

In treatment, the physician, whilst determining from the joints voided in the stools which kind of worm his patient is suffering from, keeps him on a reduced diet of clear soups and slops for some days, to get the stomach and entrails completely empty, when he gives a vermifuge best adapted to the kind of worm, and follows it with a strong purgative. He then, under a magnifying-glass, examines every atom of the stools, to see if the head of the worm or worms has been passed. If so, the cure is complete; if not, and only several yards of the body of the worm has come away, leaving the head, he sets to work to build up his patient's strength again for another attempt. We have a friend whom the most learned London physicians, after several attempts, gave up as incurable, and who carries his worm to the present day, and will do so till it dies of old age—the supposed length of life of this parasite is fifteen years.

The *Toenia* found usually in the Ostrich is known as the broad tape-worm, or *Bothriocephalus*. Dr. Becker, of Grahamstown, reports discovering in one case a *Toenia Serrata*, the small tape-worm common to the dog, but this is the only case in which we have heard of it. We shall, therefore, confine our remarks to the common one. This is found in great numbers in the same host; probably fifty or more could be counted. It is either

swallowed in the water, or, as we believe, with the herbage. The white spots voided with the dung are each one a perfect worm, and they may be observed on a fresh stool stretching out their heads and putting out their feelers to grasp the intestine should they have the good fortune to be swallowed by a bird; but we expect, as a rule, it is only those that get washed off the dung, and are voided in the urine, and thereby get a chance to hang on to the grass, that get swallowed.

We have tried all the vermifuges mentioned in our list, with the exception of kausau, but have found none satisfactory except turpentine and male fern.

We infinitely prefer the former: it is more certain in its action, acts at the same time on the kidneys, and is cheaper. But with them both, the line between a sufficiently large dose to be effective, and that which will cause the bird to be seriously affected, even if it is not fatal, is small; and, worse still, this line does not always seem to be the same for different lots of birds of the same age; so that it is always advisable with young chicks to try two or three, with the sized dose it is intended to give, a couple of days before physicking the lot, and observing the effect. If the dose is too large it will make them drunk, stagger in their gait, and fall about; if not fatal at the time it does not appear to do them any permanent harm. If the dose is not

strong enough the joints will continue to be voided, but, of course, in any case this will continue till the dung that was in the intestines previous to the exhibition of the medicine has all been voided. The worms will not always come away; in many cases they appear to be killed and become digested with the other food, but if, after three days, the joints cease to be voided, the desired end has been obtained.

The doses we recommend are :—

TURPENTINE.

4 months' chick	...	...	...	$\frac{1}{2}$ fluid ounce.
6 "	"	"	...	$\frac{3}{4}$ " ounce.
9 "	"	"	...	1 " ounce, F 3.
12 "	"	"	...	$1\frac{1}{2}$ " ounces.
18 "	"	bird	...	$1\frac{1}{2}$ " ounces.
2 years and upwards	...	...	...	2 " ounces.

MALE FERN.

4 months' chick	...	...	...	$1\frac{1}{2}$ fluid drachms.
6 "	"	"	...	2 " " F 3.
9 "	"	"	...	$2\frac{1}{2}$ " "
12 "	"	"	...	$3\frac{1}{2}$ " "
18 "	"	bird	...	4 " "
2 years and upwards	...	...	...	6 " "

In every case the dose should be most carefully measured, for which purpose the following table will be found handy :—

1 tea-spoon = 1 fluid drachm.

2 tea-spoons = 1 dessert-spoon = 2 fluid drachms.

2 dessert-spoons = 1 table-spoon = 4 fluid drachms.

2 table-spoons = 1 fluid ounce = 8 fluid drachms.

2 fluid ounces = 1 small wine-glass.

26 " " = 1 quart bottle.

40 " " = 1 imperial quart.

The ingredients to be mixed with flour into a good adhesive consistency, and then divided into two pills. A convenient way of doing this, is to multiply the number of birds to be dosed by the quantity to be given each bird, then weigh a bath or dish, and put the quantity of ingredient required into it, adding flour till the desired consistency is obtained; then weighing the bath and all, and deducting the weight of the bath previously ascertained, we have the net weight to be divided by twice the number of birds to be physicked as the weight for each pill. Turpentine, it should be borne in mind, soon evaporates. The birds having been shut up from early the previous evening, and fasted till about eight in the morning, the first pill should be given, and three hours afterwards the second; then fast them two hours more, when they can be turned out to graze, but they should be kept away from water. We do not advise following the dose with a purgative, as is often done.

The post-mortem appearances of a bird dying of tape-worm are, with the exception that the stomach is per-

factly sound, in every way the same as in the case of the *Strongylus Douglassii*, which will be described in the next chapter.

Although our experiments with areca nut have not been satisfactory, we should like to see it further tested in conjunction with other vermifuges, because it acts as a strong purgative, and in the short time of two hours after being given. Although quarter-ounce doses given to some four months' old chicks made them drunk, and purged them, it was quickly over without any permanent ill effects; and as an experiment we gave half-ounce doses to two five months' chicks with the same results. Now, had the same amount of drunkenness been set up with male fern, a large number of the birds would have been killed, and the others seriously weakened; whilst with the nut, about three hours saw the effect worked off, and the birds were far brisker than before the dosing. This makes us think it may yet prove a valuable vermifuge for Ostriches, but it must be given in conjunction with something else; as, in the cases here quoted, and where it would appear as much as was safe was given, all the birds were not cured.

CHAPTER XXII.

STRONGYLUS DOUGLASSII.

THIS is the name that Dr. Spencer Cobbold, our greatest living authority on "Entozoa" (Internal Parasites) has given to the small worm which I discovered two years ago, inhabiting in countless numbers the stomach of the Ostrich, and which is a totally new worm to science.

Two years ago I was struck with the similarity of the symptoms described in the birds that had been dying so much in the western province, in the midland districts, and a few that had commenced to die in the eastern districts, and I seized the first opportunity that offered of making a post-mortem examination of some birds that were supposed to be dying of stop-sickness, when the cause was soon discovered to be these worms being in swarms in the inner folds of the stomach, and especially on that part which contains the gastric glands; so that the whole of the gastric juices, without which no digestion can go on, were being consumed by them, and the glands themselves seriously injured.

