

The Kansas FARMER meets with a hearty welcome, and the intelligent and practical hard workers in agriculture, who farm for business and an income, are looking up to the fact that it is necessary for them to lend their support to a good agricultural journal; it gives them in their interest in things they have long considered of minor importance, leads them to the only possible channel of changing thoughts and experiences; combines them into an association where they may be known in the columns of their journal, and gain knowledge from the experiences of each other.

FARMER BALANCE OF THE YEAR FOR 1901

Sent postage paid to any address.

Literary and Domestic.

EDITED BY MRS. M. W. HUDSON.

GOLD.

To purchase Heaven has gold the power?
Can gold remove the mortal hour?
In life, can love be bought with gold?
Are friendship's pleasures to be sold?

No! all that's worth a wish, a thought,
Fair virtue gives, unbought, unthought,
Cease, then, on trash thy hope to bind;
Let nobler views engage the mind.

—Johnson.

TRIALS.

Even in the days of Winter,
When the snow drifts whiten the hill,
Some birds in the air will flutter,
And warble to cheer us still;
So, if we would hark to the music,
Some hope with a starry wing,
In the days of our darkest sorrow,
Will sit in the heart and sing.

—Phoebe Cary.

LOVE.

Mysterious Love! uncertain treasure,
Hast thou more of pain or pleasure?
Endless torments dwell about thee,
Yet who would live, and live without thee?

—Addison.

THE RAINBOW.

Be thou the rainbow to the storms of life!
The evening beam that smiles the clouds away,
And tints to-morrow with prophetic ray.

—Byron.

THE OLD, OLD STORY.

BY MARY W. HUDSON.

This story will be continued next week.

SAVED BY A FLASH OF LIGHTNING.

My name is Hunt. Yes, sir; Anthony Hunt. I am a settler and drover on this Western prairie. Wilds? Yes, sir; it's little else than wilds now, but you should have seen it when I and my wife first moved up here. There was not a house within eight miles. Even now there are not many neighbors; but those we have are downright good ones. To appreciate your neighbors as you ought, sir, you must live in these lonely places, so far removed from the haunts of man.

What I am about to tell of happened ten years ago. I was going to the distant town, or settlement, to sell some fifty head of cattle—fine creatures, sir, as every one saw. The journey was a more arduous one than it is now; and my wife had always plenty of commissions to charge me with in the shape of dry goods and groceries and such like things.

Our youngest child was a sweet little gentle thing, who had been named after her aunt, Dorothy. We called the child Dolly. This time my commission included one for her—a doll. She had never had a real doll; that is, a bought doll; only the rag doll her mother made for her. For some days before my departure the child could talk of nothing else—or we either, for the matter of that—for she was a great pet, the darling of us all. It was to be a big, big doll, with golden hair and blue eyes. I shall never forget the child's words at starting, as she ran after me to the gate, or the pretty picture she made. There are some children sweeter and prettier than others, sir, as you can't but have noticed, and Dolly was such a one.

"A very great big doll, please, daddy," she called out after me; "and please bring it very soon."

I turned to nod a yes to her as she stood in her clean, white-brown pinafore against the gate, her nut-brown hair falling in curls about her neck, and the light breeze stirring them.

"A brave doll," I answered, "for my little one—almost as big as Dolly."

Nobody would believe, I dare say, how full my thoughts were of that promised doll, as I rode along, or what a nice one I meant to buy. It was not often I spent money in what my good, thrifty wife would have called waste; but Dolly was Dolly, and I meant to do it now.

The cattle sold, I went about my purchases, and soon had no end of parcels to be packed in the saddle-bags. Tea, sugar, rice, candles—but I need not weary you, sir, with telling of them, together with the calves for shirts and nightgowns, and the delicate for the children's new frocks. Last of all I went about the doll—and found a beauty. It was not as big as Dolly, or half as big; but it had flaxen curls and sky-blue eyes; and by dint of pulling a wire you could open or shut the eyes at will.

"Do it up carefully," I said to the store-keeper. "My little daughter would cry sadly if any harm came to it."

The day was pretty well ended before all my work was done; and just for a moment or two I hesitated whether I should not stay in the town and start for home in the morning. It would have been the more prudent course. But I thought of poor Dolly's anxiety to get her treasure, and my own happiness in watching the rapture in her delighted eyes. So with my parcels packed in the best way they could be, I mounted my horse and started.

It was as good and steady a horse as you ever rode, sir; but might began to set in before I was well a mile away from the town; it seemed as if it were going to be an ugly night, too. Again the thought struck me—should I turn back and wait till morning? I had the price of the cattle, you see, sir, in my breast pocket; and robberies, aye, and murders also, were not quite unknown things in the prairie. But I had my brace of sure pistols with me, and decided to press onward.

The night came on as dark as pitch, and part of the way my road would be pitch dark besides. But on that score I had no fear; I knew the road well, every inch of it, though I could not ride so fast as I might have done in the light. I was about six miles from home I suppose, and I knew the time must be close upon midnight when the storm which had been brewing broke. The thunder roared, the rain fell in torrents; the best I could do was to press onward in it.

