Department of Primary Industries and Regional Development
GOVERNMENT OF WESTERN AUSTRALIA

Journal of the Department of Agriculture, Western Australia, Series 3

Volume 4
Number 5 *September-October, 1955*

Article 6

9-1955

Geese - Some notes on breeding, feeding and management.

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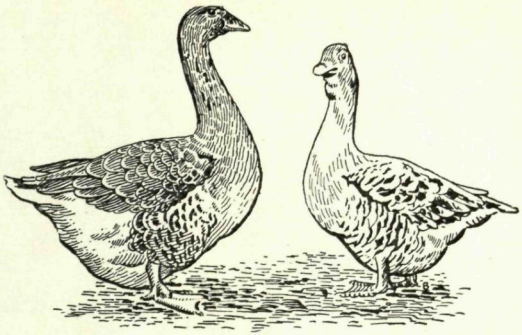
GEESE

Some Notes on Breeding, Feeding and Management

By S. FROOME



GEESE are essentially a sideline of farming activities, and where pasture is reasonably plentiful there is no doubt they can be made to pay if they are are managed correctly. The main object of keeping them is to produce meat for the table, egg production being considered only for breeding purposes. It is generally agreed that geese are the hardiest of all classes of poultry. Disease among adult stock seldom occurs, probably because the birds live under healthy, natural, open air conditions. Geese live for several years and in many cases it is economically sound to keep proven breeding stock for periods up to 10 or more years.

The number of geese in Western Australia in 1954, was approximately 750 which suggests that the breeding of this class of table bird has not been popular in this State. That the breeding of geese has been neglected appears to be rather remarkable. Geese do not require housing and furthermore, adult geese can live almost entirely on grass, are excellent foragers and when allowed free range are quite capable of looking after themselves. Year by year more land is being laid down to pasture in the South-Western portion of the State —particularly in the irrigated areas, and it is in these districts that a flock of geese should return a reasonable profit.

A small flock can be used to keep down the grass around farm buildings and provided they are kept from the vegetable and flower gardens, will keep the immediate surroundings of the farm free from long grass during the winter and spring.

BREEDS IN WESTERN AUSTRALIA

There are many breeds of geese in the different countries of the world, each country having its popular breed or breeds, but those in Western Australia are mainly Toulouse, Embden and a few Chinese. Environmental conditions partly determine the breed which should be selected for each farm; where pasture is good, Toulouse will do well, but the hardy Embden will thrive on rough, poor herbage. The following short notes on the breeds mentioned may be useful to the farmer who wishes to commence with geese:—

Embden.

The Embden is, perhaps, the most useful variety of goose. It gives good results in most situations as it is hardy, vigorous and prolific and, as a rule, fertility, hatchability, and rearability are exceptionally good.

The general characteristics of the adult are:—

Head—long and straight.

Bill—fairly short, stout at base.

Eyes—bold.

Neck—long, the throat uniform with the under mandible and neck.

Body—broad, thick, and well rounded; broad shoulders and stern; long straight back and deep paunch; large and strong wings; close tail; carried well out.

Legs—fairly short; large and strong shanks; straight toes connected by webs.

Carriage—upright.

Plumage—hard and tight.

Weight—gander 30 to 34 lb.; goose, 20 to 22 lb.

Colour—bill, orange; eyes, light blue; legs and feet, bright orange; plumage, pure glossy white.

This breed matures early, the breast is well fleshed, and the colour and texture of the flesh is very good. The goose usually lays 18 to 30 eggs in the first clutch and 10 to 12 in the second laying and is a good sitter and brooder.

The gander is often used to cross with other varieties and the quality of the flesh of the progeny is thereby improved. The goslings are easy to rear and mature quickly. They do not require housing after their backs are feathered. It is general for the goslings to be grey coloured on the back down and some will carry a few grey feathers on the rump.

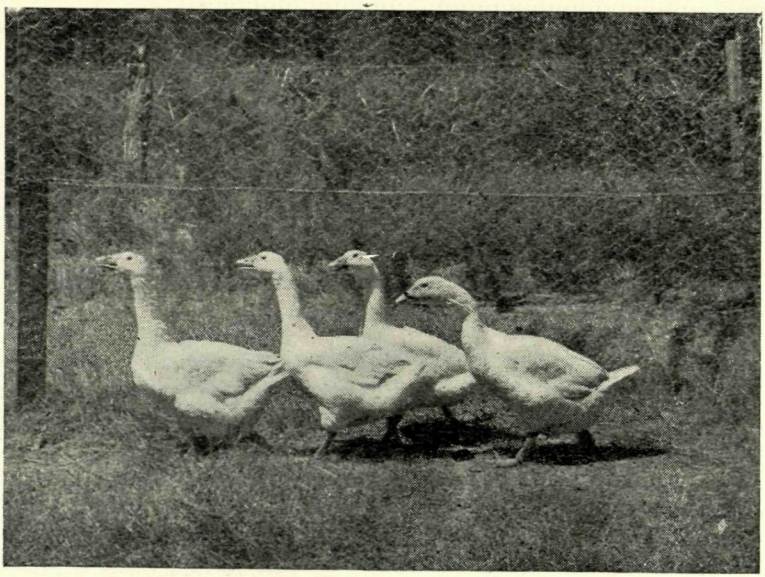


Fig. 1.—Embden gander (front) and goose (rear) with their two young

Toulouse.