The worm is about a quarter of an inch long, it buries

its head in the mucous membrane, which becomes greatly swollen, and, when the birds have got the disease badly, the inside of the stomach assumes a rotten appearance : the worms are quite white, but appear red from the inflamed state of the stomach.

Whence has come this scourge ? Is it quite new to the Ostrich, or has it hitherto existed in such small numbers as not to have injuriously affected the bird ? We think it must be a new disease, or else it would certainly have been noticed. When the Cattle Diseases Commission, of which I was a member, sat in 1876, I wrote the following lines that will be found in the report. How quickly the prophecy has come true :—
“The Commissioners cannot condemn too strongly the overcrowding of birds in too small enclosures and about the homestead, the ground becoming thereby tainted ; and although for a few years the evil effects may not be severely felt, the result must inevitably be the breaking-out of diseases of an unforeseen character.” The reader must dismiss any ideas he has about worms being generated by the bird eating indigestible food, or any other ideas he has that would entail the idea of spontaneous generation. This worm, even as any other worm or thing possessing animated life, was begotten by the union of the two sexes, and was born into the world. The two sexes may have been contained in the one

being, as is often the case with Entozoa; the progeny may have been to all appearances a different animal, finding its habitat in a totally different host, and only returning to its original appearance after two or more generations. But all this does not affect the great fact, that every living thing has had progenitors or a progenitor, and that every Ostrich affected by this or any other worm, must have swallowed one or more worms, or their larvæ, before it became so affected. Hence we see how highly communicative all parasitical diseases are.

I should explain, for the benefit of those who do not know anything of the natural history of Entozoa, that the term "host" is always applied to designate the animal or insect within which the Entozoon is living.

But it must not be supposed that the picking-up of one or more worms would necessarily give the disease; a bird in robust health, with its powers of digestion uninjured, may be able to resist a considerable number of attacks, or may be feeding on such food as will prevent the worm getting a footing, or, if it succeeds in this, prevent it increasing to such an extent as to injuriously affect the bird. Or it may be—and this is the important point to which we have been bringing the reader—that the bird is, say twenty-nine days out of thirty, able to swallow a worm or its ova without

being contaminated ; but on the thirtieth, from some cause or other, its digestive powers were in a fit state for the worms to get a footing, and if some were swallowed by the bird on that day the disease would be contracted.

Hence, in a state of nature, although the germs of this worm, or for the matter of that scores of others, are in small numbers on the face of the earth, the chances of a bird picking up a worm or its eggs at a time when these would be able to obtain a footing, is not great. But should it do so, the wonderful instincts with which nature has endowed all living creatures would teach it to seek the herbs that would assist it to battle with its enemy ; or, should it become seriously affected, and the eggs of the worms begin to pass in considerable numbers on to the veldt in the diseased bird's dung and urine, the habits of the birds in wandering over large areas, feeding here to-day and miles away to-morrow, greatly reduce the chance of others picking up the eggs whilst there is vitality in them, long as is the time that most of the kind can retain it. But should the bird become so badly affected that its health is impaired, the instinct of self-preservation that seems implanted in every animal, and which causes them to attack and drive away any of the flock that are sick, puts a further great check on its spreading. Further, it

would, whenever suffering in general health, soon fall a prey to the several carnivora that nature has placed ever ready to devour the Ostrich; as it is by its speed and general alertness that the Ostrich saves itself from them, and in both these qualities it would be deficient whenever it was out of health. But this is the time when it is also most susceptible to the attack of Entozoa, and when it is for the good of its species that it should fall a victim to the carnivora.

But when we domesticate the bird, we deprive it of all these safeguards which nature gave it; and unless we substitute in their place others, gained from a general knowledge of its habits and requirements, and backed by the discoveries of medicines and general science, the most dire consequences must be expected.

Now, this outbreak of worms in the Ostrich I believe has been brought about, in the first instance, by birds being kept on veldt where the necessary alkalies and other constituents of the herbage absolutely essential to them are wanting. The birds then become a prey to these worms; they commence to die, and are moved to another farm, where they are mixed with others possibly in good health: but the diseased birds begin depositing the eggs in such quantities that the others are taking them in all day, and the first day the hitherto healthy ones are a little out

of sorts they contract the disease ; and so it has gone on spreading, the germs being scattered in such quantities that even birds under the most favourable circumstances cannot escape, as the natural herbs that would have proved a sufficient antidote for ordinary attacks are not strong enough to resist them when multiplied a hundredfold.

This worm can be found in the chicks, even at six weeks old, and has proved very fatal to them at four months, and from that on to three years. Whenever a scarcity of food prevails, or the veldt gets dried up, and they are not supplied with green food, the worm seems to multiply rapidly, and if the birds are neglected fatal results will ensue.

I believe cases have been known of birds over three years old being affected ; but our observations go to show that where the birds are well cared for, and are on suitable soil, they throw off these worms as they do the tape-worm when they approach the adult age. Where the contrary is the case, we suspect the soil or the conditions of life are unfavourable.

The symptoms of the birds being affected are : a falling-off in condition, drowsiness, ruffled feathers, &c., the same as described with tape-worm ; but a marked feature that generally distinguishes between the two is, that in this case the bird rushes greedily at its mealies,

eats a few mouthfuls, and then turns away, evidently in pain as the food enters the stomach; repeating the operation again and again till he finally leaves the mealies; but this symptom will only be seen when the bird has been suffering for some time, and to a considerable extent, when it will also often retch from the pain and throw the grain up again. If the dung be examined, it will be noticed that much of the food has passed through undigested.

In the "post-mortem" appearances: the body will be found fearfully emaciated; dropsy of the abdominal cavity will be found highly developed, as also of the pericardium, and the heart will be flabby; the small intestine and the cœca will be found full of water. In the latter will generally be found a quantity of the stones that should be in the gizzard, and ought never to leave it as long as the bird is in health. This, no doubt, is caused by the muscles of the whole body becoming relaxed, and the rings of muscles that surround the outlet of the gizzard into the small intestine being no longer able to prevent (as in health they would) the passage of anything but the finest-ground food. We have already remarked upon the appearance of the stomach.

Treatment.—Give the birds an extended scope of grazing-ground, and change it frequently, if possible.

