AGRICULTURAL.

Preventing Borers.

The following wash given by a correspondent is declared to be an effectual guard against the apple and pear tree borer: For a barrel of, take a half bushel of unslaked lime and slake it in a barrel. During the process of slaking, when it has arrived at the hottest stage, add one gallon of gas-tar. If it is added when the lime is hot, it will be thoroughly incorporated with the wash, but this will positively not be the case if added when the lime is cold. After the gas tar has been added, add five gallons of soap —whale-oil is the best, if convenient; if not, a common, home-made soft-soap will do. Fill the barrel with water and stir thoroughly, when it is ready for use. It should be made just as wanted to obtain satisfactory results from its application. The mixture will cost about 75 cents a barrel. Apply with a cheap whitewash brush with an 18-inch handle. Have a pan of kerosene and two brushes for the person applying the wash, keeping one in the kerosene when the other is in use; this is necessary, as the gas-tar in the wash makes the brush sticky, so that it would be impossible for the operator to apply the wash perfectly without frequently changing the brushes. Carefully scrape and clean the trunks of the trees before applying. The proper time to apply is the latter part of April or any time in May. One application, if made with a liberal hand, is sufficient for one season.

App'e Blossom Weevil.

The British Board of Agriculture is endeavoring to arouse the apple growers of England to imitate their French competitors and take combined action against the apple blossom weevil, which has done incredible damage to apple crops in recent years. The ravages of this minute insect are often erroneously attributed to the east wind or late frosts, and even when the true nature of evil is recognized it is useless for one cultivator to incur the trouble and expense to remove it if his neighbors allow it to increase and multiply in security all around. One weevil it is said, will lay twenty eggs, placing one only in each bud of an apple blossom there to be hatched and nourished upon the fruitful portion of the flower to the destruction of all hope of apples. In France apple growers in a village form an association, and, seizing an appropriate moment, make a combined raid on the invaders of all the trees in the parish. In one orchard of about eight acres scores of thousands of weevils were shaken from the trees and destroyed, and a satisfactory crop of apples afterwards was obtained.

Our Butter in England.

Canadian butter appears to be "looking up" in the British market. Says The Glasgow Bailie of April 13:

"Messrs. Clement & Son, of this city, who have also branches in London, Manchester and Newcastle, have just received a first shipment of 10,000 lbs. of winter made creamery butter from Canada. Up till recently butter-making was regarded as an outside accomplishment by the Canadian farmer. He took to it at odd moments, and if the truth must be told, the butter bore distinct evidence to the haphazard system in which it had been manufactured. Twelve months ago, however, the Government at Ottawa resolved that the industry should be put on a different and better footing. Experimental dairy stations were established in the several provinces, so as to assist in the development of winter dairying; co-operative creameries were started, and other steps were taken so that Canadian butter might by-and-bye take a position in British and other markets similar to that occupied by Canadian cheese. Hearty support has been given to the movement by the farmers in the Dominion, and now, at the end of the first season, all concerned are thoroughly satisfied with the proceeds and prospects of the movement. On this side of the Atlantic the butter will be warmly welcomed. Not only is it excellent in quality but its price is such as to recommend it to every householder over the length and breadth of the land."

Poultry Experiments.

Prof. Whitaker says that, in his experience, one of the difficulties met with by agricultural experiment stations, in attempted experiments with poultry, is the individuality of the hens. Great expense is incurred when experiments are made with cattle or other stock, and no cessation of labor results until the work is ended. This course should be pursued with experiments made with poultry, for while it may be admitted that the hen is but a mite compared with the cow, yet the poultry interests are as great as those of any of the large stock, thus making it as important to experiment in that direction as in any other, the value of the poultry and eggs produced in this country being sufficient to place the industry on a level with that of cattle, horses, sheep or swine.

No results can be derived by experimenting with a flock of hens any more than with a herd of cows. As we stated the individuality of each member is something that presents an obstacle that cannot be removed. We can, by weighing the food, and noting the gain in weight of each individual, and her production, arrive at a knowledge of her relative and comparative value, but even then the gain in knowledge is slight and the final results far from conclusive. It is impossible to find any two individuals alike, whether birds or animals, and hence all experiments must be made in a manner comparative. There are nearly 100 breeds of poultry, and the field for observation is wide, but this is just the reason why more attention should be given in that direction, as the poultry interests demand greater and closer investigation than cattle or other stock.

