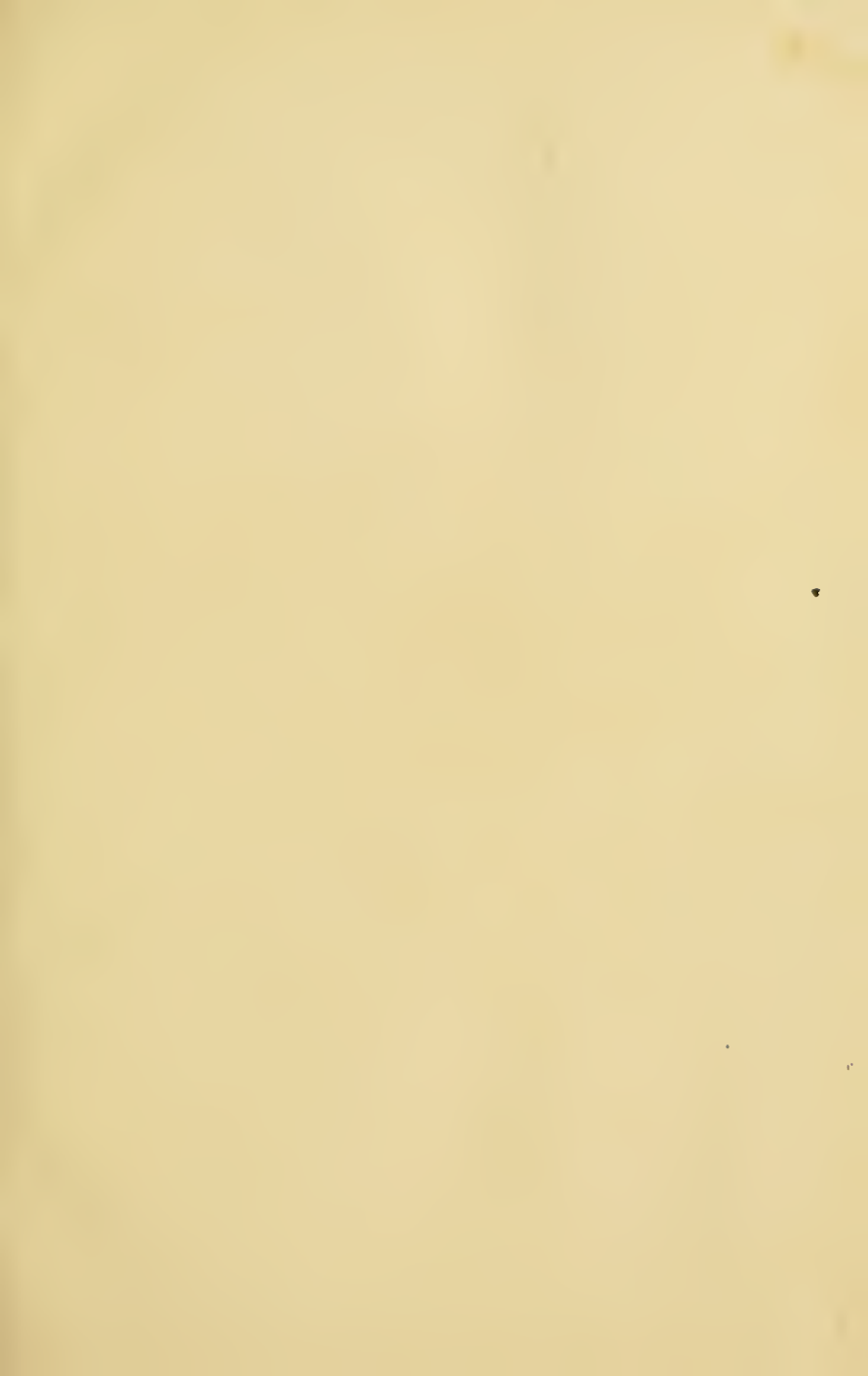




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PETS FOR PLEASURE AND PROFIT

YOUNG HAWKS.





PETS

FOR
PLEASURE AND PROFIT



BY
A. Hyatt
A. HYATT VERRILL



CHARLES SCRIBNER'S SONS
NEW YORK · 1915



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INTRODUCTION

WHETHER civilized or savage, city-bred or living in the country, boys of every age and nation are fond of pets. The boy without a tame bird or animal of some sort is to be pitied, for in the companionship of a dumb creature lies a wonderful amount of pleasure, while affection, humanity, and love are fostered and developed to a great extent by caring for pets.

A domesticated bird or animal, properly fed and cared for, is beyond a doubt far better off and far happier than its wild cousins, but if improperly treated and fed its lot is far from enviable. A great many pets no doubt suffer from disease, mistreatment, and improper food, but in nearly every case this is due to lack of knowledge or mistaken kindness rather than to intentional cruelty on the part of the owner.

Of course many boys, and grown-ups as well, are brutal or cruel by nature and seem to take supreme pleasure in teasing or maltreating the unfortunate birds and animals that come under their power. Such people would no doubt be just as cruel to children or to their fellow men and the fact that they are naturally unfitted to control any living thing is no reason for discouraging others from keeping pets.

Unfortunately, there is a great dearth of books or pamphlets treating of the care and rearing of pet birds and animals, and this book has been prepared with the purpose of filling this long-felt want.

Numerous handbooks have been written dealing with some one group or class of animals or birds, such as dogs, cats, pigeons, canaries, etc., but no general work containing full directions and rules for rearing, feeding, and caring for every kind of pet has hitherto been published.

To many boys the unusual appeals most strongly, and for this reason the author has devoted a great deal of space to describing various beasts and birds that are seldom seen in confinement, but which are particularly adapted to life in captivity and make excellent pets.

Some of these animals are regularly domesticated in their native lands but are never seen in our own country, save in menageries and zoological gardens; and yet their docility, intelligence, handsome colors, and interesting habits particularly fit them for household pets.

Others are of value mainly for large estates or for profit, and for this reason have been included, for it is a hard matter to draw the line between true pets and animals or birds reared for profit. Out of every flock or herd some individual will develop unusual traits and intelligence and, whether chicken, goose, calf, or colt, a pet will be made of it.

As a knowledge of natural surroundings, food, and habits are essential to the proper care and feeding of any foreign bird or animal, the author has given as much information on these matters as possible and the reader who is interested in natural history will find not a little valuable instruction in the descriptions of the wild birds and animals.

During many years' experience as a naturalist and natural-history collector the author has had ample opportunity to study the dispositions and habits of animals, birds, and reptiles, and it is his firm conviction that there are very

few wild creatures which cannot be tamed and domesticated by kindness, and proper care and feeding.