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Feed highly, using wheat, Kaffir corn, or barley, in preference to mealies; or if mealies must be used, crush them first. If the rains are plentiful, and the veldt keeps in good order and is adapted to the birds, there is no need to employ medicines, except for any birds that are very bad. For these "flowers of sulphur" has been used, with every appearance of much advantage, in doses of a table-spoonful daily for a week, and then every other day for a time; santonine in considerable doses daily is also reported to have been used to advantage, as also Wells and Lennon's Powders mentioned in a former chapter. But if the veldt is dry, besides a liberal supply of grain—say, two pounds a day per bird—they should have an unlimited supply of lucerne or cabbage, as well as prickly pear or aloe leaves cut up. We have heard on the best authority of birds, that were so far gone that they would not eat, having the above green foods forced down their throats two or three times a day and Lennon's Powders given to them, recovering and growing into fine birds. We have known turpentine and male fern to be used and beneficial effects to follow; but we think it highly probable that this was more attributable to ridding them of tape-worms than to the effect it was supposed to have had on the *Strongylus*. We have also heard of spirits of æther being given in ounce doses, on the theory that it

would dry up the worms, but with what results is doubtful. But until the discovery of some drug that is really deadly to this worm, and at the same time innocuous to the bird, the farmer must place his chief reliance in keeping up the stamina of his birds, so as best to assist nature to throw it off, and as the best preventive to their contracting the disease.

CHAPTER XXIII.

CAPONISING.

BEFORE considering the practicability or otherwise of emasculating the males, we should first clearly understand what objects are sought to be obtained.

Every farmer is aware of the great fact that like begets like, and consequently if an inferior-shaped, or organically faulty, or inferior-feathered bird is allowed to breed, its progeny will partake, in a greater or less degree, of the faults of the parent. Now, in a state of nature, the male Ostrich that is faulty in any of these points can get very little chance of breeding. If muscularly weak, he will be driven away by the stronger birds; if weaker than his compeers in any vital organ, he will probably ere he arrives at the age of puberty have fallen a victim to the carnivora; whilst if inferior in plumage, his chance, as compared with better-favoured birds, of attracting the hens to mate with him will be lessened. That this latter statement is true, and that it has considerable bearing on maintaining the quality of the plumage, few farmers can doubt who have watched the male bird disporting himself with

every feather fully displayed to the gaze of the hen, as well as the marked preference which a hen usually exhibits for one male more than others.

But with the domesticated bird we have deprived it of the operation of this law ; and it therefore becomes highly essential, if the health and beauty of the bird are to be maintained, that we should deprive the inferior birds of the power of reproducing.

This could, of course, be done by keeping all the inferior males in one enclosure, and the inferior females in another ; and if no other advantages could be expected from depriving them of their breeding organs, this would be the best plan. But if we take, as an analogy, what happens with poultry when so deprived, viz., that they become much tamer, more thoroughly domesticated, grow larger, keep fat on less food, do not fight amongst themselves, are less subject to disease, and live to a greater age, we see that the subject of caponising the Ostrich becomes one of importance.

The turning of cockerels and poulets into capons and poulards is comparatively a simple matter, and is largely practised in France. The operation is performed when the bird is about six weeks old. It is first fasted for a considerable period to reduce the size of the entrails ; the bird is then laid on its right side, the legs drawn back, the outer skin drawn forward, and

an incision made alongside the last rib ; the finger is then inserted, and the testicles or the ovary extracted, the incision then being sewn up in the usual manner.

Some years ago, in conjunction with the late Colonial Veterinary Surgeon, we made several attempts upon male Ostriches ; and although we succeeded in extracting the testicles, the birds all died : the failure being caused apparently by the testicles being closely connected with the two large blood-veins that extend down the back-bone, which became ruptured in the tearing away of the testicles, which is apparently not liable to happen in poultry, the testicles being much more freely suspended.

Another obstacle to the successful operation in the Ostrich is the much smaller size of the testicles in comparison to poultry : being only about the same size in an Ostrich of two years old as in a cockerel of six weeks.

Should any of my readers feel inclined to make experiments in this line, they must bear in mind the difference of the internal construction of poultry from that of the Ostrich, which reverses the side the incision should be made upon, which in the Ostrich must be on the right side to have any chance of success. But it would be as well to draw the reader's attention to a few of these marked differences.

In the fowl, in the place of the Ostrich's stomach

we have the crop, situated under the root of the neck, the gastric glands being contained in the lower œsophagus or large pipe connecting the crop to the gizzard, which latter lies far down in the abdominal cavity; whilst the liver, which in poultry is furnished with a gall-bladder, lies on the tail side of the diagonal diaphragm, instead of on the head side, as in the Ostrich. In poultry the total length of the intestines is comparatively much shorter than in the Ostrich; what we have called the manuply in the Ostrich, and is immediately after the cœca, being altogether wanting in the fowl, the whole length of the fowl's large intestine being only a few inches.

It is quite possible that emasculation could be accomplished in both sexes by severing the oviduct, but this would require a scientific anatomist and skilful operator to perform.

Of course, as long as there is such a ready sale for all sorts of Ostriches with very little attention being paid to their quality, the subject of caponisation will not attract much attention. But the day will certainly come when none but the best birds will be allowed to breed.

CHAPTER XXIV.

WOUNDS.

THE Ostrich is exceedingly liable to injuries, owing to its timid nature. No matter what precautions are taken, they will occasionally injure themselves by running against fences, stumps, or into holes; whilst the habit of fighting amongst themselves causes them to give each other serious wounds. But as a set-off against this, the farmer has the consolation that their flesh heals more readily than that of any other animal we know, and is far less liable to the usual difficulty of getting wounds to heal in animals—that of being fly-blown.

Some farmers make a habit of bathing a wound either with hot or cold water directly it occurs. This is a great mistake, as nature immediately sets to work to try and repair the injury by throwing out the ingredients that go to make new flesh, which the bathing washes away. What is required is to exclude the air, at the same time uniting the parts together. Bathing should only be resorted to where dirt has got in the wound, or when the wound has not been observed for a day or so, in which case the

skin will have shrunk, and the exposed flesh become hard and clotted. In this case it should be bathed for an hour or two with warm water, to soften the parts, and to allow of the shrunken skin being again loosened, so that it can be stretched over and united together in its place.