It requires as much work to determine the facts relating to poultry as to farm products. The chemist who works with one bushel of corn is working on the entire corn crop of the country. To make an effort with a few hens is to experiment in the interests of all. Work must be done at different seasons, the age of each hen must be considered, the kind of food, the condition of the quarters, the period of the beginning and ending of laying by each, the particular time of moulting, vermin, diseases, quality and value of her product and other considerations.

All these matters require patient investigation; but it is for that reason they should be made—it takes time. No agricultural institute can take a small flock of hens and learn much in a few months. There is more to do than is supposed. What is necessary for the poultry interests of this country is for some experiment station to settle down to a long seige of work, and to be as patient at it as with cattle. The great poultry interests of this country demand it, for there are millions of dollars at stake, and much to be gained by the farmers.

Good Dairy Help.

In its notes for dairymen the *Mirror and Farmer* says that there appears to be a wonderful difference in milkers. Some get more and some get richer milk than others, while some get both. Regularity and irregularity in milking have their effect, irregularity resulting in less or poorer milk. But, aside from these considerations, there is an absolute difference in milkers. We have before mentioned this fact. Dr. Babcock says the milker to whom he referred, as always getting more and better milk than the rest, had previously been considered the poorest milker on the farm. "He had a rather nervous motion with his hands and undoubtedly manipulated the udder in a very different way from the other milkers. He did not milk as rapidly as some others, but somehow or other he always got richer milk from all the cows that we tested, without exception." This fact of slower milking will strike many as contrary to the popular notion that rapid milking is a dairy virtue. It would seem that it is neither slow nor rapid milking that excels, but the manner which best pleases the cow, as most of the milk is secreted during milking. The doctor said he had found that where milking tubes were used the average amount of fat was only about one-half as large per day as when the cows were milked by hand, while the amount of milk given was not materially changed. He gave it as his opinion, from the results of his trials, "that the introduction of machine methods for milking would result in a poor quality of milk and a shortened period of lactation, and in general in lowering the standard of our dairy animals."

Profitable Farming.

Prof. Henry Stewart writes that the profit derived is that sum left over from the gross receipts after all the expenses have been abducted, and the more economy practiced the smaller the expenses, and consequently there is a correspondingly larger profit. There are seasons of the year when it is difficult to curtail expenses, but farmers sometimes entail expenses that may be avoided by using discretion. To retain that which entails of itself an expense is to add to the expense itself, and to endeavor to do more than the capacity of the farm permits is to add expense by curtailing the productive power of those things that are more largely depended upon to afford a profit. Such is the case when the land is taxed to perform a service—that of producing a crop—without being supplied with the proper amount of manure or fertilizer, the expense of labor required to secure a crop from land so treated being sometimes equal to that necessary for the securing of abundant yields.

During the summer season all expenses are lessened to a certain extent, as the stock go to the food in the pasture, seek the water required, and need less attention to protect from the weather, while in the winter the food and water must be supplied at the barn. This handling of the food and the necessary management of stock is so much expense that must be incurred on all farms, but to economize in that direction the farmer should keep only the stock necessary to consume, and thereby convert into meat, butter and milk, the foods which are best salable in those forms. To retain something that does not produce him a profit is to incur an expense, and to be content with the produce of one half of the flock or herd, instead of demanding the full quota from all, is to compel the profitable stock to support that which is unprofitable, which doubles the expense to the farmer and also reduces his profits to that extent.

As the summer passes away and the cold season begins it must be kept in view that each animal must consume a greater proportion of food, and the reduction of expense must be made by reducing the number of animals, culling out all that do not give prospect of immediate profit. Expenses may be reduced also by plowing the land and hauling out manure at such seasons when it can be done advantageously, instead of waiting until pressing work is in the way; and expenses may be reduced by seeding down unoccupied land with rye, to be plowed under in the spring. There is no economy dispensing with necessary stock or tools, or omitting labor that should be applied, but everything for winter may be made ready in advance with a view to have all expenses reduced to a minimum, and in every direction.