Some of our native animals and birds make splendid pets and yet are seldom seen in captivity, while foreign species of the same families are commonly domesticated. White mice and white rats, cats, dogs, squirrels, and rabbits are all favorites and yet the dainty deer-mice, wood-rats, flying squirrels, prairie-dogs, woodchucks, coons, coyotes, foxes, and the odd raccoon-fox of the southwestern States are far more interesting and become just as tame and affectionate in captivity. We are all accustomed to parrots, mina birds, and pigeons as pets, but bluejays, crows, nut-crackers, and other native birds are far easier to raise and are more interesting.

Many of our native American wild fowl and ducks are particularly well fitted for domestication, and breed and increase readily in captivity, and with the increasing scarcity of our wild birds and animals it is of great importance to rear them in confinement, for only in this way can many species be prevented from disappearing completely from our land. Descriptions of all these native species suitable for rearing in a state of domestication are included in the work, with directions for their care and feeding.

A great many of our native birds and animals can be purchased tame, from dealers in ornamental and fancy stock, but boys living in the country or outlying districts can usually obtain their stock by trapping or by rearing the young.

The illustrations have been prepared with the object of showing the various birds and animals treated in the text, and, in the case of such domestic animals as rabbits, guinea-pigs, etc., the characteristics of the more noteworthy "fancy"

varieties. The plans for cages, hutches, runs, and other enclosures have been drawn especially for this book and embody the very latest and most improved designs for their various purposes. Wherever possible, several different designs have been provided, in order that the reader may select the one best suited to his needs and surroundings.

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PETS FOR PLEASURE AND PROFIT

PETS FOR PLEASURE AND PROFIT

PART I—MAMMALS

CHAPTER I

GENERAL REMARKS AND SUGGESTIONS

HINTS ON KEEPING PETS

FEW boys are really happy without a pet. Even if it is only a mongrel puppy, a lowly mud-turtle, or a scraggly fowl, the youthful owner thinks it the most intelligent, beautiful, and affectionate creature in the world and loves it with his whole heart and soul.

To keep and care for living things is most interesting and instructive and, if properly done, will often prove a source of profit as well as of pleasure. All too frequently, however, pets are neglected and suffer greatly through ignorance of their wants or through lack of proper preparation for their needs. Many pets are acquired accidentally; a wounded bird, a helpless nestling, or a stray cat or dog is found and carried home; no provision has been made for the unexpected addition to the household and the pet is placed in some extemporized cage or box and fed on

anything and everything it will devour. Through overfeeding, improper shelter, too much handling, or from lack of its natural food, the poor creature dies; and yet no knowledge of its wants or its proper care has been gained by the unfortunate experience.

Before keeping any variety of pet you should study the requirements and peculiarities of the various kinds; for only with a knowledge of what is needed and what you can furnish can you judge intelligently of the best pet to adopt.

It is a mistake to try to keep too many different kinds of birds or animals, for if the variety is great it will require the utmost care and constant attention to look after their various kinds of food, their numerous peculiarities, and individual wants; and in the end you will become tired of all pets or will gradually eliminate certain kinds and confine yourself to one variety—which you might better have done in the first place.

The kind of pets you decide to keep should depend very largely upon your location, your surroundings, your tastes, and the purpose for which you intend to keep them. If you live in a city and have only a small plot of ground or a stable, you should not attempt to raise wild things. Animals and birds that have been bred for centuries in confinement, such as rabbits, cavies, dogs, cage-birds, etc., should be selected.

If, on the other hand, you live in the country and have plenty of room at your disposal, you can raise almost any kind of pet; and many birds and animals

may be bred with profit, and their progeny sold at good prices for the market or for their furs or pelts.

While such birds and animals are not strictly pets, yet certain individuals of your stock will show unusual traits of affection and intelligence, and these may be kept as real pets.

Poultry of the common varieties can hardly be considered for pets, for although certain classes of fowls which are kept for purely ornamental purposes will prove very interesting and valuable pets, and their beauty alone will make them wonderfully attractive, a hen, a rooster, or a duck is, as a rule, stupid and uninteresting. Poultry raising, under proper conditions very profitable, is, however, a profession in itself and cannot be properly included in a work devoted to pets.

If you live in a dry country and no natural water is at hand you should not attempt to rear ducks, geese, or other water-fowl, for while certain kinds of water-birds *will* live and breed without water, yet, as a rule, they do far better if amply provided with their natural element. On the other hand, if you live in a wet, damp, marshy, or rainy district you should not try to raise birds or animals that require dry air and plenty of sunshine, such as prairie-dogs, pheasants, rabbits, or antelope.

CHOICE OF PETS

The kind of pets to keep to best advantage also depends a great deal upon the local markets and the facilities you may have for procuring food for your

charges. If you live in a district where truck-gardening is carried on you may raise almost any sort of bird and most animals of an herbivorous nature; but if in a grain or hay district where fresh, green vegetables are hard to procure, or are expensive, you should not try to raise birds or animals for profit that require vegetables for food. In many sections of the country fur-bearing, carnivorous animals, such as foxes, skunks, mink, otter, wolves, and lynx may be bred and reared in captivity with very profitable results; but if you are far from meat supplies, or in a country where small animals and insects are scarce, you should not attempt to raise them.

For pets that may be fondled and handled a great deal, animals are preferable to birds; few species of birds will survive petting or handling, and usually they have strong objections to being touched. Crows, jays, hawks, certain parrots and paroquets, doves, gulls, and Java Sparrows will, however, bear a great deal of handling and exhibit a great amount of affection for their owners; and, as a rule, such birds are very intelligent and are easily taught many tricks.

Even among animals there is a great difference in regard to the amount of petting to which they will submit. Dogs, cats, guinea-pigs, white rats, prairie-dogs, deer, antelope, and many other creatures may be handled and fondled as much as you wish without apparent injury; but rabbits, although frequently used as real pets, do not thrive well if handled a great deal; and carnivorous creatures, such as foxes, coyotes, rac-

coons, and similar animals, are likely to snap or bite if subjected to much fondling.

Fish, turtles, lizards, and even snakes of the harmless varieties make splendid pets and often show great intelligence and affection. Snakes have little intelligence, as a rule, but certain species make very interesting pets, and if you once overcome your natural repugnance to them you will find a great deal of pleasure in keeping them.

A great many people raise pets merely for exhibition and prize-winning purposes; and, while this is not profitable unless you actually *win* prizes, it is very interesting and instructive. But to raise prize stock requires unremitting care and attention to details, and it is, moreover, rather an expensive pastime. If you *do* decide to raise exhibition pets you should select some variety of a recognized class and, if possible, a class not common in your vicinity. The fewer local entries there are the more chance you will have of winning prizes; and, as prize-winning stock will always sell at good prices, you will be able to make running expenses or, perhaps, considerable profit.