As the name denotes, this variety is of French origin and is popular with the fancier who interests himself in breeding exhibition birds. The Toulouse is unlike the Embden in type and colour. The throat shows plenty of gullet and the body is long, wide and deep. It is not as active as the Embden and the gander should not be mated to more than three geese, but is generally considered to be the best layer of the heavy breed geese. As a rule the Toulouse is not a good sitter, many strains show no signs of broodiness. The general characteristics of the breed are:—

Head—strong and massive.

Bill—strong, fairly short and well set in a uniform sweep from the point of the bill to the back of the skull.

Eyes—full and dark brown or hazel in colour.

Neck—long and thick, the throat well gulleted.

Body—long, broad and deep; prominent breast, deep and full; the keel straight from stern to paunch, increasing in width to the stern and forming a straight underline; broad shoulders.

Back—slightly curved from the neck to the tail; large and strong wings; somewhat short tail carried high and well spread; paunch and stern heavy and wide, with a full rising sweep to the tail.

Legs—short; shanks, stout and strong boned; straight toes connected by webs.

Carriage—somewhat horizontal, not as upright in front as the Embden, and thick-set.

Plumage—full; somewhat soft.

Weight—Gander 28 to 30 lb.; goose 20 to 22 lb.

Colour—Bill, legs and feet orange; plumage—neck dark grey; breast and keel, rather light grey shading to thighs; back wings and thighs, dark steel grey, each feather laced with an almost white edging, the flights without white; stern, paunch and tail, white; the tail with a broad band of grey across the centre.

Chinese.

The original Chinese variety is found in China, Siberia and India and its general appearance suggests a swan, especially in the neck, head, and knobbed bill. It is smaller in size than either the Toulouse

or Embden, is hardy and a more prolific egg layer than the two breeds mentioned previously. It is a lover of water but appears to be quite contented and its eggs will show good fertility without any swimming water. The Chinese goose often lay up to 60 eggs a year and mated to an active Embden gander will give many fast growing goslings which will show the deep and wide body of the Embden. The goose is a good sitter and mother, and will hatch out and rear her goslings most successfully. There are two varieties—the white has an orange bill and orange-yellow shanks. The brown variety has many shades of brown with whitish under parts and with a darker brown stripe running down the back of the neck. The bill is black or dark slate and the shanks are orange. No standard of perfection has been laid down for this breed.

AVERAGE WEIGHTS OF BREEDS

The weights previously given for the Toulouse and Embden breeds are those required by the English Poultry Club's Standard of Perfection, but the following table approximates more closely the weights obtained in general use:—

Breed	Adult Gander	Adult Goose	Young Gander	Young Goose
	lb.	lb.	lb.	lb.
Toulouse	26	20	20	16
Embden	20	18	18	16
Chinese	12	10	10	8

As geese are raised primarily for meat the breed or cross breed should be selected for its rapid growth and efficient meat production. Under Western Australian conditions it is probable that the Embden or Embden-Chinese cross would give the best results.

SELECTING AND MATING THE BREEDING GEESE

It is not easy to distinguish the sex of geese as both sexes resemble each other closely. The following points may be helpful:—The gander has a high shrill voice, but the goose has a harsh, hoarse cry; at the same age, the gander is usually larger than the goose, has a slightly longer neck and larger head.

The sex of each bird over seven months of age may be determined by examining the sexual organs. An assistant should hold the bird flat on its back. In the females, the sphincter muscle which closes the anus appears folded if stretched. In the male, slight pressure around the anus usually results in the sexual organ being protruded.

Best results are obtained when females of two years of age or more are used in the breeding pen. If younger birds are used, the goslings hatched from these birds should not be kept for breeding purposes but should be marketed. Yearling ganders may be used provided they are well matured specimens of at least eight months of age. The best age for breeding is from the third to the fifth year. Females give good results for 10 years but it is not advisable to keep ganders for more than six years. The breeding stock should be selected from the progeny of breeders that are three years old or older, and as the laying season is usually short and rarely exceeds six months they should be the progeny of females which have proved good layers. The breeders should be healthy, vigorous birds, up to weight, the body long, wide and deep, not coarse in the head and with bright alert eyes. They should be handled for faults, such as, abnormal feet, roach back, and crooked keel bone.