The first thing to be done is to remove any feathers that would interfere with the sewing-up, or would be likely to stick to the wound, then bring the parts of the skin together in their natural position, and stitch them up. Every farmer should have a few surgical needles, which any chemist can obtain for him at a cost of about sixpence each. If he has not these, a good-sized common needle can be used, with either common thread or waxed thread used double, or common twine used singly. The stitching is done by passing the needle through both edges of the skin, and then tying it with a double knot, cutting off the ends and repeating the operation, each stitch being separate and distinct from the other. Sufficient stitches must be used to bring the two edges of the skin completely together, which, with the pus given forth by nature from the wound, excludes the air, and this with the Ostrich in a few days effects a cure. If handy, a little carbolic oil, made of one part carbolic acid to twenty parts olive oil, rubbed over the part, keeps the flies away.

One of the worst and most awkward wounds the Ostrich-farmer has to deal with, while at the same time one of the commonest, is that to the lower part of the leg, caused by the bird getting fast in a wire or bush fence, when with its violent struggling it will often tear the flesh away, leaving the bone exposed on both sides. The skin in this part is of such a nature that it can seldom be got to unite, and the principal reliance must be placed on binding up the leg in rags dipped in carbolic oil, and keeping it so bound up for a long time until new flesh forms. But very often some of the principal muscles are severed, or so severely injured that they rot in two, and the bird loses control of its toes and eventually dies.

We have known a bird that broke its leg low down to have had a wooden leg fitted on, and to live for years ; also a very young chick that broke its leg, to have had it set with splints, and to be reared. But these are such rare exceptions, that, coupled with the immense time that must have been spent over them, they are of no practical value. In all cases of broken legs it is better to kill the bird at once.

Birds have a weak place in their back, a little lower down than the hump, which sometimes gets broken whilst fighting, or by other means; these then lose the use of their legs, whilst they continue to feed well

and in other ways appear all right, but of course, they eventually die.

Birds will often get a piece of bone stuck in the throat, generally one of the joints of the backbone of a sheep or goat. It can often be forced back and taken out of the mouth again; but sometimes a sharp point will penetrate the flesh, and it cannot be moved either way; then an incision must be made in the throat (carefully avoiding the comparatively hard wind-pipe, which can easily be felt), and the bone taken out. Before making the incision, the skin should be drawn on one side, so that after the operation the incisions in the skin and in the flesh come in different places; this, when the skin is sewn together, greatly assists the excluding of the air from the wound, and its consequently rapid healing. There is no danger in the operation if done carefully. Of broken wings we have treated in the chapter on "The Ostrich."

CHAPTER XXV.

ECONOMY AND CREDIT.

WITHOUT the first the farmer will not long have the second. Given the first, he will be exceedingly careful how he avails himself of the second. Economy and saving, in all walks of life, should be practised if a man does not want to run the risk of some day finding himself in money difficulties. But whilst the professional man or merchant may live up to his income in early years, and, by increased connection and consequent extended business, eventually make a fortune, the farmer has no other way of increasing his income than by saving, and thereby adding to his stock-in-trade. The Ostrich-farmer who lives up to his income is simply waiting for the first great drought, outbreak of disease in his stock, or other untoward event, to begin descending the ladder and eventually to become bankrupt.

It is impossible to impress too strongly on the young farmer the importance of economy, not only in his own personal expenditure, but in every item that would come under the category of what I have termed "dead capital"—that is, everything that does not produce

something saleable. A horse is dead capital: it does not multiply, nor yet produce anything, and yet how many more horses most young farmers keep than they need! It will take £22 to buy anything of a horse; the same money will buy a nice "feather" bird, which will give at least £12 a year in feathers. The bird is not more likely to die than the horse, and they will both cost him about equal in keeping. In three years the horse will have decreased, say £5, in value; the bird will have increased £20. So that, after three years, the gain to the young farmer, by having sold the horse and bought another bird with the money, will be £61. The same thing runs all through. One man takes two spans of oxen to manage a large farm, while another gets along equally well with only one, and in their place has a dozen cows, giving a dozen calves and a lot of butter every year; whilst the other man's extra oxen are decreasing in value.

This is one of the main reasons why those who commence with a considerable capital so invariably lose it. They will not study economy, or else they rush to the other extreme; and whilst they are lavish in their private expenditure, are so stingy about their farm expenditure that they let their birds die for want of feeding; they will not put up good sound fences, and consequently their men's time is half taken up looking

for lost birds, and their birds break their legs in badly-erected fences ; they do not provide proper housing for the chicks in bad weather, and consequently lose a lot now and again ; or they do not keep enough men for the work there is to do, and insufficiently pay and feed those they have, and consequently never have a good labourer. It is to steer the middle course that we must have experience.

The man who begins with lavish careless expenditure, who is quoted as such an open-handed fellow, and who is only too ready to endorse a friend's bill, will end generally as a mean miser ; whilst the man who is economical, punctual in his payments, not in too great a hurry to lend his purse, and that nothing would induce to sign a promissory note without value received, but who is both just and generous to all about him, will in the long run do far the most to help on his fellow-men.

Credit for short dates is but too easily obtained, nearly every auction sale being held subject to three months' credit on a promissory note, subject to an endorser if required. The birds on the " halves " system is also a credit system, but one in which the borrower pays a terribly long interest. The purchase of land is always on credit of payments by instalments extending over to two or three years, but generally subject to two sureties ; or, if not, about a third is generally required

in cash, when the remainder can mostly be raised on a mortgage. The banks very rarely give the farmer credit, excepting in the form of discounting bills bearing two approved names. Credit may be obtained, too, on a preferent bond; but, as this is fatal to further credit, it is only resorted to by a man on the verge of bankruptcy, or where a young man is being started in farming by a relative, or by other people's money, and the bond is given to provide for the lender getting paid in preference to others. In this latter way it is a perfectly reasonable means of obtaining credit. The only other means of credit available for the farmer is for goods supplied by the merchant with whom he deals, and which are usually supplied on a six months' credit, and this will even be allowed to run to twelve months or more, bearing interest at six or eight per cent. per annum; but when over six months is given, the amount is generally covered by a promissory note payable on demand or at a fixed date.

This latter is extensively used, and Juvenis when he first starts may be compelled to use it; but the sooner he can do without it, and adopt cash or monthly payments, the better. He will then get five per cent. discount on his purchases; whereas if he ran a half-yearly account, the goods being purchased at all times in the half-year, he would only average a three months' credit

all round. So that by paying cash he makes twenty per cent. per annum on the amount of his quarterly purchases.