If prize stock is to be raised you should never attempt to keep more than one variety of a certain kind of bird or animal. If you try to raise two breeds of canaries, or two breeds of rabbits, you will find it very difficult to give each the proper attention; and if by chance your two breeds become mixed, all your trouble will go for nothing and you will have to start over again.

As a rule, I do not advise boys to raise exhibition pets, for just as much fun and knowledge can be gained by raising common and mongrel things as by rearing prize stock, with half the trouble and expense. Usually, a very few birds or animals will be all the ordinary boy can properly care for; and, as most domestic birds and animals are fairly prolific, he will have more difficulty in keeping their numbers within reasonable limits than in increasing them.

Many wild birds and animals are easily raised in captivity, and while it is not advisable to keep native song-birds, many shore and water-birds, game-birds, and most wild animals are just as happy and contented and are far better off in captivity than in their natural haunts.

The common idea that a captive bird or animal is unhappy and suffers by captivity is generally erroneous; and while many wild creatures, if captured fully grown, will struggle and pine away, they are perfectly happy and content if taken when young and refuse to resume their wild habits even when given perfect freedom.

The author, while living in Central America, had many odd and unusual wild animals and birds as pets, and after these were reared to full growth in captivity they were given perfect liberty to go and come as they pleased. The forests and jungles were close at hand and while the tame deer and peccaries, the kinkajous and the monkeys wandered off to the woods in the day, they invariably returned at night or at feeding time. Quite frequently a tame deer would be seen among its

wild companions, but at sight of its master it would leave the wild deer and prefer the companionship of man to that of its own kind.

Wild geese, wild ducks, gulls, herons, cranes, game-birds, crows, jays, and even many species of song-birds, if reared from the young nestlings, will become so accustomed to human beings and to their surroundings that wild life will no longer attract them. Where wild ducks, geese, gulls, or game-birds are kept tame they will often attract wild birds of their own species, and frequently these wild companions will voluntarily remain with their domesticated friends in preference to continuing their wild life.

Small birds or animals, when wounded or injured, will seldom recover fully and, as a rule, it is more merciful to kill them at once than to try to nurse them back to health. But large animals and birds, when injured or wounded, will often, if cared for, recover entirely and will prove their gratitude for the care bestowed upon them by remaining with their human friends.

A bird with a broken or injured wing or leg will generally recover perfectly in a short time, and even during convalescence seems to suffer very little inconvenience or pain, so that whenever you have an opportunity to secure a wing-tipped duck, goose, gull, crane, ibis, or any other large bird, you may feel confident that you may nurse it back to health and thus obtain an interesting and affectionate pet.

Carnivorous birds, such as hawks and owls, and wild carnivorous animals are very unsatisfactory things to

raise, for they are generally savage, ill-tempered creatures, treacherous by nature, and with little or no affection in their make-up.

As any pet requires a great deal of attention and quite a little expense, much better results may often be obtained when several boys combine to keep their pets together. If one boy has the grounds and facilities for keeping and housing his stock, another boy less fortunate in this respect may have more time to attend to them, while still another may be in a position to aid financially or to furnish and raise the food supplies. This co-operative system will prove very practicable, and each boy may have his individual pets, even if the stock is owned in common.

Before securing your pets you should have everything ready for their reception and plenty of food on hand. If cages are used they should be cleaned and prepared and should be of ample size. If outbuildings and yards are required they should be in perfect order, clean, and ready for their occupants beforehand.

Most native birds and animals can be safely housed out-of-doors, for they will know enough to look out for themselves, but a shelter of some sort should always be provided.

Foreign birds and animals must have quarters which approach as nearly as possible their normal conditions. Thus northern birds and animals should be provided with shelters that afford cool spots away from the sunshine and should be given plenty of shade, while southern and tropical species must be given warm and cosy

quarters during cold weather. An old greenhouse or a conservatory will often afford splendid quarters for tropical species, but many southern birds and animals will withstand our northern winters if merely furnished a tight, wind-proof building or room. Flamingoes, egrets, cranes, pelicans, and other southern water-fowl will stand ordinary winter weather if provided with a tight shed or building for shelter, but parrots, toucans, monkeys, marmosets, and other tropical birds and animals must be kept at a uniform warm temperature and free from draughts of cold air. Most of these southern creatures have no idea of caring for themselves, and will not know enough to keep warm if not confined in warm quarters.

Just as many native birds and animals are inhabitants of particular kinds of country, so tropical species thrive only when their artificial surroundings resemble those in which they normally live. You would not expect beavers to thrive in a dry, sandy enclosure, nor prairie-dogs to succeed in a swamp, and yet many amateur and professional fanciers will put all tropical birds and animals in a room heated to a certain temperature and with very dry air. In reality, most tropical species require a moist, muggy warmth in order to do well, but such species as armadillos, antelope, tinamous, horned toads, and other species should be kept in a dry, warm air.

In fact, to succeed in rearing or keeping pets of any sort you must study and remember the habits and peculiarities of each species and must be familiar with

the country and climate from which they come. For this reason pet raising—especially if your pets are from foreign countries—will teach you a great deal about nature and natural history and will also add a great deal to your knowledge of geography and the climates and products of distant lands.

CHAPTER II

RABBITS AND HARES

CARE AND HOUSING

EXCEPTING dogs and cats, rabbits are the commonest and most popular of animal pets. They are always great favorites with children, for they are thoroughly domesticated, gentle, easily cared for, and not subject to fleas, lice, or other vermin.

While rabbits are kept as pets in countless numbers, yet few are really properly cared for or fed, and they are often subject to disease. All the tame rabbits we know are descended from the common, wild rabbits of Europe; and although the various breeds or varieties are called by fancy names, such as "English," "Japanese," "Himalayan," etc., these names usually have no connection with their native home.

Most of the pet rabbits are of the English, short-haired variety, and the majority are of mixed or mongrel breeds. While such animals are just as suitable for home pets or for the market as the pure-bred fancy strains, the latter are far handsomer and more attractive than the mongrels, and if the rabbit fancier intends to sell stock, he should aim to keep his rabbits pure and "up to the standard." Pure-bred fancy rab-

bits will bring good prices, but ordinary, mongrel English rabbits bring but a few cents each.

There are several ways of keeping rabbits, the method to be followed depending largely upon the number of individuals to be kept and the purpose for which they are raised. Where there is plenty of space and a number of animals are to be raised, out-of-door runs or "courts" may be used, whereas small hutches or cages are preferable where there are only a few rabbits, or where fancy breeds are raised.

