



A REBEL MAKES HIS PEACE IN THE SULTAN'S CAMP.

After the brigand leader's flight, the Djebala, a tribe that formerly adhered to Raisuli, sent a messenger to make submission to the chief of the victorious Mahallas, who came from Fez to Tangier to restore order. In token of submission he sacrificed a bull before the Kald's tent. The old sheik and the person sacrificed have taken of their shoes according to the Moslem rite, but the officer of the guard, who has European shoes, does not conform. The flags have a religious significance. The bull was hamstringed before its throat was cut. It is reported from Tangier that as soon as Kald Maclan had been captured by Raisuli, he managed to send one of his useless escort to visit each section of the Hikmasa tribe with instructions to sacrifice an animal before the

chief men and all upon them to be loyal, and uphold the Sultan's authority. The messenger went off and accomplished his duty successfully. Raisuli's great annoyance. The custom of sacrificing a bull in token of submission to the authorities is very common in Morocco. When a rebel tribe makes its submission the ceremony is always associated with such a sacrifice. The headman of the repentant tribe and the slaughterman stand bared-headed before the Sultan's representative, and the bull is killed in their presence. The ceremony is often associated with a noise which is taken very seriously by all who participate in it. Not infrequently this sacrifice of a bull marks the close of a campaign that has been associated with prolonged suffering and hideous cruelty.

"DEEP CALLETH UNTO DEEP"

When softly and lightly  
The south winds are dancing,  
And swiftly and brightly  
The sunbeams are glancing,  
And blue, dimpling waters scarce sigh  
In their sleep,  
The spirit of beauty broods over the deep!

When angrily, madly,  
The north winds are sweeping,  
And the storm-aves are gliding,  
Their wild waves are keeping,  
The waves cry of woe as like mountains  
They sweep,  
And death rides abroad on the face of the deep!

O, thunderous voices  
Rebelling all errors,  
My spirit rejoices  
In spite of its terror,  
To see the great waves as they clash and  
they leap,  
And I listen with awe when deep calls  
unto deep!

—Lesuire Hours

Grace's Baby

"I was over to Grace's Tuesday evening to see the new baby," said Mrs. Pollap, leaning her fat arms on the back fence.

"Is that so?" said her next-door neighbor, peering a sheet on the clothes line. "An' how's Grace by this time?"

"Fine," replied Mrs. Pollap. "There was quite a crowd over. Her mother's with her, o' course. Catherine was there, too, an' George an' their Aunt Witherby an' old Mrs. Chooop. I guess a old gentleman's been havin' quite a time cookin' his own meals since Mrs. Chooop's been with Grace. They was busy namin' the baby when I got there. I didn't know but what there might have been a family scrap over it. Seems they hadn't settled on nothin' yet an' the young one's over 4 days old! Mrs. Witherby was put out about it. She said it was a sin an' a shame to jest call him 'Baby' all his blessed little life.

good as anythin' you've thought of?

"Bertrand Richardson?" You can call him "Bertrand Witherby Richardson" if you want to, but that's just as you please. I knew a young man once back home name o' Bertrand Krug, an' he was jest one o' the nicest young men I ever knew in my life. Didn't have no bad habits nor nothin' an' he went into the soap manufacturin' business afore he was 24 years old, on his own account. Real pleasant, too, he was."

"I bet he was an old-bud by auntie's," says Catherine. "Grace, darlin', don't you do it. You call him Herbert." I think Herbert's as common as nice as Vivian. "Why won't you call him Vivian, Grace?"

"I did want to call him Eric," says Grace, but Vivian is a pretty name and I like Bertrand awfully well."

"What's the matter with George?" says George. "Sis, if you call him George I'll give him \$50 for a starter."

"You keep still," says Mrs. Chooop. "He ain't going to be called George."

"He's going to be called Vivian," says Catherine.

"Grace is going to call him Bertrand," says Mrs. Witherby. "Aren't you, Grace?"

"What do you think o' Calvin, Grace," says the old gentleman. "Think you couldn't stand for it?"