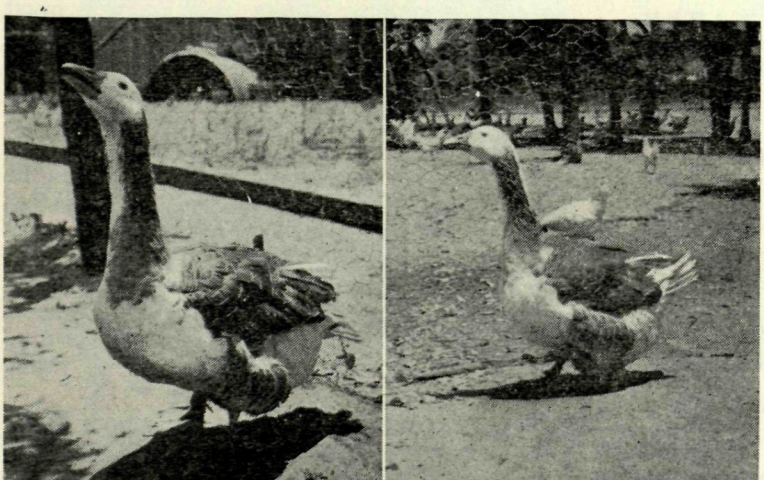


Fig. 2.—Good specimens of the Toulouse breed. The gander is shown in the left-hand photograph and the goose on the right. Note large body size

Early selection and mating is advisable as it takes geese some time to settle down, therefore, pens should be made up in the autumn. Each pen should be kept separate during the breeding season to prevent the ganders from fighting. It is customary to run two to three females with one gander, but one gander of the Chinese breed may be successfully mated with five females.

It is possible to flock-mate with geese but it requires patience and close observation. A perfectly mated flock pen can consist of either two ganders and eight females, or three ganders and 12 females. Most satisfactory flock matings are secured by bringing the sexes together while both are still in the gosling stage. It is advisable to put together more birds than will be required to allow for the culling of unsatisfactory individuals. Close observation should be made as the birds near the adult stage; it is usual to find a certain amount of fighting among the ganders. If they are fairly evenly matched no serious harm will result but if one gander obtains an undisputed mastery over the rest he should be removed and mated to two or three geese in a separate pen. Ganders which submit to bullying must be removed for they will never be given an opportunity to mate with the geese.

Females harassed by their own sex and ignored by the ganders will be noticed moping and moving about alone, and should be culled. Watch the geese at the feeding trough, the bully and the bird which habitually hangs back will be noticeable and both should be culled.

For flock mating of geese to be successful, absolute harmony with the flock is required.

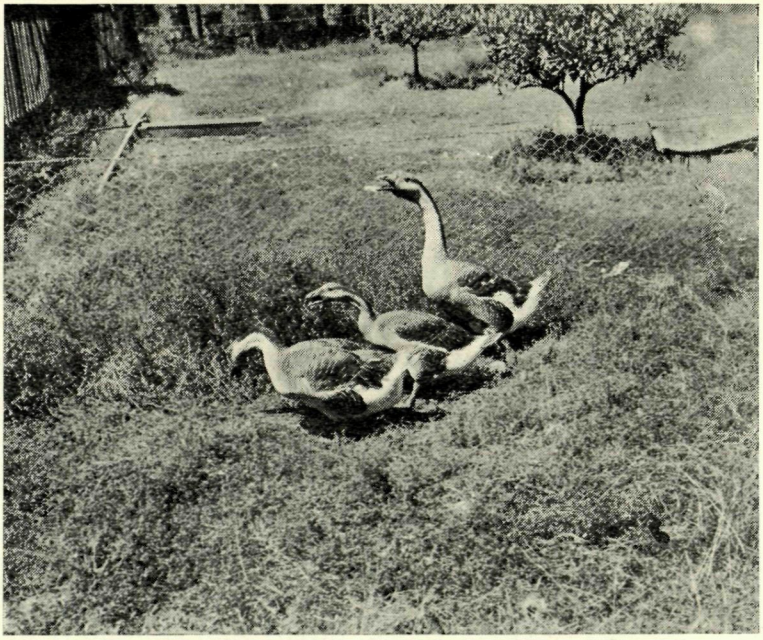


Fig. 3.—Three specimens of the Chinese breed. Note the knobbed bill. The gander is in the rear and the goose in the front, with a 12-week-old young bird between them

HOUSING AND MANAGING THE BREEDERS

When flock mating is not practised it is necessary to confine each breeding flock in a separate pen. The yards should be as large as possible and a fence about 3ft. high will keep the birds confined. Prior to mating, the yards should be planted with a green crop to give breeders as much pasture as possible. The yards should contain a number of shade trees as geese must be protected from the hot sun.

Housing does not present much of a problem. A small shed with a wire netting front, which can be closed up at night as a protection against foxes is sufficient. A cement floor above ground level must be provided to ensure dry sleeping quarters and must be covered with plenty of clean straw, shavings, or sawdust. Both goslings and geese are apt to foul their sleeping quarters, therefore, the litter requires changing frequently. Nest boxes should be provided but many geese prefer to make their own nests on the litter.