The out-of-door run or court may be paved or floored, or it may have a floor of earth or grass. It should be enclosed by a wire-netting fence with $1\frac{1}{2}$ -inch mesh and at least 3 feet high above ground. The netting should be fastened to stout posts set into the ground to a depth of about 18 inches, and the netting for a space of 6 or 8 inches at the top and 18 inches at the bottom of the posts should be left free so that it may be bent or turned inward. The lower edge of 18 inches should be turned in and covered with at least 12 inches of earth to prevent the rabbits from digging under, and the upper edge of 6 inches should be bent in to prevent the creatures from climbing out. To secure the upper edge in position, cleats or brackets should be fastened to the posts. The enclosure should be provided with sleeping hutches or boxes and these may be any sort of stout, clean, wooden boxes with water-proof paper, linoleum, zinc, tin, or other material fastened over them to keep out the rain. The boxes should have sliding doors so that the rabbits may be

confined when desired, and small ventilation holes should be made near the tops. In addition, you should have a few regular breeding hutches for the does.

When keeping rabbits in individual hutches, the hutches should be made of good, clean boards, and they should be large and roomy enough to afford space for the inmates to exercise. By having a number of hutches and placing them in tiers or rows, a large number of rabbits may be kept in a very small space.

A very convenient form of indoor hutch is 6 feet by 2 feet by 2 feet, with a movable partition dividing off about one third of the space at one end for a nest and sleeping chamber. The partition should have a smooth hole for the inmates to pass back and forth from one part of the hutch to the other. The front of the hutch should have two doors, one of wire netting, the other of wood, the latter leading to the sleeping quarters; and this should be arranged to close very tightly. The dividing partition may be arranged to slide in and out in a groove between the doors, or it may be slipped in position through one of the doors, but it should always be removable in order that the hutch may be thoroughly cleansed. The floor should also be removable, or there should be a well-fitting tray placed over it. By using a sliding false floor above the real floor, the hutch may be easily cleaned. If outdoor hutches are desired they should have sloping roofs and eaves overhanging the ends and sides to keep out the rain, and the netting door should have a sliding wooden cover, or a curtain of cloth which may be

drawn over the netting in bad weather. In any case, ventilating holes at the top of the hutch should be provided, for it is just as necessary to ventilate your rabbit's room as your own.

It is an excellent plan to use movable hutches which may be set out-of-doors in good weather and taken indoors in bad weather. By nailing cleats or handles to the ends of the hutches, they may be easily carried from place to place. If the hutches are furnished with a wire-netting floor and a sliding wooden floor is arranged over this, the latter may be removed when the hutch is out-of-doors, and the rabbits can nibble at the grass that projects up through the netting. Another method is to use very simple netting-floored hutches out-of-doors, and the regular wooden-floored hutches for indoors. Where there are a number of hutches to be kept in tiers out-of-doors, the top hutch is the only one which will require a sloping water-proof roof.

It is very important to keep the hutches clean and free from dampness, filth, and litter. Unclean hutches are disagreeable and slovenly and cause many rabbit diseases, and in addition the creatures become dirty, discolored, and odorous and are soon unfit for pets. Naturally, rabbits are very cleanly and neat animals, and it is both cruel and injurious to compel them to dwell in dirty quarters. Clean the cages daily and scrub off the floor boards with soap and water, and always remove all stale, decayed, or wilted food from the hutch. For bedding, hay, fine straw, or clean, dead leaves will answer; and for short-haired species,

clean sawdust may be used on the floors of the hutches. Hutches for long-haired species should never be sprinkled with sawdust, for this material becomes matted in the fur and ruins the coats of the animals; for such varieties use clean, soft hay. Hay of the proper kind may be readily made from the lawn clippings after mowing with a lawn-mower, but it should be thoroughly dry, sweet, and clean. The rabbits will nibble at the hay, but if sufficient food is furnished in the form of fresh vegetables, and if a layer of good oat straw is spread in the hutch, there will always be a soft, clean covering for the floor.

FEEDING

No animal thrives as well on such a diversity of vegetables as the rabbit, but nine times out of ten pet rabbits suffer from overfeeding. If kept in an open run or court the animals will have so much room for exercise that there is little danger of overfeeding, and as their appetites vary greatly, the only rule is to note the amount of food left over and reduce the amount given accordingly. In open runs, growing grass, a few shrubs or trees, and some quick-growing green foliage, such as crimson clover, vetch, or alfalfa, will provide green food for the rabbits to nibble when they are hungry. Rabbits should be fed twice a day, ordinary stock being fed morning and evening, and does with suckling young being given a noon meal in addition. The particular kind of food used depends more or less

on the season, the market, and the price of available vegetables. While a few staple foods are sufficient for rabbits, yet these animals are very adaptable to sudden changes of diet, and you can safely feed the particular vegetable which is cheapest and easiest to obtain.

Even in winter rabbits require some green food. Cabbages, kale, spinach, turnips, beets, and mangels are all good and, while cabbages are used more extensively than any of the other green foods and are usually cheap, they are not particularly desirable, as they give the animals an unpleasant odor, and mangels or beets are far better; parsnips are also excellent. Hay should always be kept in the hutches or runs, and an occasional warm mash of cooked potatoes or clover leaves mixed with bran should be given. Whole crushed oats, bran, and other grains are also good in limited quantities. In cold weather a warm mash each evening is to be recommended, and now and then a little sulphur or some common flour mixed with the food will keep the animals from suffering from looseness of the bowels. Rabbits require little drinking water when green food is abundant, but in warm weather or when dry food is fed there should always be pans of fresh, clean water within reach of the animals. Moreover, does with young should be given milk diluted with one third warm water at least once a day, and in all cases a piece of rock-salt should be kept in the court or in each hut.

Winter feeding should consist of green food or vegetables in the morning and grain or whole oats in the

evening, the animals under three months old being given crushed oats with bran. In summer green food is the chief reliance, and all garden vegetables, clover, dandelion, plantain, dock, and other weeds, as well as green grass, should be given. Wet food should *always* be avoided; pluck or cut the clover or weeds in the afternoon when dry, and keep it under cover until feeding time if it looks like a shower or there is danger of dew reaching it. Young rabbits under three or four months of age should be fed rather sparingly with green food, for if given too much they will soon become pot-bellied, and if this symptom is noticed the use of green food should be immediately discontinued and the animals placed in an open run or enclosure, where they will have abundant exercise. Under these conditions, they will probably soon recover, but if not attended to, and green food is given, they will die in convulsions. Old rabbits are not, however, subject to this disease.

BREEDING

Rabbits breed when very young, but for healthy, strong animals the does and bucks should be kept apart until at least six months old, and even ten months is considered advisable by many breeders. The old does may be mated in February, but young does are usually mated in March. The young will then be born in April when there is plenty of green food, and the mother will have an abundance of milk for them.

If the first litter arrives in April the doe should have about four litters a year, at intervals of about twelve weeks, with a longer rest in midwinter.