All at once, as I rode on, a cry startled me; a faint, wailing sound, like the cry of a child. Reining up, I sat still and listened. Had I been mistaken? No, there it was again. But in what direction I could not tell. I couldn't see a thing. It was, as I have said, as dark as pitch. Getting off my horse I felt about, but could find nothing. And while I was seeking the cry came again—the faint wailing of a child in pain. Then I began to wonder. I am not superstitious, but I asked myself how it was possible that a child could be out on prairie at such an hour and in such a night. No; a real child it could not be.

Upon that came another thought—one less welcome: Was it a trap to hinder me on my way and ensnare me? There might be midnight robbers who would easily hear of my almost certain ride home that night and of the money I should have about me.

I don't think, sir, I am more timid than other people; not as much so, perhaps, as some; but I confess the idea made me uneasy. My best plan was to ride on as fast as I could, and get out of the mystery into safe quarters. Just here was about the darkest bit of road in all the route. Mounting my horse, I was about to urge him on, when the cry came again. It did sound like a child's; the plaintive wailing of a child nearly exhausted.

"God guide me!" I said, undecided what to do. And as I sat another moment listening, I once more heard the cry, fainter and more faint. I threw myself off my horse with an exclamation.

"Be it ghost or be it robber, Anthony Hunt is not one to abandon a child to die without trying to save it."

But how was I to save it?—The more I searched about, the less could my hands light on anything save the sloppy earth. The voice that I heard now, as I had no guide from the darkness, all my ears alert, a flood of sheet lightning suddenly illumined the plain. At a little distance just beyond a kind of ridge or grassy hill I caught a glimpse of something white. It was dark again in a moment, but I made my way with unerring instinct. Soon enough, there lay a poor little child. Whether boy or girl I could not tell. It seemed to be three parts insensibility now, as I took it up, dripping with wet, from the sloppy earth.

"My poor little thing!" I said as I hushed it to me. "We'll go and find mamma. You are all safe now."

And, in answer, the child just put out its feeble hand, moaned once and nestled close to me.

With the child hushed to my breast I rode on. Its perfect silence showed me that it slept. And, sir, I thank God, that he had let me save it, and I thought how grateful some poor mother would be! But I was full of wonder for all that, wondering what extraordinary fate had taken any young child to that solitary spot.

Getting in sight of home, I saw all the wind-drawn lights. Dora had done it for me, I thought, to guide me home in safety through the darkness. But presently I knew something must be the matter, for the very few neighbors we had, were collected there. My heart stood still with fear. I thought of some calamity to one or other of the children. I had saved a like one from perishing, but what might not have happened to my own?

Hardly daring to lift the latch, while my poor tired horse stood still and mute outside, I went slowly in, the child in my arms covered over with the flap of my coat. My wife was weeping bitterly.

"What's amiss?" I asked in a faint voice. And it seemed that a whole chorus of voices answered me.

"Dolly's lost."

Dolly lost! Just for a moment my heart turned sick. Then some instinct like a ray of light and hope, seized upon me. Pulling the coat off the face of the child I held, I lifted the little sleeping thing to the light, and saw Dolly!

Yes, sir. The child I had saved was no other than my own—my little Dolly. And I knew that God's good angels had guided me to save her, and that the first flash of the summer lightning had shown her just at the right moment to show me where she lay. It was her white sunbonnet that had caught my eye. My darling it was, and none other, that I had picked up on the drenched road.

Dolly, anxious for her doll, had wandered out unseen to meet me in the afternoon. For some hours she was not missed. It chanced that my two elder girls had gone over to our nearest neighbors, and my wife, missing the child just afterwards, took it for granted she was with them. The little one had come on and on, until night and the storm overtook her, when she fell down frightened and utterly exhausted. I thanked Heaven aloud before them all, sir, as I said that none but God and his holy angels had guided me to her. It's not much of a story to listen to, sir, I am aware of that. But I often think of it in the long nights, lying awake; and I ask myself how I could bear to live on now, had I run away from the poor little girl in the road, hardly louder than a squirrel's chirp, and left my child to die.

Yes, sir, you are right; that's Dolly out yonder with her mother, picking fruit; the little trim light figure in pink—with just the same sort of white sunbonnet on her head that she wore that night ten years ago. She is a girl that was worth caring, sir, though I say it; and God knows that, as long as my life lasts I shall be thankful that I came on home that night instead of staying in the town.

TWO SIDES OF ONE CANVAS.

BY WENDELL PHILLIPS.

One beautiful afternoon in August, there came to me the heart-broken wife of a State prison convict. We tried to plan for his pardon and restoration to home and the world. It was a sad case. He was the only surviving son of a very noble man—one who had lived only to serve the poor, the tempted and the criminal. All he had, all he was, he gave unreservedly to help thieves and drunkards. His house was their home; his name their ball to save them from prison; his reward their reformation. It was a happy hour to hear him tell of the hundreds he had shielded from the contamination and evil example of prisons, and of the large proportion he had good reason to believe permanently saved. Out of hundreds—yes, thousands—only two left him to pay their bail, forgotten by neglect to show themselves in court according to agreement—only two!