To Juvenis and others, the merchant keeping his carriage and living in style may appear a wealthy man; and as he is very accommodating—as it is his business to be, as long as he knows Juvenis has the means to pay—Juvenis is very apt to think it does not matter if his account is large and has been long accumulating. But woe to him if a commercial crisis comes, and he suddenly finds the merchant insolvent, and he is called upon by the creditors to pay up sharp.

Juvenis should on no account ever sell his produce on credit. Produce is cash all the world over, and reasonably so, as the merchant, although he may not have the balance at his bank to pay for it, can always go there and raise the wind on the produce.

Juvenis will find that in selling his surplus increase, or other stock, he will generally have to give credit; but, as a rule, he should not give more than three months, and had certainly much better decline to sell to a customer of whose stability he has any doubts, than run the risk of not being paid; and he must, on no account, let any terms of friendship or acquaintanceship he may be on with the would-be purchaser influence him. Directly it comes to buying and selling, neither

party has the slightest right to think of that: for both parties' sake, and for their future friendship, let it be business, hard business.

Juvenis will do well to remember the old saying: "There is no charity in business, and no business in charity." When he is well to do, he may soften the first part as much as he likes.

Juvenis can always get rid of the risks of bad bills by selling his stock through an auctioneer, when he will either take his bill, for which he will be charged five per cent. over and above the government dues, or he can arrange to be paid in cash, when he will have to submit to a gross deduction on the vendor's roll of from eight to ten per cent., but this he will find out-and-out a better plan than taking a bill of which he has the slightest doubt.

There is no reason why Juvenis, if he has no debts, and has a plucking of feathers, that after allowing for casualties would be sold in three months, should not buy more stock on credit; but if he is wise he will wait, and then, with cash in hand, in nine cases out of ten, he will buy at a price that will more than compensate him for the three months' loss of profit.

Juvenis should never be led into buying what he does not want, merely because it is cheap, or, as he will constantly hear fellows saying, "to do a spec." He

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may see wealthy men who do nothing but what would appear to him to be speculating. He must not be misled : these men do not speculate : they are stock-dealers, *alias* middlemen, who, if successful, work as hard at their business as any farmer, have generally a great knowledge of the country and of every man's affairs in their district, are excellent judges of stock, and in the great majority of cases know before they buy where they can sell again, even if they are not, as is often the case, buying on commission. But even if they do buy on spec, they have command of money, and it is immaterial to them whether they wait one or two years for a sale, provided they can eventually make a corresponding profit. But not so Juvenis, who, perhaps at a sale, hearing people exclaim, "How cheap!—by Jove, there is money to be made on these!" gets tempted, and buys on credit. He gets the stock home, and tells all his neighbours what a spec he has made. They come and look at them; all agree how cheap, but somehow do not buy. "Never mind," thinks Juvenis, "there's Mr. B., of H—. I will go over and see him. I know he wants some of this kind of stock;" but, strange to say, when he gets to H., he finds B. bought what he wanted only a few days ago, and, stranger still, at even a lower figure than Juvenis gave; and in the course of conversation B. says, "If I were you, I

would sell those things sharp. I don't quite like the looks of things ; people are throwing birds in the market in all directions, and I heard that up in the Karoo the drought is so bad, that they are letting them go for a mere song." Juvenis is now beginning heartily to wish he had never given that nod to the auctioneer that made him the possessor of these birds. The three months' credit he got has nearly run out, and he sees nothing for it but to ask the auctioneer to renew the bill. To this the auctioneer probably consents, after some demur, but insists on £100 of it being paid. Juvenis is now driven to going to his merchant, and getting an advance of this amount on his next plucking. The merchant looks grave, tells him that the late fall in feathers is much heavier than the papers admitted, that his private advices from London are that they are likely to go even lower in the next few months ; but he knows Juvenis's word can be relied on, and writes him the necessary cheque.

Juvenis now begins to see that it was no slip of Mr. W.'s and Mr. S.'s, the two dealers at the sale, that they did not buy. In fact, if he had only known it, those men had hardly bought a head of stock for themselves for months past. They had long since seen an unsteadiness in the commercial barometer. The last bank statements had shown them much, numbers of

their customers coming for renewals had shown them more, and conversations with auctioneers and others in business had convinced them that one of those terribly depressed times was coming; caused by what? perhaps nobody can tell, but to which all the colonies are subject; times when property of every description will fall perhaps fifty per cent. and be hardly saleable at that; perhaps lasting only a few months, and succeeded by a rapid rise to even higher prices than ever; perhaps lasting years, and followed by a very gradual rise;— a time when those that have been laughed at as slow-going and cautious in the good times, are investing their savings in buying up insolvent estates at prices that will some day prove a fortune. A time when those who in the good times have been the admired and envied ones for their dash and speculative turn, are going crash in all directions.

Juvenis does not yet see all this, but he sees that his speculation is becoming a serious matter. He had as many birds as his farm, his staff, and his plant would manage, and he cannot attend to these extra birds properly; already some have got lost, the others have fallen off in condition, and some have even died, more or less of poverty. At last he makes up his mind to sell them by auction, and is right glad to be rid of them, at a loss of thirty per cent. and all his trouble.

Let us hope he will have learnt that a man cannot really succeed at more than one thing at a time ; that an Ostrich-farmer's business is to make his birds and his cattle increase, and produce the greatest quantity and best quality of feathers possible, and that even if he is successful with a few speculations, he will have lost quite as much by their interference with his proper business as he made. That if he takes money wanted in his proper business to speculate with, it will inevitably be attended with loss ; whilst if he does it on credit, sooner or later his experience will be that of Juvenis.

As we have seen in former chapters, unless Juvenis's capital fund to invest at starting was counted in thousands, he will at first be obliged to use credit in some form, even on a hired farm, and consequently a considerable portion of his earnings will go to the capitalist ; but if he is strictly economical and fairly successful, a few years will see him out of debt, and the whole stock his own ; but by this time his lease will probably be nearly expired, and his landlord will not re-let, or if he will re-let, will not make the improvements which Juvenis feels he cannot do without. His stock is now so large that he cannot do without more fencing, he has already got as much bush fencing as he can keep in repair ; wire or stone wall means sinking capital on another man's property ; besides, his breeding birds are so

many that he must have better buildings for his chicks.

