OSTRICH-FARMING IN SOUTH AFRICA.

CHAPTER I.

OSTRICH-FARMING: ITS ORIGIN AND PROSPECTS.

In treating of Ostrich-farming it is essential to bear in mind what a short time has elapsed since the first domestication of the wild bird, which we can only date back about fourteen years; as, although previous to this a few Ostriches had been kept in zoological gardens, and in parks, like that of the late Sir Walter Currie, at Oatlands Park, Grahamstown, we have not heard that any one had them breeding in a tame state. So that, although we should have to go back a long period to find when the first tamed Ostrich was kept, the domestication of Ostriches for the purpose of farming them for the sake of their plumage must be taken to date from 1867. As to who should bear the palm for being the first to have succeeded in domesticating the Ostrich, *i.e.*, to have had a nest from tamed birds, and to have reared their chicks in a tame state, it may be hard to decide. We believe some challenge our claim:

whether justly or not, we cannot say; at any rate, we believe no one disputes that we were the first to make it our sole occupation, and to bring it before the world as the extraordinarily lucrative and great industry it has now become—an industry in which in the Cape Colony alone there is not less than £8,000,000 of capital employed, and with an export of feathers for last year of 163,065 lbs. weight, valued at £883,632, being equal to £5 8s. 4d. per lb., the great mass of which was from tame birds. It seems almost unaccountable that for over forty years after the landing of the British settlers in the colony such a mine of wealth should have lain at their doors, within almost daily sight of them, as at that time the wild bird was in abundance throughout Albany, and right up to the Zambesi, and many of the most adventurous of the settlers made an occupation of hunting the birds and exporting the feathers, and constantly came upon broods of young birds; or even later on, when the birds were destroyed and hunted into more inland parts, and Grahamstown became the main centre from which the traders fitted out and returned to sell their feathers, and the inhabitants constantly saw feathers sold for nearly their weight in gold, yet the idea never struck them of domesticating the bird, and reaping a half-yearly crop of feathers, instead of shooting it for a single crop.

The consideration of this should act as a great stimulus to every young man to keep his eyes open for other mines of wealth, which no doubt lie around us in this, as yet, little-developed land. But any one who will discover these must rely entirely on himself, and must not be deterred by any amount of sneers and ridicule. Many a time at first we were told we were mad, and should leave it alone; that it would never pay; that the birds were naturally of so timid a nature, they would never breed in confinement; or if they ever did make a nest, that it was their nature to break all their eggs if any one went near it; and that even if all other difficulties were overcome, the feather grown in a tame state would not curl, and would be of little value. This latter was extensively believed, even by the dealers in feathers, and for some years a great prejudice was maintained against tame feathers. As this has quite died out now, it is hard to account for it, and only shows how strong prejudice is against anything new.

The French have made great efforts to introduce Ostrich-farming in Algiers, but it does not seem to have taken much root there. Birds are also, to a small degree, kept in a tame state in Egypt. But South Africa has become, and is likely to remain, the great seat of the industry.

The Melbourne Acclimatisation Society imported some into Australia about eight years ago, but they have only slightly increased, and the experiment as yet can hardly be considered a success. A few other small lots have also been introduced into some of the other Australian colonies.

Last year a shipment of over a hundred birds took place from Cape Town to Buenos Ayres.

The North African Ostrich is considered to give a more valuable feather than the South African, and a few years ago two pairs of birds were imported at Port Elizabeth from Barbary.

For some years not only farmers, but experienced business men, were always prognosticating that the feather market would collapse with the increase of the Ostrich; but the reverse has been the case. Fourteen years ago the export of feathers from the Cape was only valued at £70,000, entirely from wild birds, and yet prices were no higher than they are now, and the fluctuations of price have not been so great as in most other staple raw productions. One of its great safeguards is, that it is part of the Court dress; and as long as it is so it will always be fashionable; and the vested interests, not only of the growers, but, what is more important, of wealthy men in Europe, in the shape of the manufacturers of the curled and dressed feather,

and of the dealers, is so great that no fear need be entertained of its being allowed to go out of fashion. Besides which, the feather is undoubtedly the most beautiful article of ornament of its kind, and as such is independent of fashion to a great extent.

Other markets are opening for them, creating at this time a greater demand than the present increase of birds can supply. The last quarter's customs returns show an export to the United States of America—a totally new market for us—of £12,000 worth, whilst we personally have received large orders for another new market.

CHAPTER II.

THE OSTRICH.

THE Ostrich family is represented by four species, viz., the Ostrich proper (*Struthio camelus*), the Rhea, the Emu, and the Cassowary. Some naturalists give a fifth, viz., the Apteryx, inhabiting New Zealand; but this we consider a mistake, as, although it possesses many of the characteristics of the Ostrich, it differs from them so much in other respects as to exclude it from the family.

The family differs from other birds in having only rudimentary wings, unadapted to flight; in having the barbs of the feathers of equal length on each side of the quill, and of such a nature as to deprive it of the means of flight, and in having the breast rounded like a barrel, instead of being like a keel, as in birds of flight.

THE OSTRICH PROPER

is distinguished from the other members of the family—

(1.) By being the only one with two toes:

(2.) By being twice the size of the others:

(3.) By its eggs averaging upwards of three pounds

in weight, whilst the others barely average one and a quarter pound:

