E. SANBORN CO., Omaha:

In answer to your letter, I will say that I have used Standard Horse and Cattle Food for the last six years. It was recommended to me by Wulff Bros. I use it because it prevents hog cholera and is a flesh producing article. It is good for horses in the spring of the year; it makes them shed in good shape.

Yours respectfully,

JOHN BENTROP.

SIOUX CITY, IOWA, December 23, 1891.

THE F. E. SANBORN CO., Omaha:

GENTS:—It certainly gives me pleasure to add my testimony to the merits of your Standard Horse and Cattle Food. I have used it with perfect success in feeding horses, cattle and poultry. My experience demonstrates that it does even more than you claim for it. As a feed for horses, I have found it to be a great blood purifier, an excellent tonic and a sure conditioner. For coughs, colds, etc., I have never found anything equal to it. I feed it often to my herd of Jersey cattle, and can truthfully say that it acts like a charm, keeps them in good condition and increases the flow of milk. I feed it to my poultry and never have any sick or drooping fowls, and my hens lay well during the fall and winter, which they never did until I commenced feeding them your Food.

I will simply say in conclusion that I have experimented with a great many condition powders and other preparations put upon the market as a cure all, but never yet found anything to compare with your Horse and Cattle Food.

I shall continue to use the Standard Horse and Cattle Food, for experience has proven to me that there is nothing upon the market to equal it.

Yours respectfully,

C. M. ROBINSON.

Daily Times; also Secretary Sioux City Driving Park Ass'n.

BLAIR, NEB., July 5, 1892.

THE F. E. SANBORN Co., Omaha:

I have used Standard Horse and Cattle Food for my stock continually for the last three or four years. It makes flesh; it increases milk and it prevents disease, for I have not had a sick hog on the place since I first used it on the place for that purpose.

Yours respectfully, P. E. WULFF.

STORY CITY, IOWA, July 2, 1892.

THE F. E. SANBORN Co.:

DEAR SIR:—We heartily endorse your claims of the merits of Standard Horse and Cattle Food, and are more than satisfied with the success which we have had in handling it, since we began in 1888, and with the satisfaction it gives our customers; for we know of no one who has given it a fair trial that is not a steady customer, and it is much better than any condition powder as a medicinal agent and cheaper than oil cake as a flesh producer. We believe it is the Standard Food for hogs, cattle and horses, and our patrons are high in its praise.

Very respectfully yours, HOLM BROTHERS,
Dealers in Harness and Saddlery.

SMARTVILLE, NEBRASKA.

THE F. E. SANBORN Co., Omaha:

GENTLEMEN:—My chickens were dying of cholera and I bought one box of your Horse and Cattle Food. After feeding a small quantity they quit dying, and all are now well. Several of my neighbors have tried it with the same results.

Yours truly,
CHAS. ROUP.

GUERNSEY, IOWA, April 8, 1892.

THE F. E. SANBORN Co., Omaha:

DEAR SIR:—Your favor of the first inst. at hand. In reply will say that I can give you no tabulated account of the result of your Stock Food, but I fed it to my cattle that I was feeding and they commenced eating better right away, and did better right along while I fed them. I fed the Food once a day, and the result was entirely satisfactory, as the cattle were right up to the feed trough each time, ready for their ration.

Yours respectfully, J. C. KINNIE.

MILFORD, ILL., July 1, 1892.

THE F. E. SANBORN Co., Omaha:

GENTLEMEN:—I have used your Standard Horse and Cattle Food and I can say that it is the best patent Food that I have ever used. I fed it to a carload of cattle last winter, and they gained $3\frac{1}{2}$ pounds each per day. I would not be without the Standard Horse and Cattle Food for five times the cost of it. For horses it has no equal. It is a valuable Food for both cattle, horses and hogs. Yours truly,

C. M. FRYE.

SHERWOOD, O., June 6, 1892.

I have been selling Standard Food for two years, and have never had a customer dissatisfied with it. On the contrary it has done all that it is recommended to do in every instance

(Signed) H. F. MILLER,
Dealer in General Merchandise.