Bred under such a roof, the son started in life with a generous heart, noble dreams and high purposes. Ten years of prosperity, fairly earned by energy, industry and character, ended in bankruptcy, as is often the case in our risky, changing trade; then came a struggle for business, for bread—temptation—despair—intemperance. He could not safely pass the open doors that tempted crime. How hard his wife wrought and struggled to shield him from indulgence, and then shield him from exposure! How long wife, sister, and friends labored to avert conviction and the State prison! "I would spare him gladly," wrote the prosecuting attorney, "if he would stop drinking. He shall never go to prison if he will be a sober, honest man. But all this wretchedness and crime comes from rum."

Manfully did the young man struggle to resist the appetite. Again and again did he promise, and keep his promise perhaps a month, then fall. He could not walk the street and earn his bread soberly while so many open doors—opened by men who sought to coin gold out of their neighbors' woes—lured him to indulgence. So, rightfully, the State pressed on, and he went to prison. An honored man disgraced, a loving home broken up, a wide circle of kindred sorely pained, a worthy, well-meaning man wrecked. Sorrow and crime "all come of rum," says the keen-sighted lawyer.

As I parted from the sad wife on my doorstep, I looked beyond and close by the laughing sea stood a handsome cottage.

The grounds were laid out expensively and with great taste. Over the broad piazza hung lastly an Eastern hammock, while all around were richly painted chairs and longues of very easy and tempting form. Overhead were quaint vases of beautiful flowers, and the delicious lawn was bordered with them. On the lawn itself gayly-dressed women laughed merrily over croquet, and noisy children played near. A span of superb horses pawed the earth impatiently at the gate, while gay salutations passed between the croquet players and the fashionable equipages that reeled by.

It was a comfortable home as well as a luxurious one. Nature, taste and wealth had done their best. It was a scene of beauty, comfort, taste, luxury and wealth. All came from rum. Silks and diamonds, flowers and equipage, stately roof and costly attendance, all came from rum. The owner was one who, in a great city, coined his gold out of the vices of his fellow men.

To me it was a dissolving view. I lost sight of the gay woman, the fashionable children, the impatient horses, the ocean rolling up to the lawn; I saw instead the pale convict in his cell, his feet by nine; the sad wife going from judge to attorney, from court to Governor's Council, begging for mercy for her over-tempted husband. I heard above the children's noise, the croquet laugh, and the surf waves, that lawyer's stern remark for excepting the full penalty of the law—all this comes from rum.

"Wee unto him that giveth his neighbor drink. Wee unto him that buildeth his house by unrighteousness and his chambers by wrong, for the stone shall cry out of the wall and the beam out of the timber shall answer it."

EXTRACTS FROM THE JUNE FASHIONS.

Light blue is Mrs. Hayes' favorite color, and the White House will be so furnished.

The trimming of some of the small checked silks is a revival of an old and favorite method. It consists of a plaited ruching, composed of the two shades of color, in plain silks, the light or white one being placed underneath and projecting very slightly beyond the other. The edges are notched very plainly. A new idea in the making up of handsome dresses, applied recently to a black and black and white armor, consists of a Princess back, with fan-shaped train, and basque front, confined by the pleated "Hortense" band, and buckle. Newest collarettes around, with a standing ruffle of lace fronting a double plaiting of crepe. These are very soft and pretty, made in all lace, Valenciennes or duchess, but simple ruffles with bows are very convenient wear for summer.

The broad brimmed hats turned up high on the side, which we sent abroad last year, have returned to us emphasized, as Louis Fourteenth styles, and are very striking for tall beauties, who can exhibit the long, sweeping plume to advantage. Miss Fanny Davenport wears one as the "Princess Royal," and has another in all black for the street.

The white figured Swiss muslins are utilized this season for morning wrappers, and look very pretty trimmed with Smyrna lace and pale pink or blue ribbon; but white Princess polonaises for afternoon wear must be made of thicker material, and the new satin striped and damasked linen and figures are utilized for this and other purposes, and may be trimmed with flat, white braid, or Madeira embroidery, with velvet bow, if, as is often the case at the seaside or in localities, the skirt is of velvet. There is one thing to be said in regard to a white polonaise of this description, and that is, it is economical. Two of them well made and prettily trimmed with needle work would go a long way towards furnishing a summer wardrobe. One condition of their good appearance, however, is that the bows which trim them shall match the brown, navy blue, or black skirt over which they are worn, and that these bows shall be confined to one on each of the sleeves, one on the pocket, and one on the throat. The ornamentation down the line of opening, whether it be straight down, or across must be effected by buttons in one, or one or more rows. The prejudice in favor of dark suits for churches and street wear renders the black grenadine costumes of the utmost importance, in summer it takes the place of black silk, and is useful on an infinite variety of occasions and in an infinite variety of ways.

RECIPES.

RAILROAD CAKE.—Break two eggs into a teacup, beat well, then fill the cup with sweet cream, one cup of sugar, one and one-half cups of flour, one teaspoonful of cream of tartar, and one-half teaspoonful of soda.

TO BAKE BREAD.—Lay the meat on some sticks in a dripping pan or other vessel, so that it will not touch the water which it is necessary to have in the bottom. Season with salt and pepper, and put in the oven three or four hours before it is wanted for the table.