"Just then Richardson come home from work an' stamped into the room. Ain't he the biggest homeliest, befferin' man you ever seen? Well, he comes in an' he growls out: 'What's the trouble here? How are you folks? How goes it, Grace, and how's the kid?'

Popular Science

In England much interest has been shown of late by the army and navy authorities in a new method of preserving flour by means of compression. With hydraulic pressure apparatus the flour is squeezed into the form of bricks, and experiments are reported to have shown that the pressure destroys all forms of larva life, thus preserving the flour from the ravages of insects, while it is equally secure from mold. Three hundred pounds of compressed flour occupy the same space as 100 pounds of flour in the ordinary state.

The car shortage problem will be solved in a great measure when some way is discovered to properly compress the cotton bales as it leaves the gin. This is the difficulty of this is owing to the fact that the ginning is done upon plantations, where there is but a limited amount of power available. At the point of production it is undoubtedly true that the number of cars required to handle the crop would be very materially increased.

The recent increase in the use of electricity in Spain has been so rapid that an official report states that to-day very few localities exist where the electric light is not employed. This is particularly true of places situated near swiftly running streams. The consumption of electric lamps, even in the smallest villages, is described as being enormous. Everywhere electric motors are found taking the place of steam-power. Yet the construction of electric apparatus in Spain has not kept step with the growth in its employment, 50 per cent of the dynamos and motors being imported from Germany. Most of the remainder come from France and Switzerland.

Fancy Prices for Apples.

Burying apples by the dozen, \$1 or more for twelve of them, is a commonplace to-day. Twenty years ago it was a proceeding seldom heard of, says Richardson. "His name is Bill." "Bill!" they all hollered.

"Bill!" says Richardson, in his gruffest, shortest way.

"Nobody didn't say anythin' after that. It kinder broke up the meetin'."

"And so they've called that poor infant 'Bill'!" said the next door neighbor. "Ain't that too bad? William, I s'pose?"

"William, nothin'," said Mrs. Pollap, contemptuously. "Don't you think the mother'd have somethin' to say about it. Why, no, they had the christenin' yesterday. Eric's what they named him."—Chicago News.

The Art of Talking.

To be a good conversationalist you must be spontaneous, buoyant, natural, sympathetic, and must have a spirit of good will. You must feel a spirit of helpfulness and must enter heart and soul into things which interest others. You must get the attention of people and hold it by interesting them, and you can only interest them by a warm sympathy—a real, friendly sympathy. If you are cold, distant and un sympathetic you cannot get their attention.

To be a good conversationalist you must be broad, tolerant. A narrow, stingy soul never talks well. A man who is always violating your sense of taste, of justice and of fairness never interests you. You lock tight every approach to your inner self, every avenue is closed to him, and when he comes he is closed your magnetism and your helpfulness are cut off, and the conversation is perfunctory, mechanical and without life or feeling.

You must bring your listeners close to you, must open your heart wide and exhibit a broad, free and an open mind. You must be responsive, so that listener will throw wide open every avenue of his nature and give you free access to his heart of hearts.

—Success Magazine.

A Frog Barometer.

A curious barometer used in Germany and Switzerland consists of a jar of water with a frog and a little stepladder in it. When the frog comes out of the water and sits on the steps it is said infallibly to foretell rain.—Kansas City Journal.

Paradoxical Help.

Prospective Angel—How, my dear Miss Starczarek, can I help to advance your progress steadily in your art?

Star (copy)—By giving me constant checks.—Baltimore American.

Nearly 8,000,000 Acres of Alaska Soon to be Opened.

At a distance of some fifty miles south of the arctic circle 2,080,000 acres of land will be opened for settlement in Alaska on Sept. 30, by a recent order of the secretary of the Interior. This great tract has been held in reserve for a national forest around Norton bay, but the project was abandoned, so many were the demands for entry on land which had been found more suitable for settlement, says the New York Tribune. The spring rush for Alaska overwhelmed steamship accommodations and filled up the wharves at Seattle with household goods, but the order of the secretary is expected to prolong the rush up to the approach of winter. Alaska has been in the throes of a general strike and tie-up, but as usual in such cases this feature is wearing itself out. These troubles were caused by the shortage of labor in southeastern Alaska, owing to the activity of railway building and the development of new mines, culminating in a general demand for higher wages.