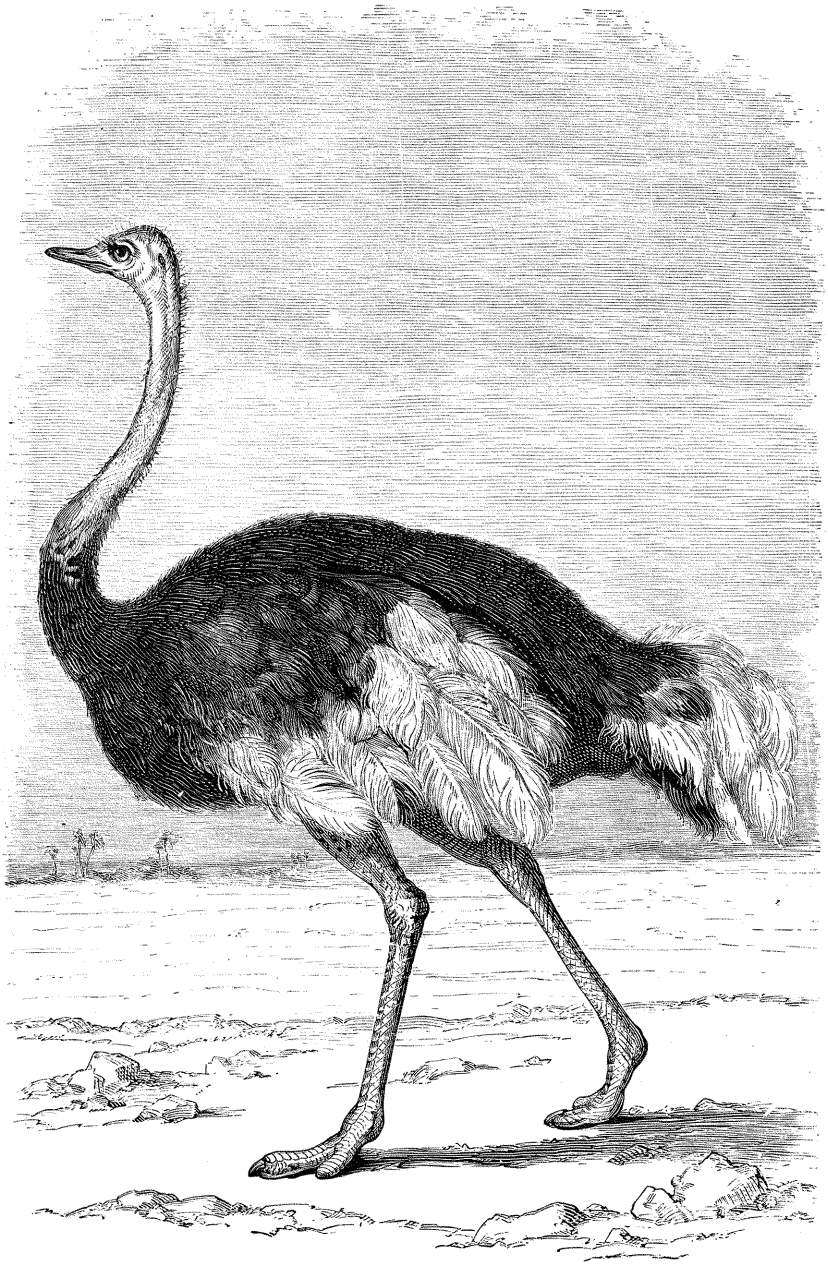
(4.) By the head and neck being bare of feathers:

(5.) By the beauty of its plumage, the only other member of the family producing feathers of any marketable value being the Rhea.

It is indigenous to and inhabits the whole continent of Africa and Arabia, but in the latter it is now nearly extinct.

The Rhea, or South American Ostrich, has three toes and no tail, and produces feathers somewhat similar to the chicken feathers of the Ostrich proper. They are known in the trade as "vantour" or vulture feathers, being worth from 4s. to 30s. a pound. A curious case of swindling came to light last year in Port Elizabeth, where a man, largely engaged in the feather trade, imported large quantities of these feathers, and mixing them up with the inferior kinds of white and grey Ostrich feathers, sold them again as Ostrich feathers at an enormous profit, completely deceiving the colonial buyers, the matter not being discovered till the feathers got into the hands of the London manufacturers.

The Rhea inhabits, in vast numbers, that part of South America which lies south of the Equator and east of the Andes mountains, extending down to the Straits



THE OSTRICH (STRUTHIO CAMELUS).

of Magellan, thus reaching to 18 degrees nearer the Pole than the Ostrich. It is being rapidly destroyed for the sake of its feathers, which are being exported in enormous quantities, principally to North America and France. The egg of the Rhea, like the Ostrich, is cream-coloured when fresh laid, gradually turning quite white.

THE EMU

inhabits the whole of Australia, and Australia only. It has three toes, is of a brown colour, the feathers being of a crisp, hairy nature, and of no commercial value. Its eggs are very handsome, being of a deep blue colour, and much indented. It has all the habits of the Ostrich. The plumage of the two sexes is of the same colour. It is fast being destroyed, as the country gets filled up with sheep.

THE CASSOWARY

is found sparsely in Northern Australia, some parts of the Malay Archipelago, and in the South Pacific. It is distinguished from the other members of the Ostrich family by a large horny excrescence on its head, and most of the species, of which there are several, have one or two wattles suspended from the neck. It stands, like the Emu, about five feet high, is of a very dark brown

colour, has hairy feathers of no value, is quite wingless, and lays a light-greenish egg.

The whole tribe are noted for their excessive shyness and timidity, without which in the struggle for existence in the world they would ere this have ceased to exist, from being deprived of the powers of flight.

We have taken this glance at the other members of the family, as it is essential that the Ostrich-farmer should know thus much of them; but we shall not have again to refer to them, as our remarks will be entirely on the African Ostrich (*Struthio camelus*), so called from the resemblance of its foot to that of the camel. We will now take a glance at its anatomy.

The reader need not fear a lot of dry, hard, scientific names that would convey no information to him. My intention is to convey such a general knowledge of the frame of the bird the Ostrich-farmer has to deal with, as shall assist him to make post-mortems of birds that may die, and to convey in an intelligent manner to other farmers anything peculiar he may notice.

THE LEG.

Most farmers call the joints by their wrong names. The Ostrich walks on its toes; what is commonly called the ankle-joint is the second toe-joint of man. The so-called knee-joint corresponds with the ankle-joint, and

the so-called thigh, where we brand, with the calf; the proper thigh being the short thick bone above this. This is the usual formation of all swift-footed animals, the part from what most farmers call the knee downwards being the foot, the heel being exceedingly long. It is very advisable that farmers should remember this, so that in describing to each other malformation or injuries, there should be no confusion; so we have—

1st. The first toe-joint;

2nd. The second toe-joint;

3rd. The ankle-joint;

4th. The knee-joint, above the place we brand;

5th. The thigh-joint.

The leg is easily broken, either with a blow or when they are dancing, when there is nothing for it but to kill them. They are also subject to spraining the ankle-joint and instep, for which the best remedy is cold water bathing and arnica lotion. We have had them put the ankle-joint completely out; if seen to at once this can be easily pulled in, and a few hours' cold bathing and leaving them in a dark stable, so that they do not use the leg, will put them all right in a couple of days. They will sometimes get tumours on the leg; these are easily opened and removed, when the place should be well cauterised. Young birds will sometimes get a staggering gait, knocking the legs together as they

walk; this is the after-effect of the birds having eaten some poison, and although they may live for a long time they will gradually get worse and die.

THE WING,

which constitutes nearly the whole value of the bird, is exceedingly small, and the feathers are unadapted for flight, but in other respects it is perfect.

They are rather subject, especially as young birds, to put out the first or small joint, which is known by the wing hanging down. It is easily pulled into place, and should be at once tied to the other wing over the back, and left, when it will soon get right again.