The Manchester Courier of April 23rd, declared that the betrothal of Prince George, only son of the Prince of Wales, and Princess Mary Victoria, daughter of the Duke and Duchess of Teck, had been definitely decided upon, and that it would soon be formally announced. No surprise is occasioned by the statement. It was reported not long after the death of the Duke of Clarence and Avondale, the elder brother of Prince George, to whom the Princess was engaged, that such a marriage would be arranged. It is said that the Queen, who is extremely fond of Princess May, is heartily in favor of the betrothal, and, that, in fact, it was her influence that brought it about. The marriage of the Prince and Princess would doubtless be greeted with much satisfaction by English people, with whom both are extremely popular.

A summary of a series of articles in The American Agriculturist shows that for the year ending July 1, 1890, the total production of sugar in the world was 11,556,000,000 pounds. Of this aggregate the European beet contributed 7,100,000,000 pounds, leaving 4,456,000,000 to be credited to the tropical cane. Of cane sugar 1,340,000,000 pounds came from the Spanish West Indies, from the other West Indian Islands and Guiana came 786,000,000, from Brazil and Peru 360,000,000, from Louisiana 250,000,000, from Hawaii 240,000,000, and from the East Indies and Africa 1,480,000,000. The American supply comes in the main from the West Indies. Beet sugar finds its market in the European countries. The United States consumed in 1891 1,885,994 tons of sugar, or 363,263 more than in the previous year. Of this amount only 250,000 tons were of domestic growth. The bounties offered by the Government have not as yet very largely stimulated the growth of sugar in the United States, but Canadian authorities believe that there is a great future for the sugar-beet industry in that country.

RARE AIR

Recent Testimony of Mountaineers as to its Effect on the Human System.

One of the most interesting parts of Mr. Whymper's new book on his travels among the Andes of the equator, treats of the effect of the rarity of the air on the human body. Mr. Whymper has proved scientifically, what thoughtful mountaineers have asserted, that with the diminution of atmospheric pressure goes a diminution of physical power. He has made a more novel point by insisting that the human frame is affected in at least two distinct ways—one by pressure on the internal organs from the expansion of the gases within the body, and the other by the increased exertion required to inhale sufficient air to feed the lungs. The first cause creates the most frequent inconvenience on ascents up to 16,000 feet, and the mountain climber may suffer from it severely one week at 14,000 feet and escape it the next at 18,000 feet, as it depends largely on the temporary state of the organs. Mr. Whymper wrote his book before Mr. Vallot had made his interesting experiments on the top of Mont Blanc.

"Three days' residence on the top of Mont Blanc (15,780 feet), sufficed to entirely modify the method of my breathing," Mr. Vallot says, "The last day my pulmonary capacity had notably augmented. The number of inspirations was seventeen a minute in place of fourteen in the plain. The depth of the inspirations was doubled. Thus, the air being twice less dense than in the plain, there entered twice as much air into the lungs, and the equilibrium was thus established. I felt no symptoms of mountain sickness."

In 1889 Prof. Janssen ascended Mont Blanc. It was a theory of his that to retain the full use of one's faculties, mental and bodily, at 16,000 feet, it was necessary to avoid physical exertion, and as he was to undertake scientific observations he had himself dragged up on a sled to the top. It is probable that neither Whymper nor Vallot would endorse Janssen's theory with regard to the impairment of the mental faculties at a lofty elevation. Last year a lot of workmen had some rough experience on the top of Mont Blanc, while they were trying to dig a tunnel there. Their experiences led them to the conclusion that in the same time they did one-third less work than they could do at ordinary levels.

Mr. Freshfield, the well-known mountaineer, and some other authorities believe, however, that the lungs adapt themselves rapidly to new conditions, and the limits of their power of adaptation must be determined. The height to be attained by men who have camped for some time previously at or above 20,000 feet remains to be ascertained. Mr. Freshfield says it is evident that the effect of low atmospheric pressures is modified or intensified by accidental atmospheric conditions. During the first ascent of Mt. Elbruz in the Caucasus (18,500 feet), with six men, nobody was effected consciously by the rarity of the air. During the second ascent, all the members of an equally competent party suffered more or less. The first party made the ascent when a high wind prevailed and the other party when no breeze was stirring. The inference is that the high wind brought plenty of air to the party at their lofty elevation.