He has now reached the second great critical time in his affairs : if he can carry himself successfully over it, he is a made man. On the one hand, to track to another farm will throw his stock back, and in every way cause him serious loss ; on the other, to purchase the farm he is on will cause him to incur a very heavy liability ; but if the owner will sell at anything like a reasonable figure, and give him extended credit, with very little to be paid down, this is his wisest course ; if the owner will not sell, he should endeavour to get a suitable farm on a short lease, with right of purchase at a fixed price and fixed terms of payment. In either case he is then in a position to make what improvements are absolutely necessary for the well-being of his stock, but in this he must use the utmost discretion and economy. His position financially is not nearly equal to what it was as a tenant, the transfer dues and first instalment will have walked off with his spare cash, the interest on the unpaid portions will probably be more than what he paid as a rental, and he has the portions of the purchase-money to meet every six months.

Let him not be too sanguine ; let him bear in mind the chances of change in the commercial barometer ; let him turn over every shilling two or three times

before he spends it ; let him bear in mind that if he cannot meet the instalments as they become due he will be in the power of another ; that this other may have been compelled to discount the bills Juvenis gave, and that unless he can meet them, there is great danger of all his former years of toil being swept away ; for he is then not in the hands of one willing to be forbearing and to help him, but in the hands of some bank or other company, and “ Companies have no souls,” as Juvenis will quickly find out, and at which he must not be surprised : the directors’ duty is to see that no unnecessary risk is run with the shareholders’ money.

Not till two-thirds, or, at least, a half, of the purchase money is paid off can Juvenis breathe freely, or consider that he is financially out of danger, for this is all that he can ordinarily trust to being able to raise on a mortgage bond in the open market. But as long as he has a mortgage bond of any sort on his property, he should not incur other liabilities for the sake of improving his property. Whilst it may be a question with him as funds come in whether it is better to improve or to get rid of the mortgage, this will entirely depend upon the returns the proposed improvements are likely to give.

Another mistake that is often made is this—a man

gets a sort of earth-mania, and buys farm upon farm, only paying off a little on each; even a rich man thus soon becomes embarrassed, and if a commercial crisis comes will be utterly ruined.

But a far commoner mistake is this: a man has got up as far as where we have just left *Juvenis*, with no debts except a moderate mortgage; when an adjacent property comes into the market—one that would make a most desirable addition to his property—and he is tempted; the owner would probably accept a second mortgage bond on the other property as sufficient collateral security; the chance, he thinks, may never occur again in his lifetime, &c. But let him steadfastly resist the temptation. True, the chance may never occur again, but if he waits till he is in a better position he will be surprised how many equally tempting things will turn up, and if he purchases now he puts himself in quite as dangerous a position as he was in when he first purchased land. Besides which, he will not be able to stock it; and if he lets it, it will in all probability not bring him in the interest on the purchase money.

It will be seen that there are only two periods in a farmer's career when he should avail himself to any considerable extent of credit: the first, when he first starts: the second, when he buys his farm. His whole business is essentially different to that of the merchant,

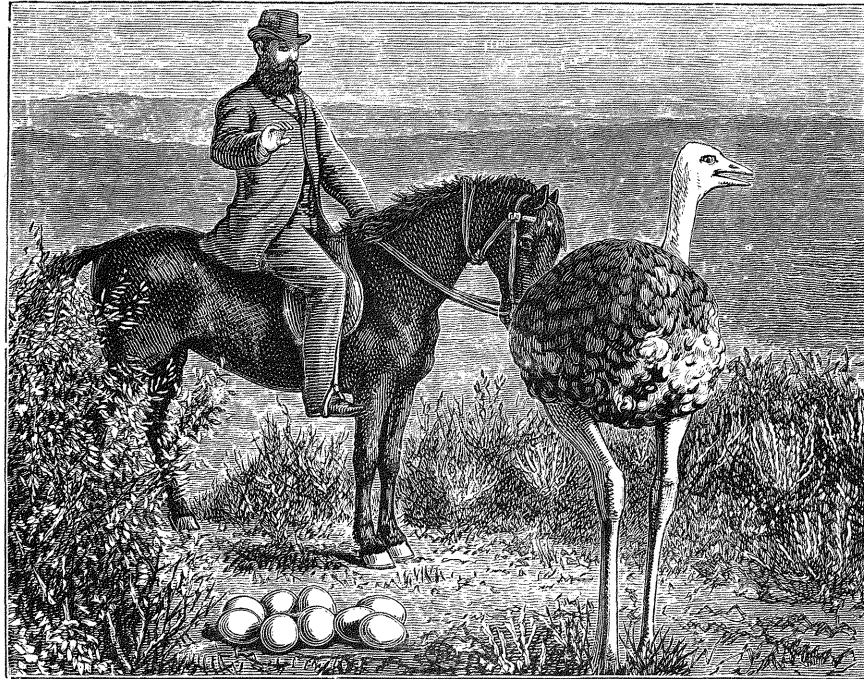
who safely can, and most probably does, avail himself to a large extent of credit throughout his career. The merchant's goods are—thanks to insurances—not liable to destruction as far as he is concerned. He has two dangers only to apprehend : that of the inability of his customers to pay him, and of a fall in produce. But the farmer is much more affected by a fall in produce, as it lowers the value of his whole stock, which is, besides, subject at all times to be decimated by diseases, droughts, floods, and even possibly total destruction by some murrain. Consequently, he cannot insure his stock ; could he do so, he might safely avail himself of credit to a large extent. Directly he ceases to be merely a farmer by becoming a land-owner as well, he finds the means, as the merchant does, of using credit on all sides of him. Why? Because that part of his capital which is invested in land is to a great extent perfectly safe.

CHAPTER XXVI.

DESTRUCTION OF CARNIVOROUS ANIMALS.

CLOSELY connected with the subject of fencing is that of the destruction of carnivorous animals, especially in a country like this which so abounds with every species of them. The lion is only found so far in the interior now that it need not be remarked upon; and, strange to say, the wild dogs which are so destructive to sheep and goats when running at large, have not yet learnt to destroy our Ostriches, but they may do so any day. The worst of the carnivora to the Ostrich-farmer is, *par excellence*, the tiger; next, the jackal, the wild cat for little chicks, the lynx for larger ones, and the natives' and other people's dogs worse than any of these.

A thousand years ago the then civilised world was enlightened enough to offer large rewards for the destruction of carnivora, and even sixty years ago we did so at the Cape; but the ordinance has been allowed to fall in abeyance; and an enlightened (?), responsible Ministry replied to the author in a letter he addressed to them on the subject, "they did not consider it was a matter which concerned them." So that we must not



BIRD WITH NEST.