Agriculture is proceeding hand in hand with the efforts of government experiment stations, which are constantly determining what will grow which an arctic forest around Norton bay. So far, all the harder vegetables have been made to thrive, and in the large valleys of the interior experiments are being made, with every prospect of success, to grow hay, grain and stock feed capable of maintaining work animals. The great valley along the Yukon river in central Alaska, extending north from Cook's inlet and Resurrection bay, it is declared, has a mild climate all the year, owing to the warm currents of the ocean, and will grow almost anything that is raised in temperate zones.

Most important to Alaska has been the improvement of the transportation facilities, both on steamship and railway lines. In the Seward valley the Alway Central railway last year had forty-seven and a half miles of standard gauge track in operation north from Seward and its roadbed in excellent shape. The series of tunnels and heavy grade work for the next six and a half miles were 90 per cent completed last year and are now about to be opened. The seven tunnels in this section are 3,500 feet long and with their completion trains will have fifty-four miles of track. The line aims for Galbenak, Monastuska coal fields and the Yukon, 400 miles northward. The Copper River railway had completed twenty miles of road from Cordova and its grade was done almost to Copper river at the close of last season. Much of its heavy rock work through the Abercrombie canyon of the Copper river was completed.

The Tanana Mines railway had in operation when the snowfall began last autumn thirty-six miles of road, from Cordova to Gilkey through Fairbanks. The Copper River and Northwestern railway had about completed twenty miles of grading north from Valdez and surveys were laying out other routes, including one from Catalla to the Kayak coal fields and thence parallel to the Copper River railway. The Valdez and Yukon railway had completed its wharf and off-laid one mile of standard grade track and graded part of its roadbed. The Solomon River railway had extended its line to Casadegpa and pushed construction to reach Council City.

No wonder the Department of Commerce and Labor has at last discovered what the Democrats have always claimed: that the Oil Trust and most other trusts are selling cheaper abroad than to our own people and the tariff protects them in so doing, because their foreign competitors cannot export oil and other products to the country without paying the tariff tax. The Standard Oil and other trusts are thus protected in charging not only the price they are willing to sell their products for, but to add to that price whatever further profit the tariff protects them in charging. This is the American people are plundered by the trusts through the Republican tariff law, which virtually the protected interests made and dictated to the Republican leaders.

Rough Remedies.

Mrs. E. D. Martin, of the New York W. C. T. U., has been delegated to open in the public libraries a campaign against those novels whose heroes are dissipated and whose heroines drink champagne and even smoke an occasional cigarette.

"You think my campaign will fail?" said Mrs. Martin the other day. "Well, no doubt it will fail if I conduct it clumsily. I hope, though, to succeed. Women's movements that fall too often fall through ignorance. We women are so apt to take up a subject before we are capable of understanding it. I remember a case in point, the case of a first aid class in the village of Paint Rock. A physician was one day summoned post haste to the home of a Paint Rock lady. He found her in a shocking condition.

Reduced Railroad Rates.

The question of railroad rates, either fixed by the states on transportation within the state, or fixed by the United States Interstate business, must eventually come before the United States Supreme Court on the question of constitutionality. The pressing issue is whether the rate reductions shall go into effect at once, or by injunctions issued by the lower federal courts be postponed until each case is reached as it is decided by the highest court. This matter of the railroads being able to take advantage of all the laws delays was the contention of the Democrats when the railroad rate bill was being discussed in the Senate, and the Culberson amendment, which the Republicans defeated, was intended to cure that defect in the law. Regarding the same delay under state legislation the question is one of state rights, and whether the reduced rates can be held up by the injunction of an inferior federal court issued by a judge in evident sympathy with the railroads, when the natural order of procedure would be that the case should go to the state Supreme Court and thence to the United States Supreme Court. In the North Carolina cases the railroads were forced by Governor Glenn to acknowledge the supremacy of state courts and the reduced rate has already gone into effect.