MARSHALL, MISSOURI, April 30, 1892.

THE F. E. SANBORN Co., Omaha:

I have used your Horse and Cattle Food for the past year and am very well pleased with it. It has accomplished wonders in several instances.

Very truly,
Proprietor Peabody Herd Shorthorns and Berkshires.

J. K. KING.

AUSEON, O., May 27, 1892.

One of my customers, Mr. Jerry Williams, had some hogs sick with cholera; they were down on their backs and would not eat, so he had to drench them with Standard Food mixed in swill. Every hog recovered, and Mr. Williams counts that \$2.00 worth of Standard Food saved \$300 worth of hogs.

(Signed) GEO. SCHLETZ,
Dealer in Flour, Feed and Seeds.

MONROEVILLE, O., July 1, 1892.

THE F. E. SANBORN Co., Omaha:

GENTLEMEN:—I have used the Standard Horse and Cattle Food, sold by R. Zippel, agent, for about two years, and found it to be the best thing for stock I have used, and I do not think it can be equalled for hogs and horses for fattening purposes and a prevention against disease.

Yours truly, ANTON ERF.

FRANKLIN GROVE, ILL., Sept. 25, 1891.

JOSEPH GRAFF, ESQ.:

In these days of humbugs, trial is the only evidence of merit. I bought of you in May last a box of the Standard Horse and Cattle Food and fed it to my poultry, comprising chickens, turkeys and geese, and I have never had so fine a growth or such beautiful plumage. No sickness of any kind has appeared among them, although there are between five and six hundred fowls in the lot. An ounce of prevention is better than a pound of cure, and I give much credit to the Food. I cannot say that it will cure all the diseases which poultry are subject to, because I have had none to test it, but I do believe it will prevent disease, which is better.

Let the incredulous come and see my fowls and judge for themselves.

Yours truly,
(Signed.) SAMUEL DYSART.

NOTE—The above is a copy of a letter from Hon. Samuel Dysart, ex-President of the Illinois State Board of Agriculture and an extensive farmer and practical poultry raiser of Franklin Grove, Illinois. It was written unsolicited to Mr. Joseph Graff, our local agent at that place.

Special Information Regarding Standard Food.

Standard Food is put up with the view of suiting the convenience of all classes of consumers. It is put up in neat, durable wooden boxes of 7 pounds, 25 pounds, 50 pounds and 100 pounds each.

The Food Measure.

Each box contains a tin cup to be used in measuring the Food in feeding. It holds when filled full one-tenth of a pound of Standard Food, which is an average feed for a thousand pound animal. This makes Standard Food cheaper per feed to the consumer than any other stock food.

PRICES.

7 Pound Boxes	\$1.00	50 Pound Boxes	\$6.00
25 Pound Boxes	3.00	100 Pound Boxes	12.00

The above are minimum prices for Standard Food in these quantities, and govern except where freight rates necessitate a proportionate advance.

LIBERAL DISCOUNTS TO LARGE CONSUMERS.

CORRESPONDENCE.

All inquiries from dealers or consumers will be attended to promptly, and the best information at our command cheerfully furnished. All correspondence should be addressed to The F. E. Sanborn Co., Omaha, Neb.

OUR GUARANTEE.

We guarantee Standard Horse and Cattle Food, when fed according to our directions, to fulfill the following requirements, or money refunded:

FIRST. To produce sufficient extra flesh on cattle, hogs and sheep in excess of what can be secured by the ordinary methods of feeding, to realize a profit over and above the cost of the Food.

SECOND. To increase the quantity and quality of milk and the general health and condition of cows, over and above what can be secured by the ordinary methods of feeding, sufficient to more than pay its cost.

THIRD. To prevent cholera and other diseases among hogs when used as directed as a preventive.

FOURTH. To prevent and cure all diseases among other farm animals as set forth in this book wherever Standard Food has been recommended specifically.

FIFTH. To prevent and cure all diseases common among poultry.

SIXTH. To expel worms from all farm animals when fed in the amounts and for the time specified in our directions.