The hutch for the breeding doe should be thoroughly cleaned and disinfected, and a good supply of soft hay and oat straw should be given the doe, so that she can build her own nest. Either an ordinary hutch with a nesting compartment may be used for breeding, or a special hutch may be furnished. Such a hutch should be about 2 feet long, 1 foot wide, and 10 to 12 inches deep, and it does not require a top or lid if indoors, but it should be placed in a corner where the mother will not be disturbed or troubled. Loose boards may be placed over the top and holes made for ventilation. In an outdoor run a breeding hutch may be made by cutting a hole large enough for the doe in a box about 18 inches square and 10 inches deep, and turning the box upside down. The doe will arrange her own nest in this a few days before the young are born, and when she commences to build the nest extra attention should be given to her food. Milk and warm water should be given regularly, and a pan of clean water should always be in the hutch. At this time and for several days after the young arrive great care should be taken not to frighten or startle the doe. Strange cats, dogs, or people should not be allowed near, and if you are obliged to touch or handle the hutch or nest, do so very slowly and carefully, and avoid any quick or sudden movement or noise.

For the first week or two after having young the doe

should be fed almost entirely on warm bread and milk for the morning and evening meals, and with a little green food and fresh vegetables for a midday meal. The amount of green food may be gradually increased, and the milk and bread reduced, and a little boiled corn-meal mush should be given every day or two. The milk, mush, and all other soft foods should invariably be placed in a separate dish of earthenware, and as soon as the food is eaten the dish should be removed and washed and scalded thoroughly.

The young will begin to leave the nest in three or four weeks, and the box should then be thoroughly cleaned and disinfected and filled with fresh straw and hay. The young may be weaned when a month old, but it is better to let them remain with their mother for two or three weeks longer. Remove two young each day until they are all transferred to another hutch, which should be large enough to hold all the young rabbits you raise. They will get along well together until three or four months old, when the does and bucks should be separated. A number of does will get along together in one hutch or run, but usually the bucks will fight unless kept singly.

When breeding rabbits or hares it is a great advantage to have several litters of young at the same time, for oftentimes one mother may have ten or twelve young, which are more than she can care for, whereas another doe may not have over four or five. In such cases, the surplus from one mother may be transferred to a doe with few young, and in this way all may be

saved. Otherwise, all young in excess of six or seven should be destroyed soon after birth.

DISEASES

If properly cared for, rabbits are very free from diseases, the most common ailments resulting directly from lack of care, improper ventilation, poor, insufficient, or too much food, and unclean hutches. Such diseases as *mange*, *scurf*, *surfeit*, and *eye disease*, or *ophthalmia* are due to foul quarters. *Cold snuffles* and similar troubles arise through improper ventilation and sudden draughts of cold air when rabbits are kept in warm buildings. Many stomach and bowel troubles come from feeding too much juicy green foods to young rabbits, or from changing their diet too suddenly, as well as from feeding wet food. For *pot-belly*, *constipation*, and other digestive troubles, plenty of exercise is the best remedy, but severe constipation may be remedied by mush and other soft foods and a little castor-oil. For *diarrhœa*, a little dry barley meal or powdered acorns in skimmed milk are effective remedies.

Ear canker, an incrustation of the ear, and *ear-wax* may be cured by washing off the crusts with lukewarm water and a soft sponge and applying powdered boracic acid. This should be repeated daily until cured completely.

The most serious disease known to rabbits, especially in America, is *coccidiosis*, caused by an internal parasite,

and this trouble kills a great many young rabbits. The greatest care should be taken to prevent the introduction of this parasite, and new animals should always be kept separated from your old stock until it is certain they are not affected. Where hutches are kept in tiers, the disease is very apt to spread if once introduced, although absolute cleanliness will do much to prevent it.

Whenever a number of young rabbits which are well cared for become pot-bellied and show symptoms of cold and snuffles, you may suspect that old rabbits which are apparently healthy are suffering from chronic coccidiosis, and are expelling coccidia (parasites) from their bodies. The first steps to be taken are to isolate the affected animals and their hutch and clean and disinfect it thoroughly. If the animals are badly affected it is best to kill them mercifully and not try to cure them unless they are extremely valuable.

HARES FOR MARKET

Although most rabbits in this country are reared as pets, yet they are very profitable animals to raise for the market. The small domestic rabbits are not in great demand for food in America, but in England they form a very large and important part of the diet of many people. So many are annually consumed in Great Britain that, in addition to the immense native supply, from ten thousand to twelve thousand tons are imported, mostly from Australia and New Zealand.

In America the wild rabbit is well known in the markets, and during the past few years the Belgian Hare has been widely raised for market purposes. This animal is superior to the ordinary rabbit, is strong, hardy, and easy to raise. Although opinions differ as to the origin of the Belgian Hare, some holding it is merely a variety of the rabbit and others contending that it is a cross between the hare and the rabbit, there is little doubt that it originated in northern Europe, where for a very long time it has been raised extensively for food.

Unfortunately, most of those who undertook to raise Belgian Hares in this country devoted more attention to producing fancy, pedigreed show animals than to developing a profitable business from market animals. The result was that Belgian Hares soon became a fad and the country went hare-mad, and when a reaction came this really superior food animal was soon neglected and, in many cases, given up entirely. Nevertheless, a great many people are to-day raising Belgian Hares for the market and are finding it a pleasant, easy, and profitable business.

The Belgian Hare is one of the most desirable animals for table use and is probably superior to all other breeds of rabbits. It weighs more than other breeds, develops very rapidly, is prolific and very hardy. The general care and feeding of the Belgian Hare are precisely the same as for common rabbits, and at four months of age the young are ready for market and, if properly fed, should weigh six pounds or more.