The Little Brown Man.

The War Department thinks self-government is a failure in the Philippines, because a large majority of the Filipinos voted for the party that stood for independence. It is a good joke the little brown men played on the President and the War Department by making believe up to the day of the election of the Philippine legislature that they favored the party which had declared for statehood and being part of the United States. It was really too bad to deceive those great and good men who were taking without representation and governing the Filipinos without their right to say yes or nay. But the mask has been removed and the Independents will now have a chance to discuss the continuation of enormous taxes mostly used to provide soft snags for Republican politicians that could not hold their ground above the political stream in the United States. The administration will now have to suppress the legislature or veto its decrees.

POLITICS OF THE DAY

The Protected Trusts.

That the tariff protected trusts sell cheaper to foreigners than to our own people has been proved by the Democrats for some years. But for a long time it was denied by the Republican organs, and by the Republican leaders in Congress. That the standpaters at least have had to admit the truth of the Democratic contention in spite of so long denying it shows the unreliability of Republican political statements when it seems necessary to them to deceive the people. Perhaps the first admission by a Republican official of a great trust selling cheaper abroad than here has now appeared in the report published by the Department of Labor and Commerce from the Bureau of Corporations. This last report on the Standard Oil Trust says: "The course of American and foreign prices in the last five years covered by this report has shown a greatly increased divergence in general, the American prices going up and the foreign prices showing a marked decline." The report also gives the price and margin of profit in the United States and in foreign countries which show grossly to the disadvantage of the American consumers.

The statement made by Republicans that petroleum is on the free list—which it is—and therefore is not protected by the tariff, either overlook, or purposely mistake the fact that although petroleum is on the free list, it is at the same time most severely protected by a reciprocity proviso which the Republican managers obligingly tacked on at the end of paragraph 629 of the tariff law, which is the same paragraph that puts "petroleum crude or refined" on the free list. It is known that when the Dingley law was being scored up by the Republican members of the ways and means committee, not in the public rooms of that committee at the Capitol, with the Democratic members present, but in a private room at the Arlington Hotel in Washington, that the trust representatives were invited to present schedules of their products and it is evident that the Oil Trust, or perhaps Senator Aldrich, prepared the proviso, which actually protects the trust 100 per cent. That proviso stipulates that on petroleum and its products "produced in any foreign country" there shall be collected when such goods are imported, a duty of one cent per gallon or its product so imported equal to that imposed by such country." As Russia and the other important oil-producing countries levy duties on kerosene and most other refined products of petroleum averaging about 100 per cent it follows that the Standard Oil Company is one of our most highly protected trusts. The Treasury Department holds that the rates of duty to be assessed on these products are not those levied by the country from which the refined products may be imported but those levied by the country which produced the petroleum from which the imported products were made.

Thus Secretary Shaw convicts his own party of being responsible for all the panics, for the financial and economic legislation in operation at the time these panics originated was enacted by the Republican party, and when the McKinley and other high tariff laws were in operation, which are reputed by the Republican standpaters to produce prosperity.

Now the Democrats claim, and history proves their contention, that a high tariff does produce prosperity for the trusts, which are fostered and protected by the tariff, but such protection to the monopolists also results in high prices which the people have to pay. These high prices and immense profits to the trusts and monopolists, very naturally induce them to increase production of their products, but it also requires a like increase in incomes and wages to meet the advance in the cost of living, for the people cannot spend what they do not get. As incomes and wages have not increased in proportion to prices we now suffer from strikes in an attempt to even up income and output.

The High Price of All Commodities.

The high price of all commodities also requires more money to do business, and although there is a constantly increasing volume per capita, in consequence of the enlarged production of gold, yet the inflation is not enough to finance the trusts and corporations with their enormous capitalization, which is augmented by hundreds of millions annually.

