FARM·FIELD AND GARDEN

SCIENTIFIC BREEDING.

The principles of breeding have been diligently sought by thousands of breeders, but not with that understanding that would give the elementary lessons that lead to ultimate success. The fundamental principles of breeding are as old as creation and through all the ages they have been immutable. There are four of them: like begets like, variation, selection and environment. Some have tried to add to these a fifth, and that is atavism or reversion; but this is a mistake, as atavism is but a manifestation of the first great law, that like begets like. Avatism is the reversion to a type established by an early line of ancestors.

To succeed as a breeder and a moulder of the breed that you would improve there must be an ideal or a fixed type set by yourself toward which you will work. There must be an improvement in that ideal and it must be better than any man now has. This ideal must be

DEFINITE AND CERTAIN;

there must be a working to some end. In breeding as in all other business you must know what you want before you go after it, then and then only can you hope to succeed. To take the Fhorthorn breed as an Illustration: Thomas Bates bred for an ideal and reached it, but it took long and persistent endeavor; there were disappointments and failures and before each move there was long and deep study. The experience of Amos Cruikshank was the same, but ever he held to the ideal and he won. These men recognized the immutable laws: like begets like, variation, selection and environment. And it is more than probable that they knew the history of every animal that they used from the day of its birth to the day they put it on trial; that they knew his progenitors for at least four generations on both sides; that they knew the variations in these same animals and that the selection of any animal was made according to whether or not the animal had the characteristics and his ancestors had them too, and not because he was recorded in any herd book or was the winner of ribbons

RED, WHITE AND BLUE.

Then you can be sure that they looked well to environment and that the surroundings of these animals were of the best, for it was not in these men to jeopardize success by poor surroundings after all their pains and trouble in the selection of what they believed suited to the attainment of the end they sought.

With an intelligent application of the four fundamental principles of breeding any man of average intelligence can hope to succeed as a breeder of live stock, but to be a master in this the highest of all professions takes a master mind with unceasing application. Haphazard mating of animals of the same breed that have won at the stock shows can mean nothing toward success unless an accident. You might meet with an accident and get a winner if you are lucky, but you will recall the old saying, "It takes a fool for luck." If you are a fool take your chance and see how luck will serve you. No great battle was ever won without a definite plan and no business success was ever made without the hardest kind of work. You may not always be able to see the work, but it is always there.

FARM TOPICS.

The farmer who adopts a wise rotation of crops, who raises upon the farm the products for the support of his stock and his family, who seeks to increase his stock of manure from every available source, and applying it back to his land, will not likely complain of his farm running down. Strength, endurance and speed in a horse are not developed by violent usage but rather by judicious amount of exercise given so as to develop but not strain. When the training goes beyond a certain point it becomes injurious, so that the development of muscle, strength and the power of endurance, comes within the trainer's province.

Though not grown as extensively as some other roots in Canada, mangolds are a valuable crop to grow. No other crop can be grown continuously on the land from year to year and get a good yield as can mangolds. At the great Rothamsted Experimental Farm in England mangolds have been grown continuously on the same land for 27 years.

Good tillage does not consist in stirring the soil only often enough to kill the weeds, but stirring it often enough to keep mellow and in a fine tilth, whether there be weeds to kill or not. The better rule when it can be done, is never to allow the weeds to make their appearance above the ground. If they can be destroyed as soon as they germinate, they can be most thoroughly destroyed.

The flavor of eggs is influenced by the food. This may be easily tested by shuting up a laying hen and giving her garlic which will be found to indicate the flavor. Another theory (but which is not fully confirmed) is than an egg laid on any strong-smelling substance will contract the odor. This is explained by the fact that the shell, when the egg is first laid, is comparatively soft and impressionable and becomes hard only after contact with the atmosphere. It is more probable, however, that an objectionable flavor is due to the food. Tainted food or drink should not be given under any conditions.

Eggs should be collected daily, and not left lying about the runs or in the nest boxes. As a rule this work is regularly done each morning, but in most flocks there are a few hens who lay later than the others, sometimes not producing their eggs till midday, or after. If an egg is left lying about on the ground, it is apt to get broken, and in this way not a few egg-eaters are made.

The walk of a young horse is largely influenced by the driver. If you put a horse into the care of a slow, idle man, or if a young horse is driven by a slow, careless man the animal will acquire a habit of slow motion that it will be difficult to overcome. In a majority of cases a slow, trailing gait makes really harder work for the horse. A moderately quick walk, with at least all ordinary farm work, exhausts the animal less than a slow gait.

From the time the root-crop begins to show itself above the ground the cultivator should be kept going. Forty or fifty years ago the farmer cultivated corn and potatoes to kill the weeds that grew in them. Now-a-days the farmer cultivates for other purposes and incidentally to kill weeds. The good farmer of to-day knows that cultivation unlocks plant food, helps to conserve moisture and aerate the soil and at the same time kills the weeds.