Eggs should be collected daily as it tends to stimulate further laying. It is not economically sound to allow a goose to incubate her own eggs. She should be used to produce as many eggs as possible during

the relatively short laying season. Should a goose become broody she should be placed in a coop with a slatted floor and given plenty to eat and drink. The coop must be placed in the yard so that the goose is within sight and hearing of the other members of the breeding pen, otherwise she may not be received by them when she is liberated.

INCUBATING GOOSE EGGS

The eggs which are gathered every day should be stored in a cool place until required. A cellar with a cement floor which can be moistened with water makes an excellent storage room. The eggs should be placed on their sides on trays and turned each day. The fresher the eggs when put down for incubation the better will be the hatch. The best results are obtained when the eggs are not more than a week old.

The incubation period with the smaller breeds of geese is about 30 days and with the larger breeds about 32 to 34 days. The eggs may be hatched under hens, muscovy ducks, or with a limited degree of success in small incubators. Whichever method is used it must be noted that the eggs require more moisture than hen eggs during the incubation period.

Most goose raisers prefer to use hens and set four to six eggs under each hen depending upon her size and the size of the eggs. A saucer shaped hollow in the ground covered with a box makes a good nest. When the broody hen leaves the nest for food every evening the eggs should be turned by hand as they are too heavy for the broody hen. Every day after the 15th day the eggs should be sprinkled with luke-warm water when they are turned. Test the eggs on the ninth day and remove all infertile ones and those containing dead embryos.

In the early part of the season it is often impossible to secure broodies and artificial incubation is necessary. The small ordinary hot air incubater will hatch out strong, sound goslings provided the eggs are not over four or five days old. The temperature depends on the type of incubator. In the still air machines a temperature of 102° F. at the top of the eggs as they rest on the tray should be maintained for the first ten days, and after this period the temperature can be allowed to reach 103° F. Turn the eggs twice daily up to the "chipping" stage and the time taken in turning will cool the eggs sufficiently. Test eggs on the ninth day and remove all that are infertile or have dead embryos. Provide moisture in the trays throughout the period of incubation and sprinkle the eggs with lukewarm water every day after the 15 day.

BROODING AND REARING GOSLINGS

If a broody hen has been used she can be given, and will mother, six to eight goslings. The hen should be confined to a coop with a removable board floor for about ten days. The coop should have a slatted front and a small run should be attached to the front of the coop. If pos-

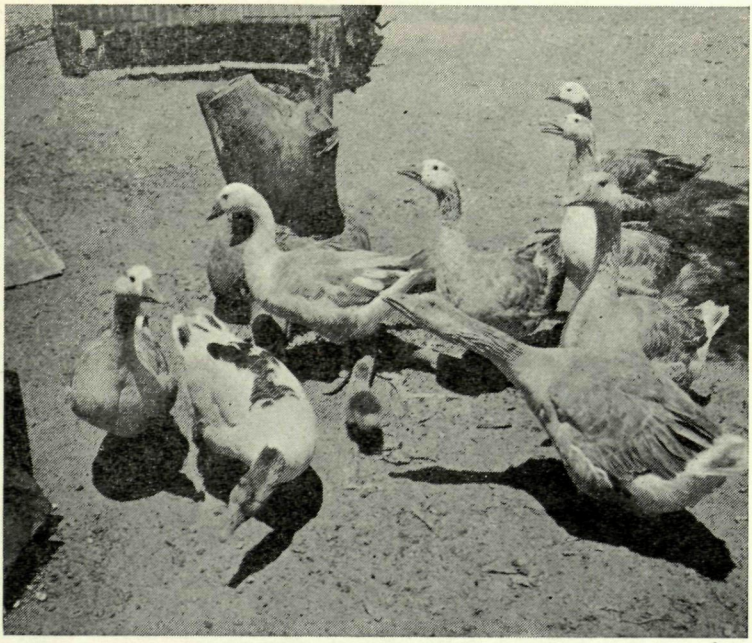


Fig. 4.—A group of Toulouse geese and ganders. Note the characteristic attitude of the gander in the right foreground as it prepares to protect its young. There are two ganders in this group. Individual mating of one gander to three geese is preferable, but flock mating can be quite successful (see text)

sible, the coop and run should be placed on short grass or other succulent pasture and should be moved to a fresh patch of grass each day. Until the goslings are three weeks old they should be kept out of water and not allowed to wander in long wet grass.

If incubated by artificial methods it is necessary to provide brooding equipment. The ordinary type of brooder will suffice, maintaining the same brooder conditions as used for ducklings. The goslings should have access to a grass run and if the weather is fine can run out when they are four days old. Early hatched goslings should be protected against cold winds and will require heat for two to three weeks. Goslings hatched in the summer can do without artificial heat.

Goslings older than four weeks will benefit by running on a well grassed range, but if confined to a small area it must be kept clean and the sleeping quarters must have plenty of dry litter.