THE HEAD

is exceedingly small, and consequently the brain is small also. This has been calculated to be in the proportion of 1 to 1,200 as compared with its whole body, whilst the eagle's is as 1 to 160, and the parroquet's as 1 to 45; and yet the bird is anything but stupid, as every man must own who has seen it breaking open the shell to let out a chick that is fast inside, or has seen it managing its chicks. The eye is the only organ of the head we have known subject to disease. In all cases there is nothing like pouring in a lotion of sulphate of zinc, and repeating it constantly—as much as will lie

on a shilling to a quart bottle of water is the strength required. We have known ants to attack little chicks, and nearly blind a whole brood, which were all saved with this treatment.

THE NECK

is remarkable for its great length and for its formation, allowing the bird to turn its head completely round. They are very apt to get bones stuck fast in swallowing; if they cannot be forced up again, an incision should be made, the bone removed, and the place sewn up, when it will quickly heal.

THE HEART

lies immediately under the junction of the neck with the body. They are very subject to dropsy of this organ, or what is commonly known as water on the heart, which will be treated of when considering worms.

THE LUNGS

lie along the back-bone, extending down the ribs, but not adhering to them. They should be of a beautiful vermilion colour. When diseased or congested, it will be known by their black appearance, and by the clotted blood found inside.

THE LIVER

comes immediately behind the heart. There is no gall bladder. In health it is of a deep plum colour, with a beautiful flush on it, and is remarkable for its inviting look.

These constitute the organs protected by the ribs, and are separated from the remaining organs by a diaphragm across the body. Continuing our course from head to tail, we next have

THE GIZZARD,

or the mill where the food is ground up. This should always be hard and full of stones. It is subject in disease to get flabby, and consequently to allow the stones to pass into the intestines and out in the dung, as they should never do if the bird is in health. But more of this in treating of worms.

THE STOMACH

is the organ into which the food passes at once when swallowed. It corresponds with the crop of other birds. It is here that the juices are given out to the food from small cells dotted over a portion of the stomach, and it is the seat of one of the most formidable diseases

that has yet appeared (*See* WORMS). From the stomach the food passes up into the gizzard, and from thence into the intestines. The stomach and the gizzard are united together, and held by a diaphragm to the left side of the bird, to the left side of the backbone, and to the diaphragm, which divides the body in two. Thus the right side of the body, when the stomach is empty, has in it only the first small entrail; when the stomach is full, it extends nearly from side to side. These are points that must be borne in mind when we come to consider caponising.

THE INTESTINES.

These are roughly divided into the small and large intestines, or otherwise the upper and lower. The small intestines extend from the gizzard to the "cœca" (otherwise known as the two blind stomachs, from their having no outlet). In the small intestines the food is converted into what is called chyle. It is here we find the Tape-worm. From the "cœca" the large intestines begin. First we have the maniply, or what corresponds in cattle and sheep to the book paunch. From the maniply we pass on down the large intestines to the rectum. It is in these latter that we get constipation, or stop sickness, which is so fatal to the Ostrich.

THE TESTICLES

of the male, or the ovarium of the female, lie opposite the stomach, and under the hump in the back-bone, to which they are suspended.

THE KIDNEYS

are exceedingly large, extending along the back-bone from the testicles to the bladder.

THE BLADDER

lies just below the rectum, and is nothing more than an enlargement of the extreme end of the intestines.

The penis is curled up in the bladder.

The bones of the Ostrich, as in other birds, are hollow.

The age to which an Ostrich can live is unknown. It has been usually supposed to be very great, possibly a hundred years, as some people assert, though we believe this to be entirely guess-work. The usual calculation for animals, that of six times the period it takes to arrive at maturity, would give it twenty-four years, but we are inclined to think that it reaches a greater age than this.

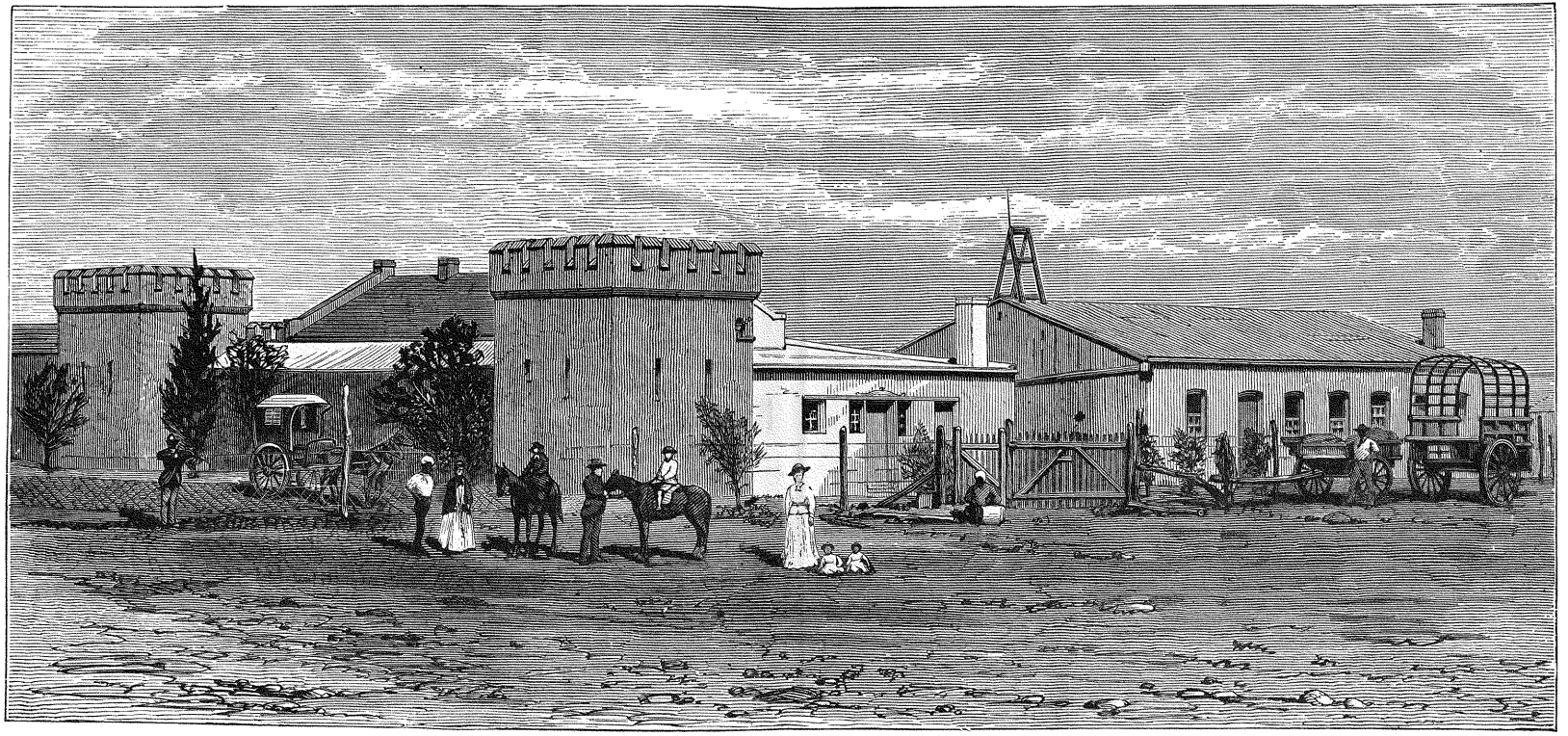
CHAPTER III.