Hares may be marketed either alive or killed and

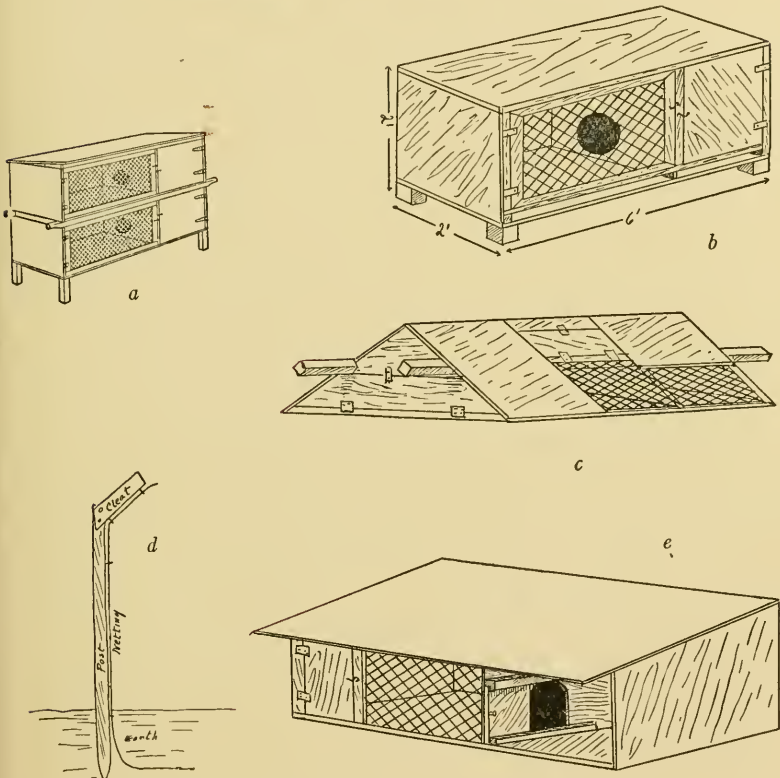
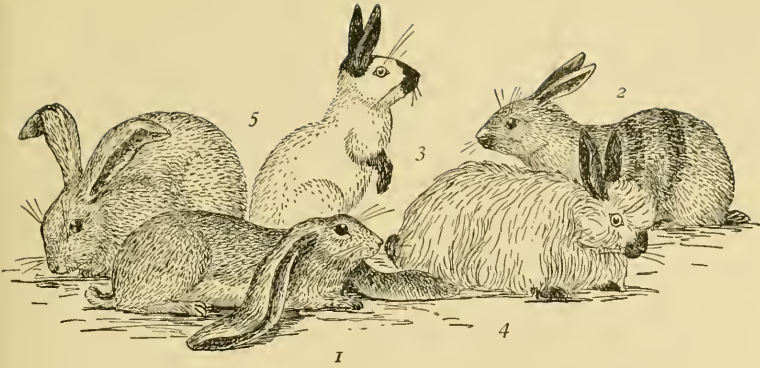
dressed. In the former case they should be crated properly and shipped to market, and in hot weather this is by far the better plan. Moreover, many people may object to killing or dressing the animals, and by shipping them alive this will be avoided. If the animals are to be killed this may be done in two ways, either of which is practically painless and perfectly humane. The best method is to dislocate the neck. As it takes some little practice to do this properly, most amateurs will prefer to kill by a blow on the head. To dislocate the neck the animal should be seized by the hind legs with the left hand, the thumb of the right hand placed just behind the ears, where the neck joins the head, with the palm resting on the left side of the hare's head, and the fingers holding firmly under the jaws. The creature should then be quickly and suddenly stretched out with considerable force, at the same instant pressing in with the right thumb and bending the head sharply back. The simpler and easier method is to hold the hare by the hind legs with the left hand and strike a sharp, hard blow on the back of the head with a round stick of hard wood. In either case, as soon as the rabbit is stunned or the neck dislocated, the jugular vein should be cut with a sharp knife, and the carcass hung head downward to bleed.

The next step is to make a longitudinal incision with a sharp knife down the middle of the belly, being careful not to cut into the intestines but severing the skin and abdomen. The intestines, paunch, and other

viscera should then be drawn out, and the heart, liver, and kidneys left in place. A slit should then be made between the tendon and the bone of one hind leg, the other leg slipped through the cut, and the carcass hung up until it stiffens.

The bodies should be packed in a basket, hamper, or a well-made crate, or even in a barrel with ventilation holes. If a crate or basket is used, it should be provided with slatted trays so that the hares may be separated in layers, but if a barrel is used each carcass may be wrapped in paper, and the rabbits packed in layers. The trays are far preferable, however, and the superior condition in which they reach the market will usually result in an increase of price more than sufficient to pay for the time and trouble incurred and for the cost of the trays. If the market is not far distant arrangements may be made to have the empties shipped back to the breeder.

Although it is impossible to state just what a person should realize from market rabbits, yet under usual conditions there should be a good margin of profit. Much depends on the distance to the market, the demand, and the cost of food. In England, where rabbits and hares are as common in the market as fowls, the prices paid for the dressed animals average from ten to twelve cents a pound. In America the price varies a great deal; but in many places from eighteen to twenty cents a pound is the price paid for dressed rabbits and hares. Usually better prices may be obtained by selling direct to the consumer than to a marketman or



RABBITS AND RABBIT-HUTCHES.

- 1. Lop-Ear. 2. Patagonian. 3. Himalayan. 4. Siberian. 5. Japanese.
- a. Movable outdoor hutch in tiers. b. Breeding-hutch. c. Simple outdoor hutch.
- d. Post with netting for enclosure. e. A simple hutch.

commission merchant, but of course the demand is not as great. Sometimes definite arrangements may be made with hotels and restaurants as to price and quantity.

FANCY RABBITS

Although the ordinary English Rabbit is an excellent animal for a pet, yet some of the other "fancy" breeds will be found more attractive and interesting, and if kept in good shape and bred true to form and color they will sell readily. The care of these fancy breeds is much the same as for ordinary rabbits, but several of the varieties are rather delicate and must be kept indoors or in a very sheltered location in cold weather.

Some of the most notable fancy varieties are the following:

Lop-Ear

This was at one time a great favorite with many people, both professional fanciers and amateurs, especially in England. The breed is easily recognized by the long, soft, drooping or "lop" ears, which often reach an enormous size in pure-bred stock. Fourteen inches or more is not unusual for the length of each ear of this rabbit. The Lop-Ear is a rather large, "rangy" rabbit, usually of solid color. In breeding, those with uneven, stiff, or angular ears should be discarded, and only those with the longest, softest, and most perfect ears retained.

Patagonian

This is a variety in which the ears are erect but bend sharply and at an angle near the tips. It is not often seen and should not be confused with rabbits having some "Lop-Ear" blood, and which have one ear drooping or bent, or have a partial curve or drop to one or both ears.

Himalayan

This is a very beautiful and striking breed of graceful, compact build, and distinguished by its peculiar color markings. Well-bred Himalayans have the nose, tail, ears, base of ears, with a small space on the head, and feet and legs pure black. The body should be white, but Himalayans with yellow, gray, brown, or orange bodies are sometimes seen. If well-marked, perfect animals are desired great care must be used to discard all stock whose markings are "off color," uneven, or mixed with light hairs.

Siberian

This is a long, silken-haired variety, resembling the Angora in its coat but with the dark nose, ears, and feet of the last breed. It is a very attractive, pretty variety but must be carefully brushed and cared for if the coat is to be kept in good condition. Breeding does get on better if the hair is clipped fairly short, as otherwise it becomes matted and objectionable.

Japanese

This is a curiously marked variety, distinguished by the even, tiger-like bands on the body and the dark nose and ears. Great care in breeding must be taken in order to keep the markings clear and distinct.