So are we now suffering from money stringency and a panic in Wall street, which is already adversely affecting business and may become more acute in October. If the Democrats elect a President next year, and the present ineffectual panic should next year develop into hard times, Mr. Shaw and the Republicans would, of course, say the Democratic victory, or the fear of it, had disturbed business and produced a panic. It is not about time for sensible people to get together and force the enactment of reform legislation, financial and economic, that will prevent panics by reforming the tariff that protects the trusts, prevent fictitious capitalization of corporations and by fair taxation, including a constitutional income tax, prevent the concentration of all the surplus wealth of the country in the hands of the few upon which the many must pay interest?

Tariff and Patent Monopoly.

There never was a day in the history of our country when the price of cotton was so high as it is now. The price of cotton when one per cent of the enhancement of the price of cotton came from the tariff. If the tariff has increased the price of everything the planter or the laborer in his cotton field had to pay for plows, scrapers, shovels, axes, hoes, barbed wire, gearing, gins, cotton-oll mill machinery, clothing, sugar-salt—in fact every manufactured product. The same is true of other—all other producers, except manufacturers. Some manufacturers have double monopolies. They have patent rights in addition to tariff protection. One or the other ought to be denied them. No manufacturer should be allowed to rob people at its own-will. The tariff on products made by patented machinery or processes should be abolished. If this were done the Steel Trust "protection" would no longer be worth a billion dollars, but only what the cop-stitutions secure to it as the value of its patents.

Better a Red Face than a Black Heart

—Portuguese.

ment by making believe up to the day of the election of the Philippine legislature that they favored the party which had declared for statehood and being part of the United States. It was really too bad to deceive those great and good men who were taking without representation and governing the Filipinos without their right to say yes or nay. But the mask has been removed and the Independents will now have a chance to discuss the continuation of enormous taxes mostly used to provide soft snags for Republican politicians that could not hold their ground above the political stream in the United States. The administration will now have to suppress the legislature or veto its decrees.

Panics and Politics.

That delightfully strenuous stand-patter, Leslie M. Shaw, now says the cause of all panics has been traceable to financial or economic agitation, or legislation and usually both, thus attempting to blame all panics on the Democrats. But he evidently has to falsify history to prove his contention, for all the panics since the Civil War originated under Republican rule, and developed under Republican legislation. The panic of 1869—Black Friday; the great panic marked by the failure of Jay Cooke & Co. in September, 1873; the panic of 1892; all commenced when the Republican party was in power, and that party is alone responsible for the financial and economic legislation, and must, therefore, take the blame for those business depressions.

The contention of the Republicans that the panic of 1892 should be charged to the Cleveland administration has no historical truth for its first indications were given November 11, 1890, about eighteen months after the inauguration of President Harrison, and just after the McKinley tariff bill became a law. When President Cleveland went out of office March 4, 1895, there was an available cash balance in the United States treasury of \$278,079,970. Four years after when President Harrison retired March 4, 1893, the treasury books showed but \$125,050,728 available cash. But that available balance was arrived at by a change in the system of bookkeeping, and on the same methods as the books were kept under the Cleveland and other administrations would show a deficit.

Healthy animals require no medicine; conditions in them may be established and maintained by intelligently applied alternations in the quantity and quality of their food and labor.

Training will develop many good qualities in the horse which would otherwise be dormant and subdued many vicious habits and faults which would render the horse worthless if allowed to go unchecked.

The Claim that Salt should be Applied to Asparagus Beds is not Supported by Experiments.

It destroys a number of weeds and performs mechanical service in the soil, but it is not a necessary fertilizer.

The country store man knows better than anybody else the lack of education in the matter of making and keeping farm butter. The unassorted odors that pass under his nose every day are enough to sour the milk of human kind.

The First Year of the Colt's Life is Important.

Keep him growing the first year, keep him growing the second year, keep him growing the third year and if he is to be marketed have him fat, for fat will often cover up a multitude of defects.