SOUTH AFRICA IN A FARMING LIGHT.

With a new industry like Ostrich-farming it is highly essential to bear in mind the past history of the country in regard to its stock-carrying capabilities, and, if possible, so to manage things as to avoid all the ills that have befallen the other great industry of wool-growing.

The great body of the Cape Colony consists of great plains of Karoo country, composed of exceedingly fertile soil covered with alkaline bushes, with a scant and uncertain rainfall, in which cultivation is impossible without irrigation. The rainfall gradually gets less and less to the north-west, until in Namaqua Land we have a rainless country. The Karoo country is exceedingly good for sheep-walks, the sheep keeping in better health, increasing more rapidly, and growing larger than in other parts, and all other kinds of stock thrive better than in the grass country. But it is occasionally subject to such terrible droughts that heavy losses in stock occur.

On the coast, and extending on an average about thirty miles inland, is a heavy, sour grass country, on



THE HOUSE AND INCUBATING AND REARING ROOMS AT HEATHERTON TOWERS, NEAR GRAHAMSTOWN, SOUTH AFRICA, THE AUTHOR'S RESIDENCE.

which stock will not thrive and sheep will not live at all. Cattle, unless bred on it, die to an immense extent of liver complaints; only a small percentage of the calves can be reared. Horses get poor and wretched. The veldt swarms with myriads of ticks—from the little fellow that burrows in the skin of man, producing horrid sores, to the large Bonte tick that destroys the teats of the cows, and produces terrible sores on all animals. But it has a fine and comparatively certain rainfall of over thirty inches annually, and cultivation is carried on to a large extent without any irrigation, the crops never totally failing.

Between these two is a narrow belt of broken veldt, with a mixed herbage, and carrying the greatest number of live stock of any part of South Africa.

The northern parts of Kaffraria, the Queenstown and Aliwal districts, Free State, Basutoland, Transvaal, and Northern Natal are densely clothed with sweet grass in the lowlands, and sour on the high mountains. Stock of all sorts thrive well, and the country is capable of carrying a heavy stock. The rainfall being good and moderately certain, cultivation without irrigation becomes practicable. But sheep are subject to more diseases than in the Karoo; and some parts, after carrying sheep for several years, give in and will not maintain them.

The Ostrich in its wild state was originally found over every part of South Africa; but whether it lived year in and year out in the grass veldt, or only came there occasionally when driven out of the more barren parts by exceptional droughts, is now wrapped in oblivion. That it is always looked upon as essentially a bird of the desert we know, but this may not have been from choice—not that it would not naturally prefer the soft succulent grasses of the moister parts, but that these parts were where man found the readiest means of existence, and usurped to the driving out of the Ostrich. These parts, too, teem with animal life, and consequently here were found the lion, the tiger, the wild dog and jackal, ready to prey on the Ostrich and drive him into the desert.

The Ostrich has now been introduced into every part of the Cape Colony, and appears to thrive well in all, the high grass lands subject to much cold having as yet proved the least adapted to the industry. But it will take some years' more experience to prove which parts are permanently the best. It may prove, as with the sheep, that some farms on which they throve the best the first few years eventually proved utterly unadapted to them, presumably from certain herbs essentially necessary to the health of the sheep being so sparse on the land that they were quickly destroyed.

Birds as yet are only being farmed to a small extent in the Free State, and scarcely at all in the Transvaal and Natal.

Should the birds continue healthy on the coast lands, then these will undoubtedly be the best, as from the abundant herbage and large rainfall a very much heavier stock could be kept on the same acreage as inland; whilst the old ploughed lands would always produce succulent weeds that they are so fond of, and the farmer could grow his own grain for them; and it may be it will prove so, as the ticks that are so detrimental to other stock can only retain a hold in three places on the Ostrich, namely, under the thighs, and on the head and upper neck—all places where the bird cannot get at them to pull them off. And the stones and alkalies in which this part is deficient can readily be supplied to them in an artificial form.

Any one who has been in Australia, or has read much of the immense scale on which wool-growing is carried on there, where a hundred thousand sheep owned and managed by one man is not uncommon, and where ten thousand is held to be the smallest number that can be profitably worked, and then compares the Cape, where ten thousand is a rarity, and a man with three thousand is looked upon as well to do, would think that the soil and climate of Australia are superior. But it is

not so. They are very similar, the difference being in favour of the Cape, which, taking it all through, will carry a heavier stock to a given area than Australia. The difference is partially caused by the farmer having to purchase his land, because at the Cape a large proportion of his capital is sunk in land; whilst in Australia, the sheep industry being mainly carried on on government ground, the squatter merely paying a grazing licence of 8d. a head per annum for the stock the land is supposed to be capable of carrying, his whole capital goes into stock. But the great cause of difference is in the labour supply. In Australia labour is dear, but it is White, and does not require close supervision; therefore, large flocks, extending to a radius of twenty miles from the homestead, are practicable; and the fewer homesteads the less expense and more profits; whilst at the Cape the labour is very cheap, but very untrustworthy, great supervision being absolutely necessary; consequently, not more than one or two out-stations are practicable, and in most cases all the sheep are kept at the homestead, where they can be counted morning and evening and guarded from thieves, without which care they would soon melt away; the greater number of homesteads, therefore, up to a certain limit, the greater profit at the Cape; and this applies equally when comparing the size of the herds of cattle and horses in Australia with the Cape herds.

The same cause works in the agricultural districts, where everything is comparatively on a small scale, and things are done in a primitive style; but this is all in favour of the young emigrant of little or no capital.

The Romans held that the sheep was shod with gold, *i.e.*, that it brought wealth wherever it went, in that it enriched the land. This is so where they are enclosed, and leave their dung on the land; but it is the very reverse where they are herded in flocks. Then they trample and loosen the best of the soil, which gets blown in heaps and washed away; whilst the under-soil gets hardened down, and the rain runs off instead of soaking in. The manure which should be re-fertilising it gets deposited in enormous heaps where the sheep are kraaled at night, and where it is utterly lost to the soil. The sheep feeding year in and year out over the same ground, the best of the herbs are eaten down and prevented from seeding, till they die out and their place is taken by inferior kinds. This is what has gone on all over the Cape Colony, till many parts have ceased to support sheep at all.