Baste it often with the water in the bottom of the pan, pouring in boiling water as often as it gets low. Tough pieces of beef are best cooked by steaming an hour and a half, and then basting as we have described.

Beware of vinegar. A great deal of it is rank poison. The Washington Board of Health, after sampling specimens, says: When we think that oil of vitriol (sulphuric acid) can be bought at five cents a pound, and that a pound of said acid would render a barrel of fluid as acid as the strongest vinegar the wonder will cease that it is sold cheap. This, therefore, is a fraud upon commerce and a dangerous substitute for vinegar.

TO COOK OYSTER PLANT. Scrape and wash it; boil it in water, with a little salt added; when soft cut it in pieces and fry in butter, or else serve hot without frying, but with drawn butter; you can also mash them and form into cakes and brown in butter; it will turn black if exposed to the air after scraping or when it gets cold.

POTATO PUFF.—Mashed potatoes, two cups full; melted butter, two tablespoonfuls. Work well together, and add milk, one cupful, and two well-beaten eggs. If the potato was not sufficiently seasoned for the table, salt will be required. Bake in a quick oven until the top is a light brown.



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The SYMPTOMS of Liver Complaint are a bitter or bad taste in the mouth; Pain in the back, Sides or Joints, often mistaken for Rheumatism; SOUR STOMACH; Loss of Appetite; Bowels alternately costive and lax; Headache; Loss of memory, with a painful sensation of having failed to do something which ought to have been done; DEBILITY, LOW SPIRITS, a thick yellow appearance of the Skin and Eyes, a dry Cough often mistaken for Consumption.

Sometimes many of these symptoms attend the disease, at others very few; but the Liver, the largest organ in the body is generally the seat of the disease, and if not Regulated in time, great suffering, wretchedness and DEATH will ensue. I can recommend as an efficacious remedy for disease of the Liver, Heartburn and Dyspepsia, Simmons' Liver Regulator, but none of them gave us more than temporary relief, but the Regulator not only relieved, but cured us."—Ed. TELEGRAPH AND MASSACHUSETTS, MAcon GA.

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"AGRICULTURE DEMANDS RECOGNITION IN THE HALLS OF LEGISLATION."

The *American Cultivator* sums up, from the Treasury statistics, the exports of agricultural products, for the years 1875 and 1876, as follows:

	1875.	1876.
Live animals.....	18,339,471	23,423,043
Breaststuffs.....	133,684,497	131,025,740
Cotton (unmanufactured).....	194,297,323	187,469,425
Fruits.....	1,097,380	1,255,384
Hides and skins.....	9,116,153	9,004,137
Oil-cake.....	5,584,295	5,961,940
Meats.....	43,483,977	42,156,223
Oil-cake.....	14,074,265	14,770,732
Butter and cheese.....	28,764,372	27,108,534
Lard.....	967,633	1,050,748
Vegetables.....	1,124,398	2,912,405
Seeds.....	2,767,106	2,940,053
Tallow.....	16,364,450	23,051,255
Tobacco, leaf.....		
	\$429,329,224	\$484,403,615

and adds, that these have been the nation's dependence in paying foreign debts and improving and maintaining its credit abroad; and concludes by asking whether, with this magnificent exhibit of actual results, there is any inconsistency in the demand of agriculture for recognition in the halls of legislation, in the expectation of a nation's fostering care, in a judicious outlay for its encouragement and development? And yet we are not only refused this fostering care by judicious outlay, but the most important interests of agriculture as connected with our commercial regulations are intrusted to those who, for want of information in regard to these interests, are wholly incompetent to deal with them. Take the case of the Treasury regulations in reference to the importation of cattle and other live stock.

In the year 1875, on account of the prevalence of foot and mouth disease, etc., in Great Britain, the importation of cattle was prohibited. But, early in the year 1876, parties who were influential with the Treasury officials, desiring to import a lot of blooded cattle, had little difficulty in procuring such a modification of these regulations as would meet the case. And it is a fact full of significance, as illustrating the manner in which our government deals with such questions, that the first information the farmers and stock breeders of America had in regard to the modification being urged upon the Treasury Department, came from an *English stock journal*! We protested against the modification, and had the objections brought to the attention of the Secretary by a senator of high character and influence. This spring, in view of the prevalence of the foot and mouth disease, the pleuro-pneumonia and the still more dangerous and fatal cattle plague *rinderpest* in Great Britain, we have renewed the protest. What has the government done? The latest information we have on the subject is contained in a letter addressed to us from the Treasury Department, of the date of March 26th, as follows:

In reply to your letter dated the 21st inst., reminding against the importation of blooded stock (not rinderpest) was not confined to blooded stock, on the ground that it may be affected with contagious or infectious diseases, you are informed that on the 16th of March last, this department authorized such importations, when accompanied by a consular certificate of non-infection. So far as now advised, the Department does not deem it advisable to modify the instruction then given.

Respectfully,
H. J. FRENCH,
Assistant Secretary.