On Monte Rosa, mountain sickness is very rare. "We cannot but believe," Mr. Freshfield says, "that mountains which project like promontories above the lowlands, and up whose slopes rush draughts of air from the plains, will be found the best for the attainment of the highest possible elevations."

Mountaineers now regard the Asiatic ranges as the best field for the solution of the question of the effects of rarity of air upon the human system. It is important to bear in mind that the atmospheric pressure diminshes in a decreasing ratio as one ascends, and that the difference between 15,000 and 30,000 is very much less than that between the sea level and 15,000 feet.

How Long Before the End of the World.

There is a distinct limit to man's existence on the earth, dictated by the ultimate exhaustion of the sun. It is, of course, a question of much interest for us to speculate on the probable duration of the sun's beams in sufficient abundance for the continued maintenance of life. Perhaps the most reliable determinations are those which have been made by Prof. Langley. They are based on his own experiments upon the intensity of solar radiation, conducted under circumstances that give them special value. I shall endeavor to give a summary of the interesting results at which he has arrived.

The utmost amount of heat that it would ever have been possible for the sun to have contained would supply its radiation for 18,000,000 years at the present rate. Of course, this does not assert that the sun, as a radiant body, may not be much older than the period named. We have already seen that the rate at which the sunbeams are poured forth has gradually increased as the sun rose in temperature. In the early times the quantity of sunbeams dispensed was much less per annum than at present, and it is therefore quite possible that the figures may be so enlarged as to meet the requirements of any reasonable geological demand with regard to past duration of life on the earth.

It seems that the sun has already dissipated about four-fifths of the energy with which it may have origainally been endowed. At all events, it seems that radiating energy at its present rate, the sun may hold out for 4,000,000 years, or for 5,000,000 years, but not for 10,000,000 years. Here, then, we discern in the remote future a limit to the duration of life on this globe. We have seen that it does not seem possible for for any other source of heat to be available for replenishing the waning stores of the luminary. It may be that the heat was originally imparted to the sun as the result of some great collision between two bodies which were both dark before the collision took place, so that, in fact, the two dark masses coalesced into a vast nebula from which the whole of our system has been evolved. Of course, it is always conceivable that the sun may be reinvigorated by a repetition of a similar startling process. It is, however, hardly necessary to observe that so terrific a convulsion would be fatal to life in the solar system. Neither from the heavens above, nor from the earth beneath, does it seem possible to discover any rescue for the human race from the inevitable end. The race is as mortal as the individual, and, so far as we know, its span cannot under any circumstances be run out beyond a number of millions of years which can certainly be told on the fingers of both hands, and probably on the fingers of one.

ODDS AND ENDS.

There are false teeth for horses.

The capital of the Bell Telephone is $17,000,000.

A quarter of Scotland is owned by twelve persons.

The directors of the World's Fair have spent $20,000 already in postage.

Four thousand one hundred and seventy-five men are now employed upon the World's Fair grounds.

A young man hypnotized at an entertainment at Paris remained senseless for two days, and was with difficulty brought back to consciousness.

The Navajo Indians are very superstitious. Not one will ever enter a house in which death has been, and the wide domain of of this tribe is full of huts abandoned forever.

According to theosophists 360 days and nights of Brama make one year of Brahma, and 100 years of Brahma make the Great Kalpa, a period of 311,048,000,000,000 years, after which the entire solar system passes into its night, and everything in it is destroyed on the objective plane.

The oldest striking clock in England is one made in Glastonbury Abbey by Peter Lightfoot, one of the resident monks, in 1335, and removed in Elizabeth's reign from Canterbury to Wells Cathedral. It was exhibited at the South Kensington Museum, having been lent by the Dean and Chapter of Wells.

From an ancient account book found at Eastport, Me., it appears that in 1797 tobacco was sold by the yard in that settlement. The limited purchasing power of a day's wages at that period is shown by the price of nails—1s. 2½d. a pound. A day's ordinary wages would pay for about four pounds of nails.