Very great injury was done to the sheep industry by over-stocking, and allowing old, sickly, and inferior sheep to breed. This was partly done in error, and partly because, previous to the discovery of diamonds, there was no market for surplus stock; but the inevit-

able result followed. The limit which Nature appears to put to the amount of any one kind of stock on a given area was passed, and she sent diseases and swept them off. That this law is inevitable has been proved over and over again in England, where game has been attempted to be increased to an inordinate extent; but, in spite of all care and artificial feeding, after a certain point is reached diseases come on and sweep them off. And so with poultry; as long as a farmer keeps a few, what can be healthier? But let him get an excessive number, and how quickly diseases break out and reduce them down!

We have written thus much about the sheep, because unless Ostrich-farmers are careful not to crowd the birds on the land, the same results will inevitably follow with them. The land should not be stocked to the extent that it is at first capable of carrying. If it is, the best herbs will be destroyed; whilst if it is only partially stocked, in good seasons these get a chance to seed and reproduce themselves. Even greater care is required with the Ostrich than with the sheep, from the habit the birds have of selecting one particular plant to feed on, and, as long as they can get that, neglecting all others. The only thoroughly effective way to prevent this is to let half the farm lie idle six months, and then the other half the next six months. The man of

means, and owning his own farm, should always have two large camps for each troop of birds, if he would keep an eye to the future as well as the present; whilst the needy man on a hired farm can move to another farm when his lease is out, and thus save himself from the inevitable consequences of over-stocking.

CHAPTER IV.

THE CAPITAL REQUIRED.

BEFORE going into this question it will be necessary to answer the question, What is capital? Most young men will exclaim, "The money my father has given me to start with;" or, "The money I have inherited, or expect to inherit." But this is a most deceptive idea of capital, as excepting in the rare cases of the young man inheriting large estates, where he has nothing to do but live off the rent-roll, or where it is so tied up that he has only to take the interest without having anything to do with managing the principal, the money inherited, unless accompanied by a thorough knowledge of the business in which it is to be employed, will soon be lost. There is an old Birmingham saying, "The man that begins business in his shirt-sleeves will end in his carriage. The man that begins in his carriage will end in his shirt-sleeves." This is the case all the world over, but doubly so in the case of a man emigrating from England to the Cape, where everything is so different.

So that we see capital in its useful sense consists

of other things besides a sum of money. The labourer's capital consists in his strong sinews and early training to manual labour. The mechanic's capital consists in the skill he has acquired at his trade. The professional man's capital, in the money spent on his early education, and during the time of his articles or college training; it is large or small, according to his natural abilities and the use he has made of them. The merchant's capital, in a sum of money, and general knowledge of business, and business habits. The Ostrich-farmer's capital, in the money invested in his stock, and knowledge of Cape farming generally, and the management of birds; the two latter being the most important.

But what capital does the young Britisher, scion perhaps of some good family, well-educated, and sent out to a colony with perhaps no money, or with a few hundreds or a few thousands to his credit or in prospect—what capital does he possess? Much, but not yet in such a shape that he can make use of it. Before he can do that, he must acquire "colonial experience." If he is impatient, and attempts to use the money before he has acquired this, he will almost inevitably lose it; but if he has the patience to let this money be, as though he did not possess it, to let nobody know that he has it, till he has had at least two years'

thorough training in farming, mercantile pursuits, or whatever course he has determined to adopt, he will then find himself in a colony offering him a better chance in the world, at the present time, than any other.

Nothing in Australia, New Zealand or Canada can offer anything like the opening the Cape does to a young man, with only a few hundreds of capital, to set up for himself, if he has only had a thorough training in his business.

All sorts of people in the towns, with a little spare capital over and above what they require in their business, have been investing in birds, and putting them out on the "halves," and any young man who has made a name for himself during his novitiate, if he can only get helped with a few hundreds to enable him to hire a farm and furnish himself with the necessary plant, can get birds on the "halves." Or should the mania for Ostrich-Farming Companies last, there will be a brisk demand for managers and assistants.

It will be noticed that I lay far more stress on colonial experience than on actual technical knowledge of Ostrich-farming. It is so. The colonist born has heard Ostriches discussed of late years both in town and country, by man and woman, rich and poor, till he must be dull indeed if he has not picked up a good deal of the required knowledge—enough, at any rate,

to make a start in a small way, especially if he has had any other farm experience.

The difficulty is, how can a young man acquire this experience? To send him out to a colony without friends or relatives to go to, with the vague instructions to make his way in the world, is cruel. Occasionally such a one may tumble on his legs by great good luck, but the chances are infinitely against him. If he has capital he will be sure to invest it foolishly. We all know what "buying a pig in a poke" means; how rarely the purchaser does not find out afterwards he had better have left it alone; and yet everything the man without experience buys is a "pig in a poke."

The only chance for a man emigrating to the Cape to Ostrich-farm is to be well supplied with letters of introduction, if possible from relatives of well-to-do people living at the Cape; even then he will find it no easy matter to get on a good farm, where farming is conducted on a large scale. He must then be prepared to pay £100 premium the first year, beside being ready to buckle-to and work hard at anything —no matter what it is—to which he is set. Board and lodging he will, of course, get free, usually living in the house with the master. It is this latter that constitutes the objection farmers have to cadets, and

no wonder, with the bad household servants generally to be had at the Cape.

But with experience once gained, then the advantages of the Cape are seen. Whilst in Australia or New Zealand the man with less than £5,000 or £10,000 cannot start on his own account, here a few hundreds will give him an excellent start, with the help of birds on the "halves." That he will have to live close and study economy at first he must expect, but do this, and, with ordinary luck at Ostrich-farming, he is a made man.

CHAPTER V.

FENCING.

THIS is one of the most important subjects for the Ostrich-farmer. From the day he possesses an Ostrich, he is called upon to use his judgment as to the relative kinds best adapted to the veldt on which he is about to farm, the best suited to his means, and the labour he is able to procure. Before Ostrich-farming began, fencing in South Africa for the use of stock was an unknown thing. Farmers' horses and working cattle had to be let loose when the day's work was over; and the common excuse of a farmer, when he did not keep some appointment until a day or two after the time, was that his horses were lost, whilst half a day or a day being lost at any work through the bullocks straying was of common occurrence. But now no farmer with any enterprise would dream of farming without an enclosure for these, even if he had no birds. We have often laughed when we think of our first purchase of wire, and remember the hunt we had all over Grahamstown without finding a bundle, till we came on a merchant who had had

some sent to him some years before on consignment, and which he was about shipping back as utterly unsaleable in the country; and now look at the thousands of tons which are annually imported!