(From a Photograph taken at Heather-ton Towers.)

be surprised that the tiger and the jackal are as numerous in the country as they were twenty years ago.

The tiger will often live for a long time in close proximity to an Ostrich-camp without molesting the birds; but once let him—or rather I should say she, as it is generally the vixen that is the offending party—kill a bird, and the farmer will have no peace till the tiger is killed. If the bird or animal which was killed the previous night is found, and strychnine put in without moving the carcass in any way, the tiger will often return, and be found poisoned not far off. Pills—that is, lumps of meat with about a grain of strychnine—should also be laid about in all directions; whilst a bush fence across the kloof, with holes left for the tiger to creep through should be made—in each of which should be placed one of the ordinary double-spring tiger gins that are sold in all colonial towns. Or, a little half-moon bush hockey should be made, and a sheep or goat tied up in it, with either spring guns or gins across the entrance. But the farmer who would save himself from further heavy losses should relax no efforts until he is rid of his enemy.

Jackals are very destructive to young birds. They cannot kill an old bird, but are very apt to frighten them at night, and the farmer should always poison them off. This is easily done by laying a few hundred

pills about, especially on the roads and little foot-tracks ; or, better still, by dragging a paunch or part of a dead carcass across the veldt at sundown, occasionally dropping a pill on the line of scent. The farmer, if he notices, will soon discover on his farm the warrens of holes that the jackals inhabit, generally not more than one or two on a farm ; and when he has once got them reduced down, should he again hear one barking, he has only to lay pills at the warren to at once destroy it. Many farmers are frightened to lay pills in their Ostrich-camps, but they need not be afraid. We have made it an invariable practice to do so, and unless the birds have been trained to eat meat they will not touch them.

Wild cats are exceedingly numerous, and very destructive to the chicks when they first hatch in the veldt. The only safeguard is to destroy them with poison ; and if the camp abuts on to a river, or there is much bush about, it is always advisable to lay poison some days before the brood is expected out.

The lynx is not a common animal, but is very bold and destructive when he does come ; but he is not capable of attacking chicks over four months old. He, too, must be settled with poison.

An Ostrich-farmer should never permit a native to keep a dog, and better still if he does not keep one

himself. Where there are dogs there will always be accidents. Even if the dogs do not chase the birds—which the quietest dogs cannot be perfectly trusted not to do at some time or other, the birds will “srik” from them at night, and many are thus killed or injured. We have not seen that birds brought up amongst dogs are less frightened at them than those which have not been, though most farmers suppose that they are so.

Monkeys will sometimes bother with the chicks in the veldt. They catch them and play with them, and often end by knocking out their eyes. The best plan is to shoot a few of the monkeys, when the rest will leave the locality.

The Ostrich-farmer should bear in mind that strychnine used *ad libitum* is one of his best friends.

CHAPTER XXVII.

LAND LAWS.

THE tenure under which the land in the Cape Colony has passed from the possession of the Crown into the hands of private individuals, and the laws under which, at the present time, private individuals can become possessed of Crown lands, and under what reservations, is a matter of primary interest to everybody in the country, but especially so to the farmer. We shall now, therefore, give a short sketch of the manner in which the Crown became possessed of the land, and then dispossessed itself in favour of private individuals, under certain reservations, together with the laws at present in force for providing for such transfer.

In 1652 the first settlement in South Africa was founded at Table Bay, on the present site of Cape Town, by the Dutch East India Company, for victualling their ships. As time went on they continued to allow the Company's discharged servants and others to occupy patches of land, upon the payment of a small annual rental of £4 16s., called "Quitrent," and these patches were known as "loan places." As the com-

munity spread farther inland, and stock-raising became the main industry of the people, the size of these places came to be about 3,000 morgen, or a little over 6,000 acres, which is recognised at the present day as the size of a full farm. This went on and on, the boundaries of the colony always extending north and east. In 1813, seven years after the final establishment of the British Government in the colony, and the boundary eastward had been fixed at the Great Fish River, Governor Sir John Cradock invited all possessors of "loan places" to submit their claims and receive title-deeds for the land, to be known under the name of "Perpetual Quitrent Tenure." Previous to this (and even since), small portions of land had been granted as "Freehold," but the great mass of the land is held under the above-mentioned "Quitrent Tenure," which only differs from "Freehold" in that the Government reserve their rights to precious stones, gold and silver, and the right of making and repairing roads, and of taking materials for that purpose without compensating the owner, together with the perpetual annual payment of £4 16s. In lands granted under this tenure, subsequent to this date, the reservation was made that "no slaves should be employed on the land," and that "the land should be brought into such a state of cultivation as it was capable of;" the first of these

conditions ceased to have any meaning after the abolition of slavery in 1834 ; the other condition has never been enforced, and has become obsolete.

Up to the year 1860, the governor had the power of granting lands under Perpetual Quitrent tenure to whom he thought fit. Most of the land in British Kaffraria and Queenstown, taken from the Kaffirs at the end of the wars of 1846 and 1850, was granted to those who had borne arms, with the further servitude on them of personal occupation and liability to military service ; but these last conditions were abolished by act of the colonial parliament in 1868.

In 1860 the first act was passed which took the power out of the hands of the governor, and provided that all Crown lands should be submitted to public auction before they could be alienated. A quitrent, equal to one per cent. of the supposed value was retained, but the tenure was in most cases better than that of the old quitrent farms : because the government was bound to compensate the owner for all land it re-took from him for roads, railways, or other public purposes ; whilst the reservation of precious minerals and stones was seldom inserted, and the quitrent was redeemable by the payment of fifteen years' purchase. When the Crown land lay contiguous to private property, the divisional councils had the power of fixing the value, and title could be

obtained without its being first submitted to public auction. But this act is no longer in force as regards any further alienation of land from the Crown.

‡In 1864 an act was passed enabling the government to lease Crown lands for twenty-one years ; which leases by a subsequent act, No. 5, of 1870, could be converted into real property on "Quitrent Tenure," at such price as should be fixed by arbitration. In no case could the arbitrators fix on a less sum than what the yearly rental capitalised at six per cent. would come to ; or, in round numbers, sixteen times the rental. A perpetual annual quitrent of one per cent. on this amount was also imposed.