Goslings are similar to ducklings in their shade requirements. If goslings are exposed to the hot sun in the summer time before they are feathered, many deaths will occur.

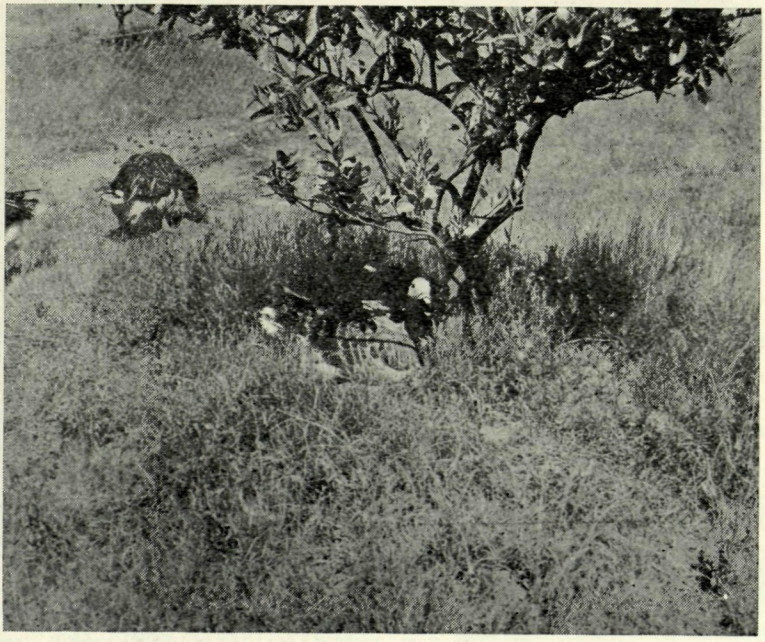


Fig. 5.—A sitting Toulouse goose under natural conditions

FEEDING

Feeding Goslings.

Goslings do not require feed until they are 36 hours old when they can be given a wet mash consisting of a chick starter mash and chaffed green feed mixed with skim milk or water. As young grass and other succulent green feed comprises the major portion of the feed for goslings it is difficult to obtain data concerning their protein requirements. Day-old goslings of the Embden and Toulouse breeds weigh approximately 3 to 3.5 oz. and at four weeks of age they will average 3.5 lb. This rapid gain in weight in so short a period must be catered for and it would appear that the dry ingredients of the mash should contain approximately 18 per cent. of protein. The 16 per cent. protein mashes for chicks one to six weeks of age given in Table 10 in Bulletin No. 995 "Nutritional Requirements of the Domestic Fowl," by R. H. Morris, Department of Agriculture, should give good growth providing the protein is increased by two per cent. The addition of 4 lb. of a 50 per cent. protein meatmeal to any of the mashes would increase the protein content to approximately 18 per cent. Number 3 mash in Table 10 would be:—Bran 36 lb. wheatmeal 22 lb., pollard 10 lb., gristed oats 10 lb., meatmeal 12 lb., dried buttermilk 4 lb., and bonemeal 1 lb. and would have a protein content of 17.78 per cent. Sufficient mash (a quantity which the goslings will consume in 15 minutes) should be fed five times a day.

In addition, they should be running out on good grass or on green crops especially planted for the purpose. If suitable pasture is not available, extra feeding of finely chopped lucerne, grass, lettuce or cabbage is advisable.

When green feed is short a Vitamin A containing oil should be included in the mash at the recommended level.

For information on the use of Vitamin A refer to the leaflet mentioned previously.

Plenty of fresh clean drinking water should be supplied in containers deep enough for the goslings to immerse their heads, but arranged in such a manner that they cannot get into the containers.

Feeding the Growing Stock.

After the goslings are four weeks of age and if they have plenty of grass they will not require any other feed until the green feed becomes short in the summer months. Low-lying, swampy land is ideal for the growing stock in the summer if permanent pasture can be maintained, or if green crops can be planted. Geese are good grazers and on irrigated areas should find sufficient feed for most of the year. When pasture is not available growing geese should receive plenty of roughage and one feed of mash or grain daily. The roughage should form the major portion of the feed and may be cut green feed, clover or lucerne hay, fruit and vegetables, such as rape, cabbage, lucerne, green maize, elephant grass, turnips, beetroot, apples, tomatoes, and cooked potatoes. If mash is given it should be a growing mash as fed to chickens. If grain is preferred to mash the grain must be a good quality, plump oat or a mixture of equal parts of oats, wheat and barley.

It has been estimated that, when it is necessary to feed mash or grain to growing stock, goslings from the age of six to 26 weeks will consume approximately 6 oz. of dry material per day. This amount should be considered the minimum requirement in addition to the roughage.