Efforts are constantly being made by the English manufacturers to send out complete ready-made fences, with iron standards and iron winding-posts; but the standards always bend and break, while the fences are never high enough for Ostriches, and the cost is infinitely greater than a thoroughly good fence with the hard wooden posts procurable in most parts of the country. The only really good iron standard that has ever been sent out is the hollow iron post, but its cost is prohibitive; it is never used except by government to fence some parts of the line on the railways. But "Massa Government—him very rich man."

The general fences in use consist of—

Bush-fencing,
Wattle-fencing,
Post and Wire,
The same, with Bush Interlaced,
Stone Walls.

We will take these *seriatim*.

Bush-fencing consists simply of bush cut down and piled up to the height of a few feet, being either ridden

on by a waggon, or, more often, put into convenient heaps, a chain slipped through the butts, and then dragged into position. This is, of course, the cheapest of all fences, but it is always decaying and constantly needing repairs; in high winds, too, it is very apt to blow over and leave gaps. But where hard bush, such as prim, baboon, &c., are plentiful, close to hand, or on a hired farm, or where the bush is so thick that there is a secondary object in view, viz., getting the bush thinned out, it makes a fairly efficient fence, and is specially well adapted for young beginners. But if used to a great extent, the time comes when, from the scarcity of labour or other reasons, it cannot be kept in repair, and the farmer soon heartily wishes he had gone in for something more expensive, but more permanent; and, if it is a fence intended to be kept up for a number of years, the constantly recurring expense of repairs will soon aggregate a larger sum than what the original cost of wire or stone wall would have been. Bush-fences made of mimosa or other soft woods will only last about six months, and are quite ineffectual for cattle.

The prime cost of bush-fencing is about sixpence a yard.

Wattle Fences.—These are principally used on the coast lands where the bush grows high with long

branches, and where suitable light poles can be cut in the nearest kloof, and where, the ground being soft, the cost of planting the poles is not much. The poles are planted about three feet apart, and the long pliant boughs interlaced between them, and wattled to the height of about 4 feet 6 inches. It occasionally requires a little fresh wattling on the top, when it makes a good effective fence; but is only durable till the little poles rot in the ground, and should only be used under the same circumstances as the last. The prime cost is about ninepence the yard.

Wire Fencing.—This constitutes the great bulk of the fencing now done in the country. We have at present an unlimited supply of magnificent sneezewood poles, a good sound one of which, seven inches in diameter, will last a generation. It has only one drawback—that birds that are unused to it, and are in a comparatively small enclosure, are apt when they take fright, especially at night, to run against it and entangle their legs in the wires. But this will never happen if the fence is erected as we shall now advise, though with any fence under the sun a bird may hurt itself by the sheer force with which it comes against it. Where the fence is required for Ostriches not younger than a year old, four wires are sufficient, and are better than a greater number. Where

cattle of different sizes, or birds, are required to be enclosed or kept out, five wires are best; or for a boundary line between two neighbours even six wires may be used; or where it is required to fence sheep as well, seven wires are required. It is always preferable to use galvanised wire, not only for its greater durability, but because it shows out to the stock so much better. A wire fence for Ostriches should never be less than 4 feet 9 inches in height, as it then catches above the bend of the Ostrich's neck, and stops the bird trying to get over, as it otherwise will do. A four-wire fence should be made of all No. 3 B.W.G. wire. A five-wire fence should have the three top wires No. 3, the others No. 4. In a six or seven wire fence the lower wires may be No. 5. The number of yards of wire to the ton, the sizes measured by Birmingham wire-gauge, are :—

No. 3	...	...	4,570 yards.
No. 4	...	...	5,455 „
No. 5	...	...	6,580 „

But it must be borne in mind that the colonial ton is only 2,000 lbs.; so that No. 3 wire runs two yards to the pound; or, in other words, a colonial ton will do 800 yards of five wires of No. 3 wire. To construct a thoroughly good fence, the farmer should always purchase the best poles he can get, not less

than seven feet long, to be put two feet in the ground, and ten feet apart. Every 400 or 500 yards, or less where there are dips in the ground, the fence should break off, and the next length commence as a fresh fence, thus:—

400 yds. 500 yds. 500 yds. 400 yds.

This is to avoid the great strain that must otherwise come by the contraction in cold weather if carried as a continuous fence. The end poles should be eight feet long, and the heaviest poles picked out for this purpose. They should be three feet in the ground, supported by a strut in front, and tied down to the foot of a short pole put deep in the ground about ten feet behind them. This tie should be made by twice threading a wire through the top of the end pole, and through the foot of the back stay pole just mentioned, this being hove tight with a crow-bar in the same manner that the transport riders tighten their wool reims. The crow-bar can be drawn out when it is tight, as the twist will not come loose. A heavy stone should be placed, partially buried, in front of the strut, the end pole, and the back stay pole. Where the holes are in rock, the end and back stay poles should always be run in with concrete, and better still if the line poles are also. Although this may sound expensive to some

farmers, I can assure them it amply repays them. The wires should never be stapled to the poles, but the poles should always be bored with a brace and auger bit. The wires are best divided as under :—

FOUR-WIRE FENCE, 4 FEET 9 INCHES HIGH.

Lower wire, 1 ft. 9 in. from ground.
Other wires, 1 ft. apart.

FIVE-WIRE FENCE, 4 FEET 9 INCHES HIGH.

Lower wire, 1 ft. 2. in. from ground.
Next two, 10 in. apart.
Next one, 11 in. „
Next one, 12 in. „

SIX-WIRE FENCE, 4 FEET 9 INCHES HIGH.

Lower wire, 8 in. from the ground.
Next two, 8 in. apart.
Next one, 10 in. „
Next one, 11 in. „
Next one, 12 in. „

SEVEN-WIRE FENCE, 4 FEET 9 INCHES HIGH.

Lower wire, 7 in. from the ground.
Next two, 6 in. apart.
Next one, 7 in. „
Next one, 8 in. „
Next one, 11 in. „
Next one, 12 in. „

At one end of each separate length of fencing either a 12 in. eye-bolt, or, best of all, one of Morton's patent

ratchets, must be put to tighten the fencing should it at any time get slack, as it is everything with a wire fence to keep it as tight as a drum. The wire is hove up at the other end by a piece of wood with two cross-pieces of wood let in it, and used as a windlass. An old yoke with a hole bored through the centre of it does very well for this purpose; the wire when tight being caught by an implement called an elbow whilst it is being taken off the windlass, and made fast round the post. If you have not an elbow the hole must be plugged, but this is always apt to slip and give trouble. One perpendicular tie of No. 5 wire connecting the wires should be put between each two posts.