We had shown, in the discussion of this matter last year, that the most thorough and careful inspection by competent professional men could not detect the infection in its latent form, and that, therefore, these inspections were not to be relied upon, even at the port of debarkation, while at the port of shipment they were of no value whatever. In regard to this, all the authorities in Great Britain agree. What then shall we say of the folly of depending upon the certificate of a consul as to the appearance of the stock at the port of embarkation? We pointed out that the effect of this modification was practically to remove all restrictions from the importation of cattle from Great Britain, because—

1st. No cattle other than thoroughbreds were, or had been, imported; and,

2ndly. Parties interested would never ship stock in England with a view to their use or sale in this country, that were known to be diseased. It is protection against the lurking and latent infection that is wanted.

In a circular from the Treasury Department, issued upon the breaking out of the rinderpest in Great Britain, it is stated that blooded stock coming from the countries named may be admitted when accompanied by a consular certificate of non-infection, as authorized by the Department's letter of the 16th of March last, it being presumed that such stock is selected with care, and that it would not be taken from herds which are infected with the diseases mentioned.

It seems incredible that interests so important should be intrusted to officials having so little information in regard to them! If what is here said as to the care with which this stock is selected, etc., be true, then why require the consular certificate of non-infection? But the testimony of all medical men, and others who have had experience in handling stock infected with these diseases, is that no amount of skill and care in selecting is a sufficient protection against the lurking infection; that, in fact, the rinderpest frequently breaks out in herds that have not been exposed, and in neighborhoods where no diseased cattle had been taken—the infection being carried by other stock, or, possibly in the litter with which diseased animals had been bedded. But a sufficient and most conclusive answer to this argument in favor of a most unwelcome regulation, adopted in the first place in ignorance of the subject with which the department was dealing, and from which it has not now the courage to recede, is the fact that all these diseases have been brought across the ocean by the importation of blooded stock, notwithstanding all the care that is assumed to be exercised in the premises. And, for this reason, the authorities in the Canadian Dominion prohibited the importation of cattle from Great Britain, as well as from other European countries. Meanwhile the government of the United States, whose people have a much larger interest in preserving the health of their live stock, especially their cattle, than the people of any other country in the world, are advised by the Treasury letter that, "so far as now advised, the Department does not deem it advisable to modify the instruction then given."

There is reason to hope that we may escape the threatened danger; because the prices realized from blooded stock have been too low, as compared with prices in England, to encourage importations, and, so far as we are advised, none are contemplated. It has therefore turned out as we predicted last year, that prohibition, which was the plain duty of the government, would have been no detriment whatever to our live stock interests, nor occasioned the slightest inconvenience to legitimate breeders.

To the National government our farmers must look as the only adequate authority, not only to prevent the importation of these infectious diseases, but to provide the means to repress or "stamp them out."

Pleuro-pneumonia is prevailing in the dairies about the Eastern cities; and, not long since, the following appeared in the *Agricultural Gazette* (London):

The outbreak of foot and mouth disease in a cargo of American cattle sent to the Metropolitan market last week, is an additional proof that from whatever country cattle come, no amount of inspection is a safeguard against disease.

In today's *Times* Mr. James Oldham refers to the fact of a large number of cattle, just imported from America, being infected with the above malady, though passed as healthy when landed, thus adding another instance to the many proofs already furnished, of the utter insufficiency of port inspection to intercept contagious diseases.

From which we are expected to infer that the foot and mouth disease has been carried from America to England, which we deem quite improbable. And yet how can we say, in the absence of all measures by government to prevent the importation of these diseases, or to discover outbreaks and prevent the spread of the contagion, that the country is clear of them? Self-interest will induce owners of stock to conceal the existence of the malady, where there is no law requiring them to report to official authority.

At the London *Saturday Review* puts the case:

The effect that the importation of live, foreign animals has upon the introduction of disease into this country is that it introduces it. If there were no importation, there would be no disease;

that is, of these contagious diseases that are of foreign origin. And so it is in this country with foot and mouth, pleuro-pneumonia and the rinderpest. The government alone has the power to exclude them; if they have invaded our herds, the contagion will continue to spread, until the power of the government interferes to stay its progress and to stamp it out. The work is now comparatively easy; but, in a few years, without these precautionary measures, all these diseases will be naturalized in this country, as they are in Europe, and the work of eradicating them next to impossible. We therefore repeat, in connection with this most important matter—"Agriculture demands recognition!" And it demands that well informed and competent men shall have charge of these interests, when the commercial policy of the government in relation to them is determined; and it especially demands that such regulations as we have here discussed should conform to general judgment of those interested in agriculture; that their wishes should be consulted, and that all action of the government in relation to such matters shall be promptly made known to the people through the agricultural press.—*National Live-Stock Journal*.

PREPOTENCY IN BREEDING AS A CAUSE OF SEX.

Naturalists and breeders from the time of Aristotle and Hippocrates to the present, have speculated and theorized on the influences which determine the production of sex; and it must be confessed that, considering the time and thought bestowed on the subject, the results are meagre enough. The subject is one deserving the greatest attention, however, and if we can separate the wheat from the chaff, and get even a slight foundation to work on, we may yet be enabled, if not to decide positively in advance, certainly to have the probabilities in our favor. It is not my intention to discuss the theories of Hippocrates or Thury, or those which have been derived from them, for, though still attracting attention in certain quarters, they have long since proved valueless, and without the least foundation. According to what little light we have so far been able to obtain, sex appears to owe its origin, like all other characters of the individual, to the effect of the laws of inheritance. Obviously there are only a few of these laws which can apply, since this character can be inherited from but one of the parents; and I am inclined to think that the last two laws which I admitted when discussing prepotency are the only ones which have an influence on the production of sex. These relate to the vigor of constitution of the individual parents, and their relative physiological condition (probably relative vigor) at the time of impregnation.