Angora

This is the commonest breed of long-haired rabbits, but the majority of so-called Angoras are nowhere near pure-bred. Practically any long-haired or semi-long-haired rabbit is classed by ordinary dealers as an "Angora." The true, pure-bred Angora is a very handsome and very troublesome creature. The hair should be extremely long, very soft and silky, and the color uniform. The perfect Angora is snowy white, but Angoras of any solid color are very attractive.

Many ordinary English Rabbits show tendencies to long or Angora-like fur, and in breeding either the common or the fancy breeds such individuals should be discarded. Angoras require frequent brushing, scrupulous cleanliness, and careful feeding to do well; for a mussed-up, dirty Angora rabbit is about as miserable and unattractive a creature as one can find.

WILD HARES AND RABBITS

All varieties of wild rabbits and hares may be raised in captivity and usually become gentle and affectionate. The little Cottontail, the Northern Hare, the Jack

Rabbits, and the Arctic Hares may all be raised for pets, and will usually breed in confinement. The food required by these creatures is practically the same as for tame rabbits, but fresh bark, grass, and green food is very important. The Arctic Hare will also eat moss and some kinds of evergreens and is very fond of young birch shoots and buds of trees.

CHAPTER III

GUINEA-PIGS OR CAVIES AND THEIR RELATIVES

THE name of guinea-pigs so long applied to these little creatures is really misleading, for they are not related to pigs and did not originate in either Guinea or New Guinea. They are properly cavies, and though no naturalist can state definitely from what particular species they are descended, there is not the least doubt that they originated in Central or South America, where numerous wild varieties of their family still exist.

Cavies are very easily reared and are so docile, quiet, good-natured, and neat that they are universal favorites with boys and fanciers. Although mainly used as pets, or for exhibition purposes, many people keep them to drive away rats and mice; for it is a common belief—apparently founded on fact—that rats and mice will not infest buildings or houses where cavies are confined.

The commonest type, or breed, of cavy is a smooth-haired variety known as the English or Bolivian Cavy. These are found in a great variety of colors and are divided by fanciers into several distinct classes for ex-

hibition purposes. The most important are Bolivian Self-Colored Cavies. The main points in this variety are the large head with an outward curve to the face, or "Roman nose"; fairly large ears turned over at the upper edge and nearly bare of hair; short neck; deep, wide shoulders; broad back; and a plentiful, short, soft, glossy coat. The main point to be obtained is an absolutely even coloring of a single shade of red, cream, brown, black, or white. A single hair of any other color will disqualify this breed for prize contests, and only by constant care in breeding and the elimination of all parti-colored stock can good results be obtained.

CARE AND HOUSING

Cavies require comparatively little space, for they are not particularly active creatures, but their hutches should be large enough to afford plenty of space for moving freely about, and in good weather they should be placed in pens or boxes, with a wire-netting top and no bottom, which may stand on a plot of grass. Regular feeding, cleanliness, and proper food and bedding are the most important points. While quite hardy, cavies should not be kept out-of-doors in cold weather but should be housed in a fairly warm building and given plenty of clean straw, although with the short-haired varieties, sawdust, peat, or dry sand will keep the hutches free from moisture and is easily replaced when dirty. Long-haired cavies frequently nibble each other's hair, and for this reason the Peruvians should

be kept in separate hutches. The other varieties may be kept in hutches holding several individuals, but the does and bucks, over five or six weeks old, should be separated.

FEEDING

Cavies will eat almost anything of a vegetable nature; but they are often overfed or improperly fed, and it is a good rule to feed only the best and just enough. Sweet hay should be given morning and evening, and if a little hay is always in the hutch it will do no harm and will give the creatures something to nibble at. Hay should be placed in a rack within easy reach, for if scattered loose in the cage or hutch it will be trodden and soiled and of no use as food. Bread and milk, squeezed almost dry, is good with the morning meal, as are also a few large oats. For the midday feed green food is advisable, such as plantains, watercress, carrot tops, parsley, dandelions, chickory, and clover.

Every few days a slight change in diet should be made, and the evening meal should regularly include a mixture of bran, meal, oats, barley, or rice made just moist enough to stick together. By a little experimenting you can soon determine just how much food should be given at each meal, and you should try to give just enough to satisfy the animals without leaving any appreciable waste. Never place the food loose in the hutch, but set it in little dishes or pans with a broad bottom which cannot be readily upset. Cavies as a

rule do not drink much but depend upon the natural moisture in green food; but a little clean water should always be provided.

BREEDING

Although cavies will breed at a very early age, the young will be stronger and better if the old ones are kept separated until eight or nine months old. Peruvians used for breeding purposes should have the hair clipped quite short, as it is likely to become matted and dirty if not combed, and to do this when the doe has young is not advisable. Moreover, the long hair is a great impediment to the mother when nursing her young, and as breeding animals are not shown in exhibitions, the loss of hair is immaterial. The young cavies should be left with the mother for four or five weeks. Then they will begin to eat solid food, and during this time plenty of warm mash, bread and milk, and crushed oats should be fed. If you are raising stock for exhibition, the young that do not approach a standard should be disposed of for pets or to other breeders, and only the really good ones retained. Cavies are very prolific, and a great difficulty is in keeping down the stock and maintaining perfectly marked or standard individuals. In selecting does and bucks, or, as sometimes called, "sows and boars" for breeding, you should choose does having good size and coats and select the bucks which possess the best characters lacking in the does, such as color, form, eyes, etc.

DISEASES

Cavies are free from all vermin and are not at all subject to disease or parasites of any kind. Snuffles, pot-bellies, loose bowels, and epileptic fits are sometimes met with, however. These troubles are caused mainly by lack of cleanliness, improper food, or sudden changes in temperature and should be cured as far as possible by natural means. Less food, especially green food, and more exercise will usually remedy a "pot-belly," while even temperature and plenty of warm bedding will cure colds or "snuffles." Fits usually result in death but can be avoided by not overfeeding with rich food.

BOLIVIAN AGOUTI CAVIES

This is a well-marked variety of the common cavy in which the short, glossy hair is a beautiful silver-gray, with black "tickings" through the hair and known as "Silver-Grays," or else the color is rich golden-yellow beneath, with black "tickings" over the head, legs, and feet. This form is known as the "Golden Agouti" and is a very handsome and attractive variety.

BOLIVIAN TORTOISE-SHELL CAVIES

To stand a chance of prize winning this type should have but three colors—red, black, and yellow—and while the colors may be arranged in any pattern or proportion, they should be sharply defined and should

never blend or mix. White spots or patches should not be permitted, for the animals thus marked belong in another class, known as "Tortoise-Shells and Whites." These should, as a rule, have less white than tortoise-shell colors, and the white markings should be as regular and evenly distributed as possible.