A gentleman traveling in Japan broke the mainspring of his watch, which he took to a native village jeweler. The watch was returned, apparently in as good running order as ever, and it kept good until the rainy season set in, when it stopped. Being in the city of Tokio at that time the traveler took the watch to an English workman, who was astonished to find that the cunning Jap had put in a spring made out of bamboo, which so long as it kept dry remained elastic, but during wet weather had gathered dampness and lost its power.

Serious Times in Australia.

A grave financial crisis in Australia is predicted by some, which may prove more serious in its effects than the collapse in the Argentine Republic, because the English holdings in Australia involve much larger amounts of capital. Remarking on the subject a contemporary says: While English holdings in Argentina were speculative, Australian securities have ranked with English and have been treated as sound investments. They have begun to fall and are certain to fall heavily. For one thing the drought last year swept off 12,000,000 sheep in Australia, one-tenth its flock, and worse is looked for this year. Every Australian colony is now passing through a terrible panic, banks and land mortgage companies are failing, government railroads are loosing money, and the colonial treasuries are forced at a time of great depression to increase taxation—doubling the rate for postage in Victoria, for instance—to meet the fall in revenues for railroad deficits. It is always easier to see that a storm is coming than to predict its hour or extent. All the Australian colonies are now passing through a financial crisis which has filled their cities with starving workmen, checked their development, and ruined a large number of land mortgage companies whose shares are held in England. At least two-thirds of the total Australian debt to England is, however, in colony bonds. These were borrowed at low rates, far lower than the loans raised in Argentina. The colonies can, at worst, readily raise the money to pay the interest on the loans, and a default on Australian interest is not probable, though possible. But heavy losses on other forms of Australian debt held in England are certain. This is sure to lead to free sales in England of American securities. It will also, by checking Australian railroad building, deprive British iron and steel industries of their best customers and add to the universal world depression in price and consumption in the iron trade. It is, in fact, hard to see how for at least a year to come the situation in Australia can fail to produce a depression in England which will be felt here and which will continue the present reign of low price the world over.

A Language of Sealing-Wax.

In the windows of fashionable stationers in Paris, rows of sealing wax of all hues and shades are ranged in order like the colours of the spectrum. A meaning attaches to each of these colours. Thus, white sealing-wax means a proposal of marriage; black a death; violet, condolences. Invitations to dinner are sealed with chocolate colour; vermilion is used for business letters; ruby colour by fortunate lovers. Green means hope; brown, melancholy, derived possibly from "brown study;" blue, constancy; yellow, jealousy. Pale green conveys a reproof; pink is used by young ladies; and grey between friends.

Couldn't Fool Her.

"What have they wound up on that cart?" asked an old lady who was visiting the fire-engine house.

"Firemen's hose," was the answer.

"Go away," she rejoined indignantly; "you can't make me think that any firemen or anybody else ever had legs to fit those."

The Cat Was Worth Keeping.

Smith: "I thought you was going to drown that cat?"

Jones: "Well, they say a cat has nine lives, but this one has twenty, I think. Why, I actually put this cat in a tub of water and tied a brick round its neck, and what do you think?"

Smith: "Goodness knows."

Jones: "Well, next morning when I went to look at the pail the cat had swallowed all the water and was sitting on the brick!"

The Emperor of Germany has a quick eye, and shoots always with an English gun.

"The Platform, Its Rise and

Mr. Gladstone has made his la[illegible] ance as a book-reviewer, and cont[illegible] the current number of the *Ninetee[illegible] tury* a few paragraphs written abo[illegible] Henry Jephson's two octavo volum[illegible] "The Platform, its Rise and Progress." [illegible] any living man understands the power [illegible] the platform, it is Mr. Gladstone. By it h[illegible] has ruled Britain through many a year. The memory of his Midlothian campaign against the last Disraeli ministry remains with all who heard the Liberal leader on any of the ringing platforms of that time and the result was the crushing overthrow of the Administration. This was a most signal victory for the eloquence of the great Commoner, for the thunderers of the metropolitan press were against him, and he fought without the effective campaigners lately brought to him by the Irish alliance. Mr. Gladstone traces the beginning of the power of the platform, showing that it was not always for good in its early turbulent days, when "the disgraceful Gordon riots in 1780" took rise in a public meeting, with Lord George in the chair. Later, the platform was silenced in "the second and descending period of the statesmanship of Mr. Pitt;" while "the slaughter of eleven persons at a meeting in Manchester in 1819 denotes the high water mark of insolent repression." It must be borne in mind that this was just after the close of the Nepoleonic wars, when England was not in her calmest mood. The platform is united in Mr. Gladstone's mind with two other P's—the right of petition and the press. The Montreal Star says that "out here in Canada we know little about the first. We did not grow up through that stage of popular agitation, for even Lyon Mackenzie had his printing press and the platform has always been free. To-day, petition is a farce, and very nearly a nuisance. Formal petitions of all kinds are required by the rules of Parliament, but they are read by title only and with a dislocated elocution that would effectively disguise the reading of the alphabet. The privilege of petition has served its day, and should be presented to the museum of historical antiquities along with the custom of reading news notices from the pulpit. Still, we must not forget that it once was a power in the old land, the Wilberforce agitation against slavery finding in it a most potent engine."