Reports of experiments carried out in England show that little advantage was gained by feeding concentrates to goslings throughout the growing period, provided they have free access to grazing. It was concluded that a satisfactory carcass could be produced without the use of concentrates from the age of five weeks until a month before marketing, that is, from five weeks to 26 weeks.

Feeding the Breeders.

During most of the year the breeders will secure their feed from pasture or from pasture plus supplementary feeding, but two months before the breeding season commences they will require feeding for egg production. A mash containing 15-15½ per cent. protein, as fed to laying hens, will give satisfactory results. Any of the mashes given in Table 13 of the Departmental leaflet No. 995 would be suitable and should be fed twice a day to the breeders in addition to the food they will find in grazing. Allow 6 oz. of dry material per bird per day. Mix the mash with an equal volume of chaffed green feed and moisten the whole mixture with water until it is in a crumbly condition.

Fattening Geese.

Under normal conditions young geese nearing market stage, that is, six to seven months of age, will be in good condition. If they have been on good pasture, or on pastures and supplementary feed they are

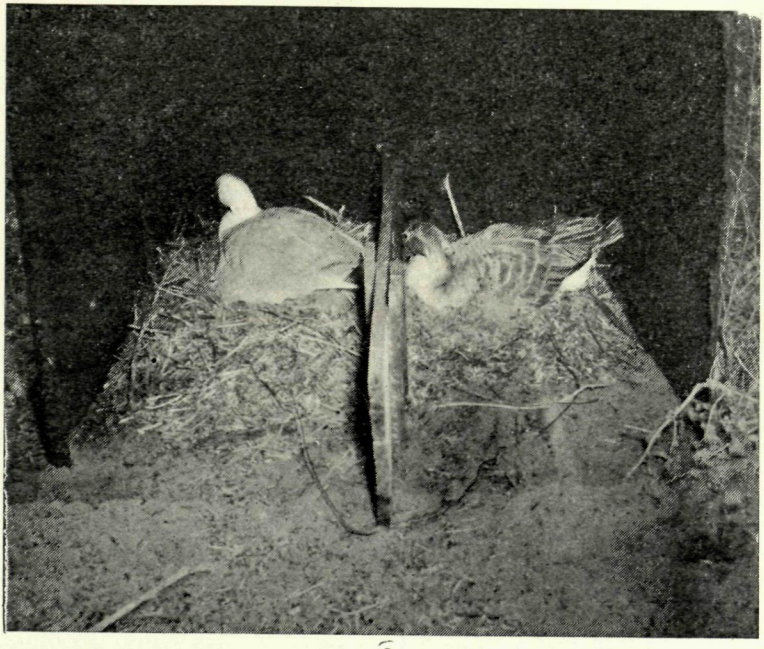


Fig. 6.—Two Toulouse geese sitting on eggs. This is a wasteful practice as the laying season for geese is somewhat short and the birds should be used to produce as many eggs as possible during the period

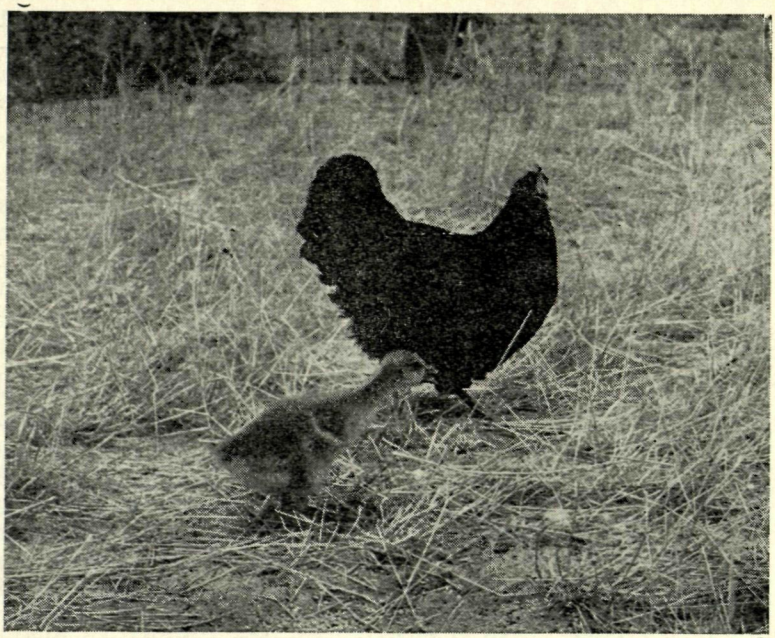


Fig. 7.—Hens may be used successfully in the hatching of goslings. Usually five goose eggs are allowed to each hen

inclined to become fat. The final fattening should commence three weeks before the birds are marketed. Experiments carried out in Hungary show that the gain in weight declines after the third week and by the end of the fourth week the birds commence to lose weight.

Partly darkened fattening pens in which the geese have little room for exercise are recommended.