These two acts continued in force until 1878, when they were repealed in so far as any lands not disposed of up to that date were concerned. But a large extent of country was taken up under the act of 1864, and although in many cases the lessees took the land at rentals exceeding its value, owing to the spurt which Ostrich-farming has now given to the value of land, these farms will probably before the expiration of the twenty-one years' lease be converted under the provision of the act No. 5 of 1870 into quitrent farms.

In 1870 and 1877 two acts were passed which dealt with the disposal to agriculturists of small farms not exceeding 500 acres in extent, and which will be

more fully noticed hereafter ; with these two exceptions we have now seen how and under what conditions the whole of the Crown lands passed into the hands of private persons up to the year 1878, in which year an act was passed repealing all former land acts, excepting No. 4 of 1870, No. 5 of 1870, and No. 10 of 1877.

This act—No. 14 of 1878—is undoubtedly the most perfect act for dealing with Crown lands that has ever been passed in any British colony. The great danger that all colonies have struggled against is that of their Crown lands getting into the hands of large speculators, instead of into the hands of men who would live upon them and draw out their latent wealth. This act, whilst giving the farmer a perfect title to his land, and thereby holding out to him every inducement to build upon it and improve it, only requires him to pay down surveying expenses and one year's rental: thus allowing a man of very small means to enjoy all the privileges and advantages of a landed proprietor, and enabling him, if successful in after-years, to get rid of his annual payment by paying down twenty years' rental, which frees the land from any further quitrent. The severe competition which has thus been brought about ensures the Crown lands fetching their full value, and puts an effectual stop to the danger of the land getting into the hands of a few wealthy men.

In the colony proper the Crown lands which have not been alienated consist mainly, as might be supposed, of land destitute of permanent water, or covered with scrub, or precipitous hills, or that are in some way inferior to the other lands, and have consequently been neglected by settlers. But as a very large extent of beautiful country has lately been taken from the native tribes that have rebelled, the whole of which will be sold either in small lots to agriculturists under the acts of 1870 and 1877, or in large blocks of about 6,000 acres under the act of 1878, we think it advisable to epitomise some of the leading features of the acts of 1878 and 1877, the latter of which embraces all the features of that of 1870, whilst making the act applicable to assisted immigrants, and the payments somewhat easier.

The Crown Lands Act of 1878 provides "that all waste and unappropriated Crown lands in the colony shall, except as is hereinafter excepted, be disposed of on perpetual quitrent for the highest annual rent that can be obtained for the same by public auction."

"That the auction shall take place at the Civil Commissioner's office of the division in which the land is situated."

"That three months' notice of such sale shall be given in the Government Gazette- and in some local

newspaper, such notice to state the minimum rent that will be accepted."

"First year's rent to be paid in advance, and sureties given for the next two, or, in lieu of such sureties, two years' rent to be paid in advance."

"The rent can at any time be capitalised by the payment of twenty times the amount, or portions of not less than one quarter at a time can be so capitalised."

"The expenses of survey, erection of beacons, and of the title-deeds, to be paid at any time the government may fix."

"The nature of the tenure to be known as 'Perpetual Quitrent,' and subject to a special servitude that may be stated in the conditions of sale ; as also all roads marked on the diagram to remain open, unless closed as by law is provided. Government has the right to resume possession of part or the whole for public purposes on compensating the owner, and reserves deposits of gold, silver, or precious stones."

"All lands not disposed of under this Act to be leased for any term not exceeding three years."

"The exceptions are, agricultural lands disposed of under the acts of 1870 and 1877, and where a piece of Crown land adjoins that of private owners ; when, after certain due formalities have been gone through, the government may dispose of such piece of land privately

to the adjoining owner or owners at such quitrent as the governor shall decide, or as shall be decided upon by three arbitrators.”

The Agricultural Immigrants' Land Act, being No. 16 of 1877, provides “that the governor may from time to time set aside suitable areas for disposal under this act; the immigrant not to be allowed to lease more than 500 acres, the term to be for ten years, at the rate of 1s. per acre per annum.”

“The rent to be payable on the *expiration* of each year.”

“The lessee is bound to erect on the land a dwelling-house of the value of £20 before the expiration of two years, and afterwards to cultivate one acre out of every ten.”

“After the tenth annual payment, and the expenses of survey and title, he receives a grant on perpetual quitrent tenure, subject to an annual quitrent of 1 per cent. on the ten years' rental.”

“He can on allotment pay the whole ten years' rent down, or at any time subsequently the remaining portion, and receive title at once, but he cannot sell the grant till after the expiration of five years from its first allotment.”

“On failure of the lessee complying with any of the above conditions, the government can declare such

lease to be forfeited, when it shall be put up to public auction, but any surplus accruing from the sale goes to the first lessee."

Such are the three acts under which all Crown lands are now disposed of, and it must be owned that for liberality of terms they are not to be beaten by any colony under the Crown. Even the agricultural immigrant, if he possesses the means to purchase one or two pairs of birds, or a few young birds, together with his agriculture, would be in a fair way to a competency, even if not to a fortune.

With the quieting-down of the native wars that have done so much harm to South Africa, and those which are now raging, which ought never to have occurred—and would not have done so had the present government only listened to the voice of those who, having the true welfare of the country at heart, and knowing the natives, tried their utmost to dissuade the government from continuing their mad, headstrong policy of indiscriminate disarmament which has brought all the present troubles upon the Cape Colony. The bitter experience which the country has now had will induce in the future such a keen interest in politics that such madness is not likely again to occur.

To say more on this subject would be to trench on the domain of politics, which would be foreign to the

present work; but we say so much to induce the intending immigrant or others to look into the matter, and not jump to the conclusion, as they naturally might, that South Africa will always be in a state of warfare.

To conclude: let it be borne in mind by all intending to emigrate from England that the colony has now on its hands a large amount of as fine lands as might be wished for. That the only drawback to these is their contiguity to native tribes; but this contiguity gives a counter-advantage, viz., that of cheap labour. That these lands will be disposed of partially in agricultural blocks, not exceeding 500 acres in extent, and all that like to apply for them will be able to do so under the provisions of Act No. 4 of 1870, or, in the case of "Assisted Immigrants," under the still more favourable conditions, as regards payment, of Act No. 10 of 1877.

The remainder will be disposed of in blocks of from 4,000 to 6,000 acres, under the provisions of Act No. 14 of 1878.

The name "Assisted Immigrant" applies to those who are sent out to the colony at the expense of the Cape government.