Having made this statement, it is now in order to bring forward the facts from which it is derived. First, then, it is a matter of common observation among breeders that certain males or certain females produce offspring either invariably or in a large majority of cases of the same sex as themselves. I believe all admit that this is owing to prepotency, and consequently we must conclude, until further observations are made, that it is merely a question of vigor; and, in confirmation of this, I find a belief among breeders that males exhausted at the time of fecundation are apt to beget females. In one case it may be what I have called constitutional vigor, when the individual will continue year after year, even when mated with a number of individuals of the opposite sex, to produce offspring of its own sex; while in the other case the vigor is only relative—that is, if a male, in one year or with one female the produce will be males, in other years or with other females the opposite will be the result. In other cases, and with animals producing a number of offsprings from the same impregnation, there may be some of each sex, from which we may conclude that there is little difference in the vigor of the parents.

Giron de Bozarsingues, who paid much attention to this subject, stated that "female domestic animals bear more females when themselves well nourished and left in repose, than when much worked and kept on spare diet. Also that fathers, among our domestic animals, which are neither too old or too young, produce with mature and healthy females more female than male offspring; while female parents that are too old or too young are proportion to the males, bear more males." (quoted by Dr. Sturtevant in *Scientific Farmer* for August.) The same authority also laid down the following rules:

"Young male, more females than males; young female, more males."

"Middle-aged male or female, equal proportions."

"Old male, more females than males; old female, more males." (Gayot in Bouley & Renal's Dict.)

M. Martignole made some observations on his brother-in-law's sheep, of considerable importance. The time during which the ram was serving the ewes was divided into three periods, with the supposition that the vigor of the male would be greatest during the first period, least during the second, when the greatest number of ewes were in heat, and again greater during the last, when there was less demand for his services. The result was as follows: first period, 13 males and 4 females; second, 3 males and 15 females; third, 9 males and 4 females; total, 25 males and 23 females—not far from the ordinary ratio. The same authority caused 34 young ewes to be served with a very vigorous, strongly-fed ram; the result was 25 males to 9 females. This ram also served some very exhausted ewes, when they were weaning their young. The result, in one lot, was 8 males to 4 females; in another lot, 27 males to 9 females. (Sanson.) It has also been observed in France, that Swiss and Brittany cows served with Short-Horn bulls produce constantly more females than males, which is quite probable, says Mr. Sanson, for no one would think of comparing the vigor of constitution of the improved Short-Horn with that of the Swiss and Brittany breeds. The same author mentions the case of a jack, which, as a result of founder, had the flexor tendons so contracted that the fetlock joint touched the earth at each step; he therefore kept the recumbent position continually, except the short time when forced to rise to serve the mares which were brought to him. Of course he was very much weakened by this circumstance, but in spite of this, the male breeders of the district were all exceedingly anxious for his services, and as he was only able to serve a limited number, there was great dispute for the preference. Anxious to know why he was so highly prized, Sanson made inquiry among the breeders, and learned that his produce of these being superior to that of the males, completed the explanation. M. Colin had an old greyhound bitch (*chienne de classe*), which he mated with a large vigorous Newfoundland dog only a year old; the result was six little ones, all resembling the father, and all males.—*Physiologie des Animaux*.

Dr. Sturtevant has lately treated the subject of "Sex in Breeding" to the extent of over ten columns in the *Scientific Farmer*, from which I should judge that he intended to give us an exhaustive article on the more important conclusions. One of these is as follows: "We can find no evidence that sex production is governed by heredity; indeed, we think theoretical reasons would be against such a belief." This opinion, it will be noticed, is directly opposite to the one I have tried to sustain by this article. Can it be possible that facts can justify two so different conclusions? I think not, and we may reasonably ask the author what are the influences of age and vigor, of prepotency, or of exhaustion, which he has considered in the order mentioned, but influence which are included in the term heredity? Age has apparently no influence except by the difference of vigor at different ages; exhaustion is but the absence of vigor, and vigor, as I have already shown, is one of the most important elements of prepotency. But we find it stated that "prepotency has undoubtedly an influence on sex production," which is either a direct contradiction on an attempt to draw a line between prepotency and heredity, which hardly seems possible since the former is one of several influences which together form the latter. There is one other remarkable conclusion in this article to which I wish to call attention, and as it seems to be the main result of the whole essay, I will give the author the benefit of his own statement:

"We are led to believe that the vigor of the male can only be of benefit in determining the individual powers of each spermatozoon; and as but few of the immense number started for the egg, reach their destination and fulfill their function, and as there are little or no evidence that the spermatozooids themselves exercise any powers of volition, we must need believe that it is largely a matter of accident or circumstance which one of the spermatozooids is to have the opportunity of exhibiting its mission. Now in a drop of sperm, exhibiting under the microscope, we find many spermatozooids apparently immature, and some more lively, and some showing slight differences from the others. It therefore seems probable that the male can exert but little prepotency as compared with the female, on account of the uncertainty concerning any individual spermatozoid in his case, and the certainty which attaches to the one egg in the other. The doctrine of probabilities in fact necessitates the belief that there is but little chance of any one of the numerous spermatozooids fulfilling its mission; and the prepotent ones are little likely, if such they are, to succeed against the many which are less prepotent."