Care should be taken that the men do not simply take hold of an end of wire in the coil and walk away with it. The wire should be carefully uncoiled, not a turn being allowed to slip, as otherwise the wire will be weakened, and it will never come properly straight and stiff. Most workmen now understand how to join the wires. It is done by overlapping the two ends and nipping them with a screw-hammer, or with implements sold for the purpose, then twisting each end with short turns round the opposite wire with an iron with a hole in the end. Where the post-holes are in hard rock they can be cut out with a chisel-pointed steel jumper and hammer.

The cost of a mile of 5 wire fence as here described will be

	£	s.	d.
4,900 lbs. at 22s. 6d.	55	2	6
546 posts at 1s. 3d.	34	2	6
20 Morton's ratchets at 4s. ...	4	0	0
Labour at 1s. 3d. a post	34	2	6
4 casks of cement at 30s.	6	0	0
Wear and tear of tools	3	0	0
Moving material	3	0	0
	£139	7	6

or 1s. 7d. per yard. This appears expensive, but when put up it is a perfect fence, and should scarcely require touching for years, as a broken wire is a very rare sight. Like every other good thing, it must be paid for. When erected in ground the cost of the cement would be saved. The prices I have given are the current prices in Grahamstown at the present time. Further up country the cost of carriage of the material must be added; whilst it must be borne in mind that labourers require tents or other accommodation, which often adds to the expense.

It will be noted that the weight of wire given includes the ties, and the number of posts includes what is necessary for breaking it into lengths as before described. A 6 or 7 wire fence does not cost much more, as then lighter wires are used, and labourers

generally take the work at so much the post, irrespective of the number of wires. But for Ostriches, the greater the number of wires above five the greater are the chances of their entangling themselves.

Post and Wire with Bush interlaced.—A fair fence costing less than the last is sometimes made by putting the posts fifteen feet apart, with only three wires, and these put up roughly and slack, with bush interlaced. Of course this is nothing like the permanent fence that the last is, but it is the cheapest thing that a man out on the Karoo flats, where bush is scarce, can put up, and is often used by men who, not understanding how to put up a wire fence properly, think their birds will come to grief unless they have the interlacing bush.

Stone Walls.—The great advantage of a stone wall over other dead fences is, that whilst being permanent it serves for small as well as large stock, and at the same time makes a considerable break-wind; and on a sandstone formation, where stone of a good square shape can be procured near the site of the proposed fence, it is the best. The drawbacks to it are the time it takes to complete any considerable length of fencing; and consequently those who want an immediate return from their capital cannot afford it, as the money laid out on the fencing, until the enclosure is completed, earns nothing. It is also always liable to fall into gaps,

and is useless for goats, who jump over it. Where the stone is of a shaly nature it is useless for dry stone walls, as in a few years the stone will crumble away; and where it is of a round bouldery nature it requires a very experienced man to pack it so that it will not fall.

A wall should be four feet high, three feet at the base, and eighteen inches at the top, but if the stone is very good, the base need not be so wide as this. The great thing to look out for is that the men do not put in "shiners"—that is, stones showing their longest face to the front. They should put a great number of "through" stones—that is, stones going right through from one side to the other, and the stones on the two sides of the wall should constantly overlap from one side to the other. If this is not done, although the wall may stand all right for a year or two, it will then begin to fall into gaps in all directions. The usual price for quarrying the stone and packing the wall is 1s. 6d. per yard, and this usually includes the men loading the stone on and off the wagon, the farmer finding wagon and oxen, also leader and driver, who assist with the loading and off-loading. The wear and tear to wagon and oxen is great, and if the stone has to be ridden any considerable distance it will put another shilling a yard on the cost of the wall.

Although, as a rule, stone walling may be con-

sidered as safe for birds as any other fence, I have known it, when built with stone from an igneous formation, to be the cause of many birds injuring themselves by kicking against the sharp points when fighting with each other on opposite sides of a wall, and I have also known serious losses to occur where birds have stampeded at night, and have run with great force against it, many killing themselves.

For fencing in lands and gardens it beats anything, as it keeps out porcupines and hares, which are often so destructive, especially in the sweet veldt.

For little short lengths of fencing, where bush is not procurable, old tire-irons off the hind-wheels of wagons, when straightened and bolted on to sneezewood posts, make a very strong and durable fence. These can be bought from the wagon-makers for 5s. each, ready bored for three bolts; but the fence becomes too expensive except in special cases. And the same thing applies to imported fences of bar-iron and standards, which come very expensive if high enough for Ostriches.

Live fences have been very little used in the colony. The easiest grown are the American aloe and the prickly pear, but the former is liable to be destroyed by moles whilst the plants are young, and the latter is a nuisance to the birds when the fruit is ripe. Pomegranate, quince, and other things are often used where

they can be irrigated and the soil is moist, but of course this is only the case in lands or gardens.

Mutual Fencing.—By this we mean a boundary fence erected between two neighbours, each sharing the expense. All the Australasian colonies have found it necessary to legislate on this matter, to save the enterprising farmers from being deterred from fencing in their land, by the very natural feeling of not caring to bear the whole expense of erecting a fence which will benefit the adjoining neighbour equally with themselves; whilst anything that tends to deter a man from fencing in his land is not only detrimental to the individual but to the whole community. And as it is of primary importance, both to the state and to everybody in the country, that the land should be made to produce as much as possible, and as it is an undisputed fact that enclosed land will carry a much heavier stock than unenclosed land where the stock is herded, these countries have seen it is one of those subjects in which private rights and inclinations must be made to give way to the general weal. And seeing that the country is saved from being deteriorated when it is enclosed, whereas it rapidly deteriorates when the stock is driven about in flocks, they have all passed acts varying in detail, but all embracing the main feature, that where a farmer fences a boun-

dary line, the neighbour should be compelled to contribute half the cost.

Some years ago a movement was made in the colony to get legislation on this subject, but great opposition was shown to it by the less enterprising part of the community, and no act has succeeded in passing. Whilst we should hesitate to go the length of the Australians in compelling an unwilling neighbour to find half the necessary capital, which, if his financial position was bad, might prove ruinous, much of this difficulty would have been met by allowing the man that wants to fence to find all the capital, and then to take a preferential lien on the other man's farm to the amount of 10 per cent. annually on the half-cost of the fence for fourteen years, by which time, if we reckon the normal rate of interest on money at 6 per cent., the extra 4 per cent. would have formed a sinking fund, which in fourteen years would have extinguished the debt. And as the property would have been improved to a greater extent than the half cost of the fence, the mortgagees would not be affected by this lien being preferent. Or, better still, if the government were to advance the money on these terms, as it now does on irrigation works, which are much more liable to destruction, and probably of less advantage to the country than fencing.