It is better to allow hens to sit than to prevent them, but there are times when too many wish to do so.

When a hen wishes to sit, she is usually fat, the egg-producing capacity of her system, for the time being has become exhausted and recuperation is needed. The first step to such recuperation is rest, and being naturally an industrious bird she feels that she may as well raise a brood while resting. Avoid any cruel method. Place the fowl in a coop made of slats—top, bottom and sides—raised from the ground. As she can see everything around her, thus being disturbed and unable to create warmth, the air under her being cool, she will abandon the attempt.

Piles To prove to you that Dr. Chase's Ointment is a certain and absolute cure for each and every form of itching, bleeding and protruding piles, the manufacturers have guaranteed it. See testimonials in the daily press and ask your neighbors what they think of it. You can use it and get your money back if not cured. 60c a box, at all dealers or EDMANSON, BATES & CO., Toronto.

Dr. Chase's Ointment

PERSONAL POINTERS.

Notes of Interest About Some Prominent People.

Mr. Austin Chamberlain, the British Chancellor of the Exchequer, has an extensive knowledge of agriculture, and one of his recreations is the running of a dairy farm, in which he takes a keen practical interest. The farm is, as may be supposed, kept mainly for pleasure; but it is conducted on economical principles, and has proved a signal success.

From grocer-boy to scientist is the honorable record of Dr. John James, head of the Physics Department, High School, Middlesbrough, England, who was recently appointed Director of Education for the county of Glamorgan. He began life as a grocer's apprentice, but subsequently went to Oxford, where he obtained his B. A. and B. Sc. degrees.

Dr. Penticost, the famous preacher, is a picturesque personality. Born sixty-one years ago, in Illinois, the lad, through the failure of his father, had a rough life as a laborer on the high roads, wood-chopper in the forests, and hotel servant. At nineteen he became deputy-clerk to the United States Supreme Court at Kansas, studied law, then entered a theological training college, enlisted for the Civil War, resumed his profession of the law, and at length became a Baptist minister.

Lord Radstock, who is now in his seventy-first year, is a man of strong religious convictions, whose sermons are much more eloquent than his speeches in the House of Lords. So daring has he been in his missionary enterprise that thirty years ago he invaded Russia and founded a sect after his own heart—the Pashkoffski. The price he paid for his daring was that he was forbidden to enter Russia again, so alarmed were the authorities at the possibilities of his zeal.

There are many stories told of the absentmindedness of the late Professor Mommsen, the German historian. On one occasion he was with his son, then a boy of ten, in a street-car. The latter fidgeted about so much that the Professor, who was lost in thought, turned sharply upon him and asked him his name. "The same as yours, sir," was the answer. The onlookers who had grasped the position and recognized the diminutive figure of the distinguished savant, were vastly amused. Another instance is recorded when the Professor was discovered composedly deciphering Roman inscriptions by the light of a candle while his hair was on fire!

Sir Reginald Hart is the happy possessor of many decorations, of which five are for personal bravery. First and foremost comes the V. C., which he won in 1879 by saving a trooper of the 13th Bengal Lancers in the Afghan campaign; then there is the Royal Humane Society's silver medal, together with a clasp which was added for saving the life of a native in India; while the fourth and fifth decorations are medals presented to him by the French President and the Mayor of Boulogne for saving life in that town. Besides these, General Hart wears the medals for several Indian campaigns, as well as for Egypt and, of course, South Africa, where he was with General Buller on the Tugela.

The King of Roumania, for whose Queen the British cherish a genuine affection as "Carmen Sylvia," is Sovereign of the youngest monarchy in Europe. He was a grim, hard-fighting soldier before he was permitted by the Powers to be a Sovereign. He commemorates his origin in a singular fashion. The crown he wears is of solid iron, plain and unadorned. It was fashioned, by his desire, from a huge cannon which he and his brave Roumanian troops captured from the Turks at Plevna. Unadorned, heavy, sombre-looking, the crown for which he fought and won is unique amonf diadems. His beautiful Queen, too, wears a crown remarkable for its simplicity and inexpensiveness. It has not a jewel in it, but is just plain beaten gold, which the rough-and-ready goldsmiths of Bucharest made her two-and-twenty years ago.

Dr. Alfred Russel Wallace, of England, who is nearly eighty-one, made his great name just short of half a century ago, when, as a young surgeon in the Malay Archipelago, there occurred to him that theory of natural selection which also occurred independently to Darwin some years earlier, and to Herbert Spencer earlier still. It is a noteworthy fact that both Darwin and Wallace have told us that they reached the idea as a direct result of the reading of Malthus's essay on population. Besides being a vigorous defender of spiritualism, Dr. Wallace has committed himself to entire faith in phrenology, and is an ardent anti-vaccinator. Until the present year he has never published any work upon astronomy. There can be little question that his last book, with its 839 pages, constitutes one of the most remarkable instances of rapid and exhausting work ever achieved by an octogenarian

SALT WATER EXPERIMENT

THE REMEDY WAS WORSE THAN THE DISEASE.