This reasoning may be more comprehensive than the doctor intended, but if it applies to the production of sex, it is none the less applicable to prepotency in all its forms. And I am not sure that its application stops here; it looks very much like a re-opening of the old question as to which sex exerts the most influence on the offspring. It has long since been conclusively settled by actual facts, how-

ever, that the influences of the sexes are so nearly equal that a preponderance could not be decided on in favor of either. This brings us to the only other aspect of the question—does prepotency belong exclusively to the female sex? I say no, decidedly not; and the facts are so numerous to decide such a question, that it is useless to discuss it. No matter what the supposed facts that lead to this conclusion—no matter how scientific the reasoning, or how learned the man who broaches the theory, it is opposed to the great mass of facts with which every breeder is familiar, and it cannot stand for a minute when confronted by them. Do we not know, in many cases where a stallion, or bull, or ram has been able to impress his likeness and characteristics on his offspring for several generations? And this was accomplished through his prepotency, if we understand what the word means; and if a male can be prepotent in transmitting his conformation and qualities, there can be no shadow of reason why he cannot be equally prepotent in transmitting his sex. And these cases of prepotency in the male are not so rare that they can be called matters of chance; on the contrary, they are so constant with certain individuals, that horsemen can often tell at a glance the offspring of certain stallions. It seems strange, indeed, that a practical breeder, and a man of scientific attainments, should allow himself to be carried to this extent by a mere theory supported by scarcely a single fact.—D. E. Salmon, D. V. M., in *Country Gentleman*.

FAMILIAR FARM TOPICS.

JAS. HANWAY.

NO. XLII.

THE AGE OF PROGRESS.

No one can appreciate the advantages of modern improvements in farm machinery equal to him who has lived to witness the progressive steps by which they have been introduced. The farmer of to-day, surrounded with all the labor-saving appliances which surround us, may reasonably remark "I don't see how farmers ever got along without them." There are many farmers living who can remember the time when threshing machines were first introduced, when the wooden mould board was the only plow in general use; when the hook or sickle was the only implement to cut off the grain.

If we come down to a more recent period, we may mention the mower, the horse hay rake, the sulky cultivator, the corn planter the corn stalk cutter, the horse hay fork, the grain drill, the gang plow and numerous other minor improvements which lessen muscular labor, and economize time and experience. The present generation who cultivate the soil for a living, can hardly appreciate the wonderful progress which has entered into the management of a farm. When we look back forty or fifty years and picture in the imagination the old awkward tools and implements of husbandry which were in use in those days, we cannot but believe that the Midus touch of inventive genius has been more than realized. And this wonderful march of progress is not confined to agricultural pursuits, but it has entered into all departments of manufacturing industry.

The arts and sciences are no longer confined to the higher schools of education, for they have found their way into the more humble walks of life. Every discovery increases the field of human knowledge and tends to make life more comfortable, for the burden of muscular labor is removed by machinery; the articles necessary for our domestic comforts are cheapened, and thus all are mutually benefited yet we are not happy, because we cannot obtain riches as fast as we desire. Our wants, it is true, increase as we advance in knowledge and civilization. Our Indians on the plains have few wants, and those chiefly to supply the cravings of hunger. The philosophy of life is to keep our desires within proper bounds, and not reach beyond our capacity to perform. The old adage of not having too many irons in the fire at one time has a significant meaning, but in the age of progress we may well afford to multiply our plans; all that is needful is to attend to them at the proper time; the more plans the better, provided we do not neglect them.

DARK BRAHMA CHICKENS—A REPLY TO TO MR. IVES.

MR. EDITOR.—I am surprised that among your many correspondents there are none who will not, or dare not, unsheath the sword in defence of so noble a bird as the Brahma fowl; a bird so docile, so kind and so intelligent; one which minds her own business; never quarrelling and fighting like some birds, and one that don't require a fence as tight as a sieve, nor as high as a pine tree to keep them under control. They are one of the hardiest fowls raised, and has the most quiet disposition of any breed on this continent. They would not fly to the top of a wagon when they knew it was loaded with corn. They will begin laying just as early in the spring as the Leghorns; will average as many eggs through the season, for they are better winter layers, and are willing to deposit their eggs in nests you may arrange for them; while the Leghorn will run off and lay in some secret place, where no one can find them, and in fact, I don't know but the hen herself is not a little puzzled at times to find them; and I suppose she doesn't care much whether she does or not, as she does not receive the money they would bring, and the chicks that are in their shells she would not hover for three weeks for them nor would not feed them if some kind Brahma would hatch them and present them to her; although the most she cares for is roaming about, or undermining some plant in the garden or yard, which had a bug or worm on it last week, or pouncing upon some peacock mother that is leading her little brood through the garden or lawn in search of food; she flies

upon her with fury, and as the mother directs the attention of her brood to the bug or worm on yonder plant she is pounced upon and her family is scattered in dismay.