Three feeds of mash per day and one of green feed or chopped up vegetables should be provided. Thirty minutes after each feeding the remainder of the food should be removed. The ingredients in the mash should be mainly gristed grains and a mash containing 12½ per cent. of protein and similar to the mash used to fatten cockerels—in Bulletin No. 995—is recommended.

A suitable mash would be as follows—Gristed wheat 60 lb., gristed oats 20 lb., bran 10 lb., pollard 10 lb., and meatmeal 4 lb., moistened with water to a crumbly condition. Plenty of clean drinking water should be provided. Force feeding or noodling of geese is practised in some countries where a superior fattened goose or enormous enlargement of the liver is required. Noodles are made from gristed grains and are shaped like a large pellet about 2½ to 3 inches long. The noodles are placed one at a time in the goose's mouth and forced down the throat by pressure on the outside of the goose's neck. At the commencement of the fattening period 3 to 5 noodles are fed three times a day increasing up to 7 noodles fed five times daily. In Hungary, forced feeding experiments were carried out for a period of 28 days. In that period each bird consumed an average of 1.26 lb. of feed per day and gained 6.17 lb. in weight during the period.

MARKETING GEESE

Early-hatched goslings can be fed to grow quickly and marketed when they are ten weeks old. The term usually applied to that class of table bird is "green geese." Most farm-raised goslings of the Embden and Toulouse breeds given proper care and feeding should weigh about 9 lb. at 10 weeks of age.

The majority of geese are marketed when they are about 7½ months of age, that is, they are allowed to graze until they are 26 weeks old and then fattened for about three weeks. The rate of growth is very rapid for the first eights weeks, but after that the gain in weight is slower, but a finished goose of the two breeds mentioned should weigh about 16 to 18 lb. when ready to market. During the fattening period and when crating for market, geese should be handled as carefully as possible to prevent the skin from being torn, or the flesh bruised, as these defects will reduce their value.

DISEASES OF GEESE

Losses from mortality among geese are usually not so great relatively as among fowls and turkeys, probably because geese are raised in smaller units and forage widely so much of the time. The best way to prevent losses from all diseases affecting geese is to keep the breeding quarters clean

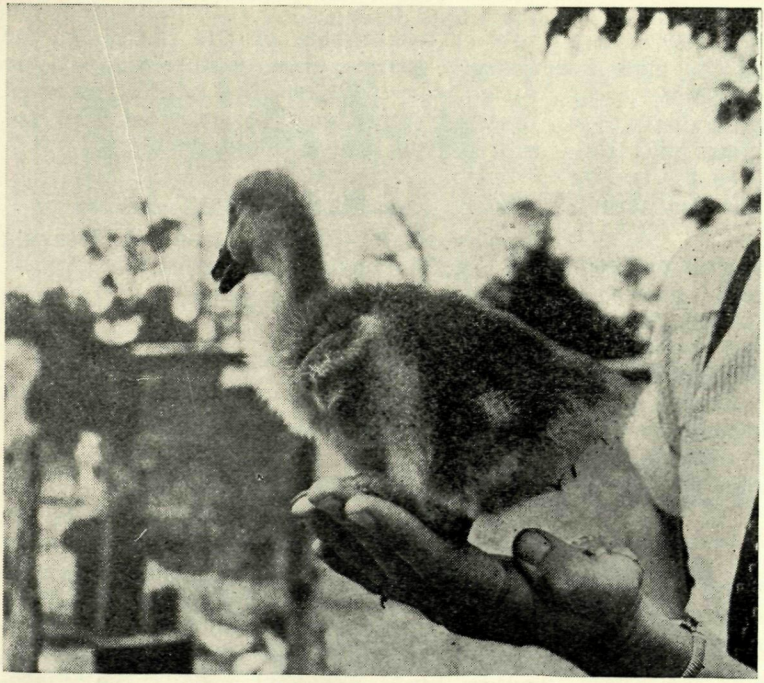


Fig. 8.—A one-week-old Toulouse gosling

and dry and move the brooding coop on to clean ground daily. Provide clean water and keep the feeding and watering utensils clean.

The diseases which may atack geese are:—

Coccidiosis.

Geese can be affected with renal coccidiosis caused by *Eimeria truncata*. This parasite attacks geese of from three weeks to three months of age. This disease is very acute, lasting only two or three days and is almost always fatal. Usually the mortality in a flock is very high. The clinical signs are extreme weakness and emaciation. So far as is known, the parasite is specific to geese. Cases have occurred in Europe and in the United States of America.

Botulism.

This disease has been reported in Australia, United States, Mexico, Holland and Canda. It is a type of food-poisoning which results from ingestion of spoiled foods in which the bacterium *Clostridium botulinum*, has been growing and producing toxins.

This organism and its toxins have been isolated from the livers of affected birds, mud, decaying vegetation and carcasses, various fly larvae, dead fish, dead grasshoppers, and grain lying in water. The incidence of the disease is closely correlated with with shallow stagnant water and mud flats.