People of Hastings, England, Thought They Had a Panacea for Civic Ills.

While very much is heard of the success that attends municipal ownership in English and Scotch cities, very little is heard of its failures. The most notable failure in this new method of supplying utilities to the people and of doing public work by public machinery is that of the great salt water experiment which recently ended in economic disaster for several coast cities in England. It was not long ago that some alert genius in the town of Hastings conceived the daring and original idea of "harnessing the ocean" to sprinkle the streets of that city. So simple was the plan and so obvious was its desirability that the municipal fathers of Hastings proceeded without delay to put it into effect. Of course, the execution of the plan was quite expensive. An entire new plant for pumping and mains was necessary, but expense is no object when the public pays the bills, especially when the public is vastly benefited by the expenditure. And in this case there was manifest a double desirability inasmuch as a large revenue to the city was clearly in sight. Why not extend the pipe system generally, so that anyone who desired it could have his salt water dip in his own private bathroom? It was an alluring prospects, and the plans went through with a rush.

ADVANTAGES APPARENT.

News of the salt water system in Hastings spread rapidly and a number of coast towns took advantage of the example and were presently equipped with pumps and pipes in plenty. The system seemed to be the very acme of desirability and perfectibility. Numerous advantages not thought of before were discovered as soon as it was put into actual practice. Sea salt is known to have considerable antiseptic power, and its presence in all the streets had a most salubrious effect on the general hygienic state of the town. This, in connection with the fact that everybody who could afford it had private sea water bathing facilities, wrought a two-fold good effect on the general health. Again, the salt, being highly hygroscopic, or water absorbing, the general humidity was reduced. Still again it was found that as the salt accumulated on the surface of the streets it formed a hard and neatly rounded roadbed. Lastly—and possibly the most desirable feature of the entire affair—the revenue to the city from private consumption was vastly larger than even the most urgent advocates of the plan had looked for. In one word, the system proved itself to be an unqualified success, no matter how its most fastidious critic was disposed to look at it. The genius in Hastings who originated the idea became quite popular and was praised as a positive benefactor to his kind. So much for the bright side of the picture. Now for the dark.

SALT, SALT EVERYWHERE.

All students of chemistry know that common salt possesses the property of deliquescence, which is another name for the taking up of water from the air. Salt takes up water from the air—that is, it becomes wet. When there is very little humidity in the air salt remains comparatively dry; when there is much water in the air it becomes quite wet. Now upon dry days the salt on the streets of our English coast towns became dry and was blown about by the winds. It settled on the goods in shops, worked its way into the most remote corners of cloth and clothes, settled upon fruits and vegetables, upon carpets and furniture, and, in short, it did precisely what fine dust will do. But, unfortunately, it was deliquescent, and, unlike dust, it took up water from the air and became wet, thereby making havoc of values in almost every kind of commodity upon which it had settled.

But this was only part of the trouble. The flying salt not only ruined the clothes people wore, but it got into eyes and mouths, which is not the most pleasant thing imaginable by any means. It clung to the wheels of carriages, destroying the paint thereon, and was dashed wet against the bodies of the carriages, eating away the varnish and the color there. It formed crystalline layers on boots and shoes and defined to be removed even with the aid of spatulas and knives. And if no more could be said of it, it was by this time preceived to be a positive public nuisance.

Alas! Not half has been said of it yet. For this omnipresent and pestiferous salt, not content with working above ground, must needs carry on its depredations in the dark and underground. For it was found that it corroded the pipes through which it was distributed, causing leaks without number and without warning of when and where they were about to occur. Families awoke to find their houses deluged with sea water. People could not sit down to a meal without dread of interruption from a gushet of the salubrious sea, where as the sudden bursting of large street mains was the occasion of several deaths before relief could be had from headquarters.

NUTS FOR PESSIMISTS.

Now the worst of pessimists could not ask for more in the quantity and quality of this public curse. And yet the tale is not all told. There was yet another and a life-destroying effect from the salt water system which, if it did not kill men, at least killed much that was very dear to men—namely their trees and shrubbery. The leakage from the pipes seeped through the earth, and attacking the roots of vegetation destroyed all the greenery in these salt-cursed cities of the English coast. Grass, flowers, trees, vines, all plants that drew their nourishment from the wet earth were fed upon salt solution, wilted, drooped and died.