Their meat is of a wild nature, tough, and are never fat, while the Brahmas are the reverse, always ready for the table; the Leghorns will weigh only from three to four lbs. each, while the Brahmas average ten lbs. And to sum it all up if a person keeps only one breed of fowls they must keep some other breed than the Leghorn, or they cannot raise chickens.

G. W. BLACKBOLL.

Cedar Rapids, Iowa.

CUTTING GRASS AND MAKING HAY.

Although this subject has been discussed for a long time, as much as any other pertaining to farm economy, it is hardly threadbare for there is still a difference of opinion as to time and methods of cutting and curing in order to get the best results from hay. Certain it is, however, that a great change has taken place in the minds of a vast number of farmers, in regard to the time of cutting grass, within a quarter of a century. For a long time the common practice was to allow the grass to stand until a portion of the seeds were ripe, and could be rubbed out of the head; and the reason alleged for allowing the crop to become thus mature was, that the hay would go farther in feeding; that it would last longer, or, as it was sometimes expressed, "pend" better. There is no question that it would take longer to feed such hay out, but the idea that it was therefore more valuable has been discarded. The majority of farmers have since learned what a few were not slow in discovering, that woody fibre possesses no nutrition and is of little use except in giving bulk to food, and that over-ripe hay has parted with a large percentage of its nutritive principles. Grasses attain their full development when in flower and they then contain the highest percentage of valuable materials, such as starch, sugar and accessories, as well as nitrogenous compounds, thus combining at that period more nutriment for sustaining animal life than at any other time. Intelligent observation in practice, as well as accurate analyses, have proved that in the transformation from flower to mature seed, the starch and sugar of the plant are largely converted into woody fibre, and this, as a matter of course, lessens its value. It is therefore simply a question of the value of woody fibre as compared with starch, sugar and vegetable oils and acids in building up and sustaining the animal economy; and the idea that hay cut over-ripe, will last longer than that cut when the grass is in flower, (which is still held by an individual here and there) loses its force. The time to cut, therefore, is that period when the grass contains the maximum of nutrition, and this point, as we have said, has been ascertained to be when the plant is in flower.

But curing hay probably is quite as important, if all of the nutritive properties it contains are secured, (or as nearly so as possible), as is the proper time of cutting it. It may be said, without risk of much debate, that this matter receives less attention among farmers generally than it ought to, or than its importance deserves. It hardly need be said that the process of curing is one which requires judgment and skill, for it is well understood that to be of value, hay must not be allowed to lie too long after it is cut before it is turned, and then put either into cocks, or the stack, or barn. The point to decide is, when the grass is cut; how to cure it so as to evaporate, a necessary quantity of moisture to secure its preservation, and retain the largest portion of its nutritive properties. The old method—and the one which a majority follow yet—is, to expose it to the action of the sun and the atmosphere—turning it in the swath so that both sides may be cured alike—until it has become fit for storing. But it has come to be understood by no inconsiderable number of our best farmers that in this rapid process of drying the hay parts not only with a considerable percentage of its moisture but with a portion also of its nourishing constituents. Herein is the *fine art*, so to speak, of curing hay; to arrest the loss of sugar and starch, or their change into woody fibre, just at the point where it is safe to put the hay into the barn. The practice of many is to expose it, but a short time to the sun and atmosphere, put it into cocks, and by fermentation to dry it sufficiently to store in the mow, of its nutritious juices than when dried thoroughly in the sun.—*Western Rural*.

A writer in the *Moral Cabinet* asserts that the best thing she knows to keep bugs from plants, is to sprinkle onion water over the plants, and pour it also on the earth.

SLUGS ON ROSES.—These destroyers of the beautiful rose may be exterminated by using the following preparation: Take a quarter of a pound of white hellebore, and steep it in a gallon of water. When cold, apply with a whisk brush. Two applications will be enough.

GROWING PLANTS FROM SLIPS.

This process is described in a discussion at the American Institute substantially as follows:—"We must always bear in mind that a high temperature is necessary to grow plants from slips. They will seldom strike roots when the thermometer stands below sixty degrees, and that is probably why so many fail. The best material to start cuttings of any kind, is in clean washed sand. If in the ground, make a hole an inch or two across, and fill it with sand. Grape propagators use nothing but sand and water at first. When roots start, the cuttings are changed to other pots filled with rich compost."

A neat and well arranged lawn adds great attraction to a home, whether in country or village, but a good vegetable garden from which is drawn the daily support of the family is of far more pleasure than nice lawns, delightful summer houses or vine-clad alcoves.

MULCH FOR SWEET POTATOES.

A correspondent of the *Rural Sun* advises that sweet potato hills be mulched with old straw, sorgo cane stalks, leaves, shavings, sawdust, old spent tan bark, or anything that will hold moisture, filling up between the ridges to the top; the much keeps down the weeds and grass, and keeps the vines from taking root between the ridges, and keeps the ground moist and warm, two very necessary conditions to the rapid growth of the tubers. Last spring the vines so mulched produced far more and better potatoes than the unmulched portion. The mulch is applied about the time the vines begin to form runners strongly.