Our regular agents and all parties selling Standard Food are authorized to give this guarantee, which will be honored by this company in any case where it can be fairly shown that the results secured are not equal to our representations.

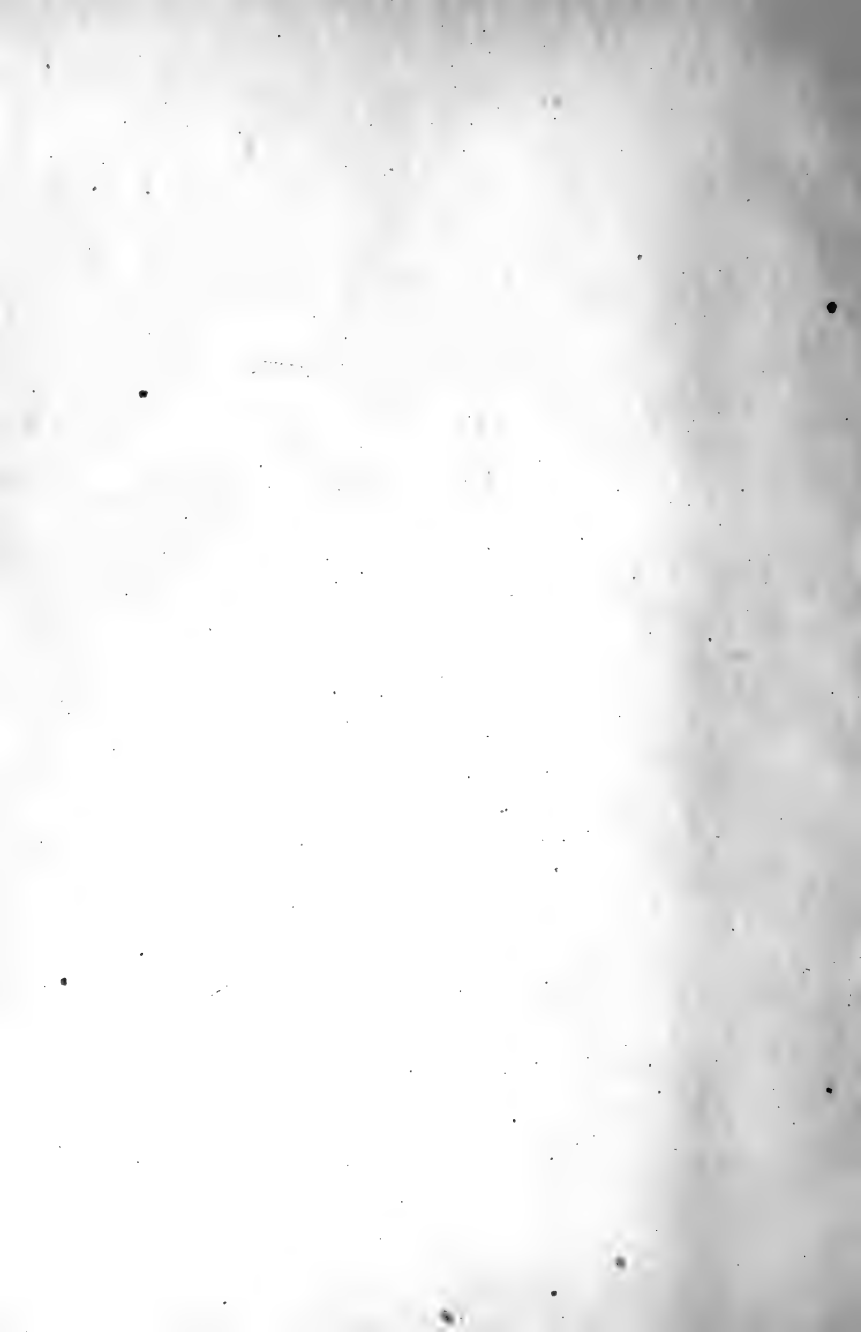
THE F. E. SANBORN COMPANY, OMAHA.

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