All these effects were felt simultaneously. They did not occur precisely one after the other. A little time was required for the salt to permeate above and below ground, to a reasonable extent before it began to make itself the most conspicuous fact in the life of these communities. Its pall fell all at once. It was a long time coming, but it came. It covered everybody and made everybody perfectly miserable in mind and body. And as nobody in particular could make a fortune out of it, it was forthwith lifted and put away forever.

The salt water system has been the most disastrous experiment tried by the municipal ownership-governed towns of England and the suggestion has been made that these towns would have been in a pretty fix had they given a twenty-five-year franchise to a London company to supply them with the blessings of "ocean water harnessed to your hand."

THE AVERAGE BABY.

The average baby is a good baby—cheerful, smiling and bright. When he is cross and fretful it is because he is unwell and he is taking the only means he has to let everybody know he does not feel right. When baby is cross, restless and sleepless don't dose him with "soothing" stuffs which always contain poisons. Baby's Own Tablets are what is needed to put the little one right. Give a cross baby an occasional tablet and see how quickly he will be transformed into a bright, smiling, cooing, happy child. He will sleep at night, and the mother will get her rest too. You have a guarantee that Baby's Own Tablets contain not one particle of opiate or harmful drug. In all the minor ailments from birth up to ten or twelve years there is nothing to equal the Tablets. Mrs. W. B. Anderson, Goulais River, Ont., says: "My little boy was very cross and fretful and we got no rest with him until we began using Baby's Own Tablets. Since then baby rests well and he is now a fat, healthy boy."

You can get the Tablets from any druggist, or they will be sent by mail at 25 cents a box by writing direct to the Dr. Williams' Medicine Co., Brockville, Ont.

LITERARY PRODUCTION.

Books Printed Since the Invention of Printing.

Paul Otlet, the secretary of the Brussels International Bibliographical Institute, estimates the number of printed books since the invention of printing to January, 1900, at 12,163,000 separate works, and the number of periodicals at between fifteen and eighteen millions.

For the following years Otlet adopts 200,000 as a yearly average. This seems rather high, and the figures of this table, which would make 150,000 a year a good average, seem more reliable:

1436-1536	42,000
1536-1636	575,000
1636-1736	1,225,000
1736-1822	1,839,000
1822-1887	6,500,000
1887-1898	1,782,000
1899	150,000
1900	150,000
1901	150,000
1902	150,000
1903	150,000
Total	12,713,000

To the year 1904, therefore, upward of 12,500,000 separate works have appeared in the world, which figures, however, include new editions and translations.

In point of number of output, Germany and German-Austria, collectively, yearly lead the world. Then follow France, Italy, England, the United States and the Netherlands. Germany leads the world in book production, and the United States the world in the production of periodical literature.

AN ELOQUENT PERORATION.

"And," said the rising young politician as he reached his eloquent peroration, "I predict that our candidate will, when the votes are counted, be found to have ridden to success upon a tidal wave of glory that will have swept all before it like wild-fire breaking in flying spray upon the strand where the sun of victory shall blaze forth its first effulgent rays upon the close of one of the most noble, most memorable campaigns that have ever been launched upon the sea of politics to gather strength and carry all before it like the cyclone sweeping across the broad prairies from which even the orb of day has disappeared in terror."

A woman may cure her husband of the tobacco habit by purchasing his cigars for him.

Some Indications of Nervous Disorders

The Warning Signals Which Foretell the Approach of Nervous Prostration, Paralysis and Locomotor Ataxia.

Twitching of the muscles, sensitiveness to light, sound and motion, grinding of the teeth during sleep, jerking of the limbs, continual movement such as tapping the fingers—these are some of the symptoms of exhausted nerves.

Intervals of wakefulness, headache during the night, sparks before the eyes, disorders of sight and hearing, are other indications that nervous collapse is approaching.

Because there is no acute pain people do not always realize the seriousness of nervous diseases. They do not think of the helplessness of body and mind, which is the result of neglecting such ailments.

Because of its extraordinary control over diseases of the nerves Dr. Chase's Nerve Food has come to be considered the one great treatment for disorders of this nature.

This great food cure not only revitalizes the wasted nerve cells, but actually forms new firm flesh and tissue, builds up the system and sends new vigor and vitality to every organ of the body. Being composed of the greatest restoratives of nature it is bound to do you good.

Mrs. Drinkwater, 5 Water St., Galt., Ont., states:—"My great trouble has been with my nerves. I was very nervous, had twitching of the nerves, and could not get to sleep at night. I seemed quite worn out, and believing that I needed some medicine began to use Dr. Chase's Nerve Food. I can truthfully say that this preparation has proven surprisingly beneficial to me. It has strengthened and steadied my nerves, made me rest and sleep well, and in fact built up the system generally."

Dr. Chase's Nerve Food, 50 cents a box, at all dealers, or Edmanson, Bates & Company, Toronto. To protect you against imitations, the portrait and signature of Dr. A. W. Chase, the famous receipt book author, are on every box.