Every Farmer should have a few Grapevines.

They serve as arbors or shade and can be grown where they will not take up much space. If poultry flocks will be lured if grapevines are grown along the fences, and fowls will find shade under the overhanging branches in summer.

How many windows has your barn?

There should be a window for every stall at least and one for each stall is not too many. Sunlight is the cheapest purifier we have and in many ways the most effective. No part of your stable should be so dark that one could not read a newspaper readily at any time during the day.

Nebraska farmers complain that a great trust controls the creameries in that state.

It is asserted that the trust fixes the price of cream, dictates the territory for each creamery, and when an independent butter factory starts up the trust raises the price of cream and drives it out of business. In addition to this it is claimed that the railroads have given the trust special rates and that the small creamery man stands no show. The trust is reported as making an annual profit of from 100 to 200 per cent. The attorney general has been commissioned to squelch the trust.

Ground Corn for Hogs.

The Wisconsin experiment station has for many years been testing feeding hogs on whole corn and meal with middlings. The average of all these tests with 117 head of hogs fed shelled corn and wheat middlings, made an average gain of 96.8 pounds each, while an equal number fed corn meal and wheat middlings gained 110.9 pounds of gain in the two cases being 139 pounds and 4.88 pounds. The savings from grinding, therefore, are estimated to 5.7 per cent, according to the price of corn per bushel, showing that when one owns his own corn mill and power, he can afford to grind his corn for feeding hogs, etc.

Food for Young Stock.

For young and growing stock the foods that contain the mineral elements should be preferred, but where linseed meal and clover are used there will be no necessity for feeding bran. A large number of farmers purchase bran, and it will be to their interest to endeavor to know something of the various kinds on the market, as a falling off in the nutritious elements of the bran used may result as it is to be expensive. There are also excellent proprietary foods that are well balanced. Many farmers feed the ground material

PERM GARDEN



He who feeds his land well will be fed.

Provide plenty of wood ashes and salt for your pigs.

If by bad management you now get behind with your work, it will crowd you all summer.

Much and thorough cultivation will often make up to some extent lack of fertility in the soil.

A system of farming which gives poor crops is exhaustive and one which gives good crops builds up the farm.

There is a ready sale for all the good, clean, sweet farm butter that can be made—but not for the other kind.

Sow every acre you can spare to clover. Better even cut down the other crops all around to make room for it.

To find the number of cords there are in a pile of wood, multiply the length by the width and height and divide by 128.

The character of the feed determines the character of the meat and the wholesome meat is only made by wholesome food.

When you hear the farmer say, "Just my luck," in nine cases out of ten if he were truthful he would exclaim, "Just my laziness," or "Just my inattention."

Sheep can not be kept on damp locations without being liable to foot rot. Their quarters should be dry, and they will thrive in an open shed that faces the south.

A patch of millet or sorghum may be sown to keep out the light hay crop or to make a green feed to help out the pastures during the latter part of summer or early fall.

Recently a trainload of twenty-three cars of rice was shipped from Beaumont, Tex., for Porto Rico. This is the largest single shipment made by any rice mill in America.

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Independently of the coarse food, it is considered more laborious to mix all the feeding materials together, for the reason that if the ground grain is to be mixed with the hay and fodder the latter must be passed through the cutter and reduced to a fine condition. Of course, the older the grain is, the greater the cutting of the food into short lengths will effect a saving that would more than offset the cost of labor, as the stock would eat more and cost less. But there is a gain in feeding ground grain with cut hay or fodder in another manner. When the grain is mixed with the coarse material it is more easily digested, as it is divided and carried into the stomach in a condition which permits of the gradual action of the digestive organs. The long provender, also being in a fine state, a great proportion of nutrition is there by extracted, and the system taking the whole together will prove economical.

Tree-Growing Bounty.

There is a law on the statute books of Pennsylvania which ought to have a wide circulation. It is "An Act for the Encouragement of Forestry."