Symptoms may appear within a few hours to a day or two after the spoiled food is eaten. The most common symptom is paralysis of the leg and wing. If the

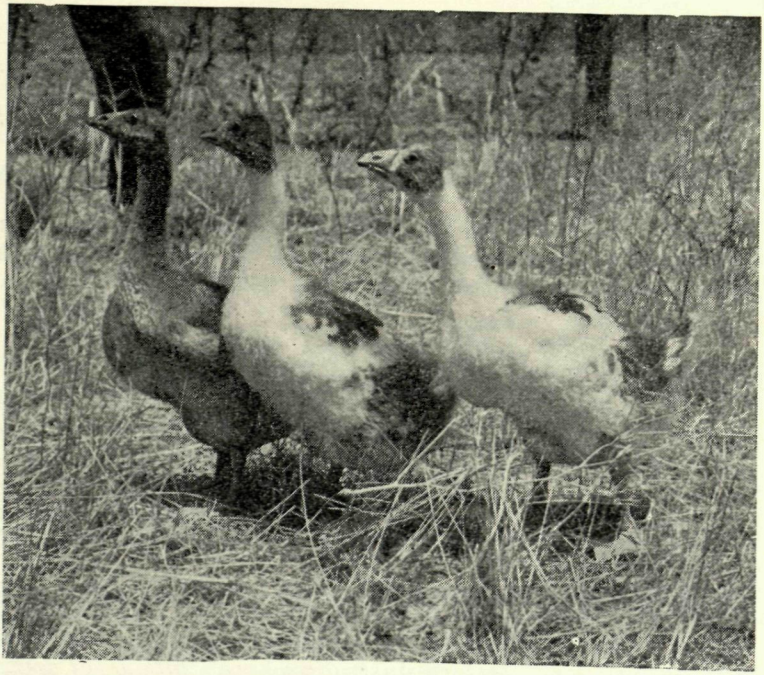


Fig. 9.—Three five-week-old Toulouse goslings. They are usually marketed when seven and a half months old

neck muscles are affected the head hangs limp. The eyes are dull and partly closed, the feathers are ruffled and the bird refuses to eat. Fatally affected birds appear lifeless for several hours before death, but in mild cases the leg weakness may disappear and the birds recover in two or three days. Looseness of the feathers is often seen in botulism.

Prevention of botulism depends on feeding a wholesome ration, and preventing the birds having access to decomposed meat and vegetables. Laxatives such as castor oil or epsom salts are of value in the treatment of mildly affected cases. Birds should be dosed individually with half an ounce of castor oil, and if necessary the treatment repeated until the digestive tract is empty.

Paratyphoid of Geese.

Outbreaks of this disease have occurred in Europe and America; extensive losses amongst young geese were reported in East Prussia in 1922. The birds show weakness, loss of appetite, increased desire for water, sleepiness and conjunctivitis. In outbreaks of the acute type, the mortality may reach 95 per cent. by the second to the fourth day following the onset. The disease is caused by a Paratyphoid B type organism. Eggs may be infected internally as a result of localisation of the bacilli in the ovary. At the present time there is no satisfactory means by which infected breeding birds can be detected and removed from the infected flock.

REFERENCES

Appleyard, R.—"Geese, Breeding, Rearing and General Management."

Biester, H. E., and Devries, L.—"Diseases of Poultry," 1945.

Heuser, G. F.—"Feeding Poultry," 1946.

Jull, M. A.—"Raising Turkeys, Ducks, Geese, Game Birds, 1947."

ACKNOWLEDGMENTS

Grateful acknowledgment is made to Mr. C. Balmer (Government Photographer) who is responsible for all the photographs which appear in this article, and to Messrs. H. Stoddart, Palmyra; C. Shepperd, Maddington, and H. P. Chalmer, Melville, whose birds are shown in these photographs.

(Reprinted from "Journal of Department of Agriculture of Western Australia," Vol. XXVII. (Second Series), No. 3, September, 1950.)

Book Review.

"FARM ANIMALS IN HEALTH AND DISEASE"—(W. R. Wooldridge)

FOR the student, and for the farmer who is interested in widening the scope of his knowledge of the various diseases of farm animals, this book should prove interesting and useful for reference purposes.

Unfortunately, from the Australian viewpoint, much of the book deals with diseases not present in this country, and with disease control measures and other matters not relevant to Australian conditions.

Veterinary services are readily obtainable and widely availed of in Great Britain, and this may be the reason treatments of individual diseases are not discussed in more detail. More specific information in regard to treatment of disease is essential in a State such as Western Australia where skilled veterinary attention is not always available, and the farmer has no option but to treat sick animals as best he can.

Sections dealing with good health, ill health, the mechanism of digestion in the various animals, and the cost of ill health to the country, are both interesting and instructional, and serve to emphasise the present trend of veterinary science in regard to prevention of disease rather than treatment of individual animals.

The section dealing with diseases in rabbits, is, of course, superfluous in this country.—J.S.