The growth of the influence of the press and platform from the decay of the cumbrous petition method is traced by Mr. Gladstone. He says:—"A considerable time elapsed with nothing more than gradual growth in the action of the Press; but after the repeal of the Stamp Duty, and especially after the repeal of the Paper Duty, the sphere of this action became enormous, and the newspaper proved itself to be a mighty agent, both in the sphere of politics and in the mental training of the people. The Platform exercised a great power throughout the period; chiefly, however, during the greater part of it, on the recurrence of a general election, or locally on the occasions when a member of Parliament rendered his account to his constituents. Sir Robert Peel and his party greatly helped it forward; for the Platform includes the banquet, and his speech at Glasgow, in January, 1836, where some 3,400 persons met him at dinner, offered one of the most remarkable examples ever known of its use. It has, however, been during the last quarter of a century that it has most conspicuously developed the power of public meetings. On the question of the Irish Church in 1868, on the policy of the Beaconsfield Government in 1876-80, on the extension of the Franchise in 1884, last and most of all on the Irish question of 1886-92, which has united the intensity of a Parliament the Platform has asserted itself with an ever-increasing intensity of action. In 1868 and 1884, the cause favored by the Platform was also that of the Press. In 1876-80 the metropolitan Press was against it; but it had the support of the chief provincial newspapers." Coming down to the present struggle over the question of Irish Home Rule, the venerable champion, who knowingly fights in this, his last battle, believes that the platform is again triumphing over the press. "Most of all," he says, "have the circumstances of 1886-92 been remarkable. For here, while the Platform has worked predominantly on one side, the large majority of journals having the widest circulation have taken the other; while petitions may be put wholly out of the account. If, then, this had been a contest between the prevailing forces of the Press on the one side, and the platform on the other, there seems to be some color given to the opinion that the Platform at its maximum of power is stronger than the Press. For, during some five years, over a hundred Parliamentary elections have been giving no inconsiderable indication of the sense of the people, and in these elections a balance of no less than twenty seats have been carried over from the side supported by the Press to that espoused by the Platform." In this comparison he limits the expression—the press—to its editorial columns. As the Star further remarks, "What the giants of the platform would do in these days without the publication of their speeches in the press, would be very little indeed. The newspaper is an elevated platform, from which all, with anything to say, may speak. To pit the press against the platform is to compare the bugle with the penny whistle; and in both cases much depends on whose lips are against the mouth-piece." Mr. Gladstone has a word of comfort for the press, however, in closing: "But let not the press tremble for its prerogatives. The platform indeed both displays and generates living energy. It quickens sympathy, besides increasing information, and it brings to bear the whole power of fellowship in a cause. Yet it is in the main an occasional and intermittent power, while the action of the press is continuous and permanent as that of old time himself." Patrons of the platform will do well not to confuse Mr. Gladstone's conception of that instrument of power, with stump-oratory. They have little in common. If none but the stump-orator mounted the platform it would never command a hearing. It is the Gladstones and the Webasters and the [illegible] that have made the [illegible]; and it is a regrettable fact that the platform of this calibre has too little influence in Canada.

A Sad Misapprehension.

Miss Seventigures: "Oh, Mr. Gilthunt, this sudden proposal surprises me—I am embarrassed."

Mr. Gilthunt: "Embarrassed? Then I take it all back. I thought your fortune was as safe as the Bank of England."