The law takes the best means possible to encourage owners of land to preserve and propagate timber-trees, for it allows a reduction of taxes on the owner of forest land which comes up to certain requirements of the act. The first man to take advantage of the new law is an Allegheny county farmer, Mr. Tenner, of Leet township. As told by the Pittsburgh Chronicle-Telegraph, Mr. Tenner has obtained from the county commissioners a reduction of \$23.50 in his taxes for complying with the provisions of the act.

It is rather remarkable that the second county in that State in point of population should be the first to pay a bounty for forest preservation under the new law, but such is the case. The land owner who preserves his woods not only gets this immediate reward, but the increasing value of the trees will make a further and larger profit for him eventually.

Digestion of Foods in Feeding.

A series of tests is reported by Storrs Station, Connecticut, in which corn meal and mixed hay in turn were used as a maintenance ration to two dry farrow cows. The results of tests with milk cows, pigs and calves are also quoted and discussed for purposes of comparison.

On an average 6.25 pounds of corn meal containing 4.5 pounds digestible nutrients was required for maintenance by the farrow cows as compared with 13.15 pounds of mixed hay containing 7.1 pounds of digestible nutrients; that is, on an average 57 per cent more digestible nutrients was required for maintenance when derived from hay than from corn meal. "Less digestible nutrients from corn meal, therefore, were required for maintenance than from hay, because less energy was expended in the work of digestion and assimilation." "An increase in the proportion of grain to roughage in a ration for milk cows (in feeds which were quoted) tends to facilitate digestion, and is followed by increased production."

A similar explanation will account for the more rapid gain in the case of pigs and calves fed the more easily digestible rations in the tests summarized. In general, according to the author, "the value of a feed depends upon its composition, digestibility and ease or facility of digestion. The first two factors are considered in the formulation of rations. The third factor has only recently been recognized, and little definite knowledge in regard to it is at hand. In a general way it is recognized that milk is more easily digested than meal, concentrates than roughage, early than late cut hay, silage than corn stover, oat than rye straw. A pound of digestible matter, therefore, should be more valuable in the former than in the latter."

Value of Sunflower.

The sunflower, though it originated in this country in the region of the great plains, is not used so extensively here as in some other countries, notably Russia. It is a long time since the plant first delighted the eyes of Europeans, being then cultivated in the gardens of Madrid. The early Spanish explorers had found it in this country and taken it home with them.

The plant was utilized by the American Indians long before the days of Columbus. When Champlain visited the Georgian Bay in 1615 he found the natives growing it and using the oil for their hair. It was raised chiefly, however, for the food afforded by the seeds. In Russia at the present day the seeds are eaten in immense quantities, raw or roasted, as peanuts are in America, and the oil obtained by pressing the seeds is an important article of diet. The frequent religious fast days in that country restrict the use of meat and lead to a large consumption of vegetable oil. The manufacture of sunflower oil has consequently grown to considerable dimensions. The best seeds yield an oil that compares favorably with olive oil for table purposes.

Even the upper classes in Russia eat the seeds, the larger and finer ones being quite equal to most nuts in respect of palatability and wholesomeness. The stalks, when dried, are highly prized for fuel, being in some parts of the empire almost the only available substitute for wood. An acre of sunflowers will yield many cords of good fuel.

The oil appears to have more of the general properties of olive oil than has any other known vegetable oil. It takes about a bushel of seeds to make a gallon of oil, and fifty bushels of seeds can be grown on one acre of land. As the oil sells at \$1 a gallon, the profit is large.

Of late years purified sunflower oil has been used extensively to adulterate olive oil. It is of a pale yellowish color and decidedly palatable. In a crude state it is used by painters to some extent, but it is inferior to linseed oil for use in paint.

In addition to the oil from the seeds, the stalks, when green, and the oil cake or meal, are excellent fodder. The fiber of the stalks, which is very strong and very long, also has a value. In China it is woven into beautiful fabrics, and it is believed that, by use of proper machinery, it might be utilized most profitably in this country.