It is often urged that the fencing of a particular boundary line may be of more advantage to one farm than another: it often is so, but any hardship on this score could be met by the unwilling party having the right to call in arbitrators to decide on the relative portions of expense each farm should bear.

Another suggestion which has been made, is that the unwilling man should not be called upon for his half the expense unless he used the fence as part of an enclosure, or made some other fence abutting on to it. It would have been wise if this scheme had been accepted, as then the most sensitive could not have feared that there would be any oppression towards the poorer or unwilling man. As it is, whole tracts of country lie unfenced and producing little or nothing towards the general wealth of the country, which would otherwise have been fenced and have become highly productive.

It is found in practice that neighbours seldom agree as to erecting a mutual boundary fence; in consequence the fencing man is driven to fence a few yards inside his boundary, with the object of compelling his neighbour to share the expense before he can make use of the fence. This, if it continues, will, in the course of time, bring endless disputes as to where the boundaries of the farms are.

Where the cost of the fence is to be mutually

borne, the one that undertakes to erect the fence should be very careful to have the following points settled before he does so:—*First*, that the boundary stones as standing shall be admitted as correct; this is highly essential, as in a long boundary line some of the stones are sure not to be in line, and after the fence is erected the other man might refuse payment on the grounds that the fence was not where it ought to be. We knew a case in point, where, after the fence was erected, the man not only refused payment, but by a law-suit compelled his neighbour to take up the fence on the grounds that it was a few feet out, and to again erect it in terms of his contract. *Second*, the nature and quality of the fence should be clearly defined, and it should also be stated that the one half is to stand immediately on one side of the beacon stones, and the other half on the opposite side, each party being bound to keep in repair the part that stands on his own land. *Third*, it should be stated in the contract that any slight unintentional divergence from the true line shall not be disputed, and that as long as the spirit of the contract has been fairly acted up to there shall be no dispute. Unless these points are conceded, a man had much better fence inside his boundary at his own cost.

CHAPTER VI.

THE PROFITS FROM OSTRICHES.

WHAT return do birds give on the capital invested? This would be the first question asked by any one thinking of going in for farming. It is a question very few even of those that have been at it some years could answer, and of which the public have the most wild ideas, or else the promoters of the joint-stock companies that have been lately started in all directions would never have the barefacedness to advertise prospectuses promising the public from 40 to 100 per cent. per annum on their investment; including in this even the capital sunk in land, buildings, dams, &c. &c., which give no direct return, and which in England would represent the landlord's investment, and which is subject to scarcely any risk, the fencing, buildings, wagons, &c., being the only part subject to natural decay. A return on the whole of this part of the capital of 15 per cent. per annum would be a good return.

Now where the private individual or company combine both ownership and occupation, it may be taken that the dead capital, *i.e.*, that which will give no direct

return, is a half of the total investment under indifferent management, or where the buildings, &c., are of a solid, permanent kind, and the future is looked to as well as the present; or a third, where the screw is put on, and the improvements are not of such a permanent character.

No doubt this statement will make many farmers who are not in the habit of keeping books, and looking carefully into things, exclaim "Nothing of the sort." To such I say, sit down, price and total up the cost of everything employed, and you will be astonished.

At any rate, taking the prospectus now before me of a company lately successfully floated in Grahamstown, and for which hundreds of shares were applied for more than were available, and in which the promoters promised a net return of over 40 per cent. the first year, and over 100 per cent. in subsequent years, the investment was :—

Farm with buildings, fencing, &c., &c. ...	£4,225
Birds and eggs	5,775
Available for other purposes	2,000
	12,000

The "available for other purposes" would mean transfer dues, wagons, oxen, horses, carts, implements, current expenses, &c. So that more than one-half was

here calculated as dead capital; consequently the birds were represented to pay, over and above expenses of management and feeding, 185 per cent. per annum.

Of course the thing is absurd; did birds pay anything like this, we should have had ere this every shopkeeper selling off his stock, hiring strips of land, and putting every penny he could get hold of into birds. That some pairs of birds will have four nests in a season, and bring out, say, twelve chicks in each nest, which might be sold for £6 each at a day old, we all know. And that this may be greatly increased by artificial hatching we know, as see the almost fabulous returns I made by this means, as given in the chapter on Artificial Hatching, where you will see that one set of birds gave a gross return of £1,676 in one year. But that this is any criterion of what a general stock can be trusted to do, we deny.

We know an estate where all the land has not been stocked, and where everything is done with a liberal hand, and in the most permanent style, which has averaged for the last six years a net return of 30 per cent. per annum on the total investment, including cost of land and all improvements. As also one which, for the four years 1872, 1873, 1874 and 1875, averaged a net return on the capital invested of 66½ per cent. per annum; but in this latter case the land was hired,

everything was studied to lessen the amount of the dead capital, and the expenses were pared down to the lowest possible shilling, whilst the farmer worked terribly hard with both hands and head, and thoroughly understood his business.

But this was before "fever" in the chicks was known, and when ostriches altogether were healthier, and kept their condition with less feeding. Even then the returns varied exceedingly: thus, whilst in 1872 the net profits were considerably over 100 per cent., in 1873 and 1874 they were under 50 per cent.

One of the best items of profit to a farmer is the increased value of his troop of plucking birds. Thus a bird twelve months old, value say £22, would be at four years old worth £50, besides having given on an average £12 a year in feathers; so that, allowing a loss of 10 per cent. per annum in deaths, the return is grand.

Each bird should give one pound weight of feathers, if plucked as advised in the chapter on Plucking. There should be fifty quill feathers: this includes, say, four fancy-coloured in each wing. The tails vary exceedingly in the number of feathers—from 75 to 100. A good average all round is, say, quills, 5 ounces; tail, 5 ounces; blacks or drabs, 6 ounces.

CHAPTER VII.

BIRDS ON THE HALVES.

THE system of farming birds on the halves is now so general, that the leading features of it are familiar to most people at the Cape, but in detail agreements vary much; many even take them without any written agreement, but this is a most objectionable practice. We now give examples of fair agreements at the present time, in both the cases of breeding birds and plucking birds.

BREEDING BIRDS.

Agreement made and entered into between Mr. A., on the first part, and Mr. B., on the second part, by which—

1. The first-named agrees to lend the second-named two pairs of guaranteed breeding Ostriches, to be farmed by the second-named on the halves. That is, Mr. B. is to find grazing, and to bear all and every expense connected with the birds.

2. The birds to remain, as now, the sole property of Mr. A.

3. The proceeds of all sales of feathers to be equally divided by Mr. B. within one month of each sale, and original account sales submitted by him to Mr. A.

4. Any chicks from these birds to be sold by Mr. B. between the ages of three and six months, but only at such price as Mr. A. shall consent to. If not sold when six months old, then to be