BOLIVIAN DUTCH-MARKED CAVIES

These are cavies in which white with red, black with white, yellow with white, or similar colors are distributed much in the same manner as a Dutch-marked rabbit, or, in other words, in heavy, regular blotches, with distinct, sharp edges. Specimens marked unequally on both sides will not prove prize winners but may be excellent to breed from.

Interesting and lovable as are the common Bolivian Cavies, other more fancy varieties are even more attractive. Prominent among these are the Peruvians and Abyssinians, neither of which names have anything to do with the native country of these little creatures, which are merely varieties or breeds of the commonplace guinea-pig.

PERUVIAN CAVIES

These are very striking-looking creatures when well bred, and the greatest difficulty is often found in distinguishing head from tail, so heavily covered and completely concealed are the little fellows by the enormously long, silky hair. Peruvians are not so hardy as

the Bolivians and require daily brushing to keep their coats in good condition. The best way to accomplish this is to hold the cavy on the palm of the left hand and brush the hair with a common hair-brush. A wire brush or comb should *never* be used for this purpose. This is a breed particularly well adapted for rearing by girls, and many of the best prize winners in this class have been exhibited by girls.

The main point to be gained in the Peruvian Cavy is a broad, flattish body and very long, silky, abundant hair, which should touch the ground on the sides and trail behind and should completely cover the face, much as in the Yorkshire terrier. Color is of little importance, for they are shown in blacks, blues, grays, white, yellows, browns, and in various combinations of these colors.

ABYSSINIAN CAVIES

This is considered the hardiest variety of all cavies, and they are so odd and peculiar in appearance that every cavy fancier should raise them. While the coat of a Peruvian should be as silky as possible, the hair of an Abyssinian should be as harsh or rough as possible. Secondary to the harshness of the fur is the matter of "rosettes." These are little circular, star-like growths of hair dotted all over the head and body, which give the rumped and brushed-the-wrong-way effect. The short, bristly hair on the face and lips gives this breed the appearance of being quite ferocious, but in reality they are as gentle and quiet as

any other variety. Color in this breed is not important, although the solid or "self" colors and tortoiseshells are very attractive.

ANIMALS RELATED TO THE GUINEA-PIG

Although the original ancestor of the domestic guinea-pig is not known with certainty, yet there are many species of cavy-like creatures found wild in tropical America, and nearly all of these are easily tamed and become as gentle and affectionate as the true guinea-pig. There are also quite a number of animals closely related to guinea-pigs, yet very different in appearance and in their habits, which are, nevertheless, subject to practically the same treatment, feeding, and housing. While these various unusual animals are not always to be found in the stores of animal dealers or fanciers, yet now and then you may come across one of them, and sailors returning from voyages often bring such things home. As out-of-the-way pets always attract attention and are interesting, it is advisable to secure such specimens when you can, especially if you raise other animals such as guinea-pigs, rabbits, squirrels, etc. As a rule, all these creatures are low in price, for comparatively few dealers know anything of their habits or needs and are glad to get rid of them. There is no trouble in disposing of them to zoological gardens or menageries if in good condition, should you wish to do so, and in the meantime you can learn a lot about their habits and peculiarities; while if they



GUINEA-PIGS OR CAVIES.

- | | |
|--|----------------|
| 1. Paca. | 4. Capybara. |
| 2. Patagonian Cavy. | 5. Chinchilla. |
| 3. Varieties of Guinea-Pigs— | 6. Agouti. |
| <i>a.</i> Bolivian. <i>b.</i> Dutch. <i>c.</i> Peruvian. <i>d.</i> Abyssinian. | |

breed in captivity you may often make a good profit from the original outlay.

AGOUTIS

These animals are natives of South and Central America and the West Indies and, while seldom seen in captivity in this country, yet in their native lands they are often seen in confinement and make very attractive, interesting, and intelligent pets, and are great favorites with the natives.

They are closely related to the guinea-pigs, being a species of wild cavy, and in general form they resemble these well-known animals. They are a great deal larger, however, often measuring 2 feet in length, and have longer legs, a heavier head, and hoof-like claws. There are several species but, while differing slightly in the length of the tiny tail and in color, all are very much alike. In color they are brownish, more or less "ticked" or dotted with various shades of yellow, reddish, or gray, and with reddish or rich golden-yellow on the rump and legs. The hair is rather coarse but thick, and is very long on the rump, which gives the agouti a queer, "tucked-in-behind" appearance. Agoutis live naturally in deep woods and feed mainly at night, but in captivity they behave very much like guinea-pigs. They have strong, chisel-like teeth, and are constantly gnawing at something and, unless provided with bits of sticks or roots, will gnaw their houses or cages to pieces. Agoutis eat almost anything in the way of vegetable food, but they are par-

ticularly fond of roots, bark, and corn-stalks, and do not care so much for cabbage, lettuce, or grass as do other members of the family. Their general care is much like that described for guinea-pigs, but their hutches should be very much larger, and, if allowed to run in an enclosure, care should be taken to have the surrounding fence extend at least 2 feet beneath the surface, as these animals burrow deeply. Agoutis breed readily in captivity and usually have two young to a litter. Those born in captivity are usually very tame, and if given perfect freedom will remain close to home and soon learn to come to a call or whistle. They are much more intelligent than domestic cavies and may be taught a number of tricks.

THE PAMPAS CAVY

This is a remarkable species of wild cavy, found in Argentina and Patagonia, and properly known as the Patagonian Cavy, but, owing to this name being more commonly applied to one of the fancy breeds of guinea-pigs, it is confusing.

This animal has very long, slender legs and a short tail, and with its prominent ears it looks at first sight like some sort of a rabbit. It is of good size, 2 to 3 feet in length, and weighs as much as twenty-five to thirty pounds. The fur is crisp, short, thick, and rusty yellow in color on the sides and legs, becoming gray on the back, and blackish on the rump, which is also decorated by a broad white band. The belly is

white. These cavies are shy, watchful, restless creatures when wild, but when raised from the young in captivity they become very tame and interesting. They are seldom seen in the North, even in menageries or zoological gardens, but on the large estancias or ranches of the pampas, one or two are frequently seen about the house or grounds, where they are perfectly at home and are favorite pets with the native children.

THE PACA

This is another odd animal related to the cavies and found throughout Central and South America. It is a very handsome little animal about 2 feet long, but stouter and shorter-legged than the agoutis, and with close, short hair. The color is brownish above and white below, with seven longitudinal bands, or rows, of white spots. It is a retiring animal and naturally nocturnal in its habits. It is very fond of water and swims and dives readily. It is as easy to raise in confinement as the common cavies but should always be given a large pan or tub of water in which to swim in warm weather. The paca eats any sort of vegetable food, but should be provided with more roots and sticks than ordinary cavies.

CAPYBARAS

These are the largest of all the cavy family, and are often 4 feet in length and weigh as much as one hundred pounds. Their heads are so large, heavy, and

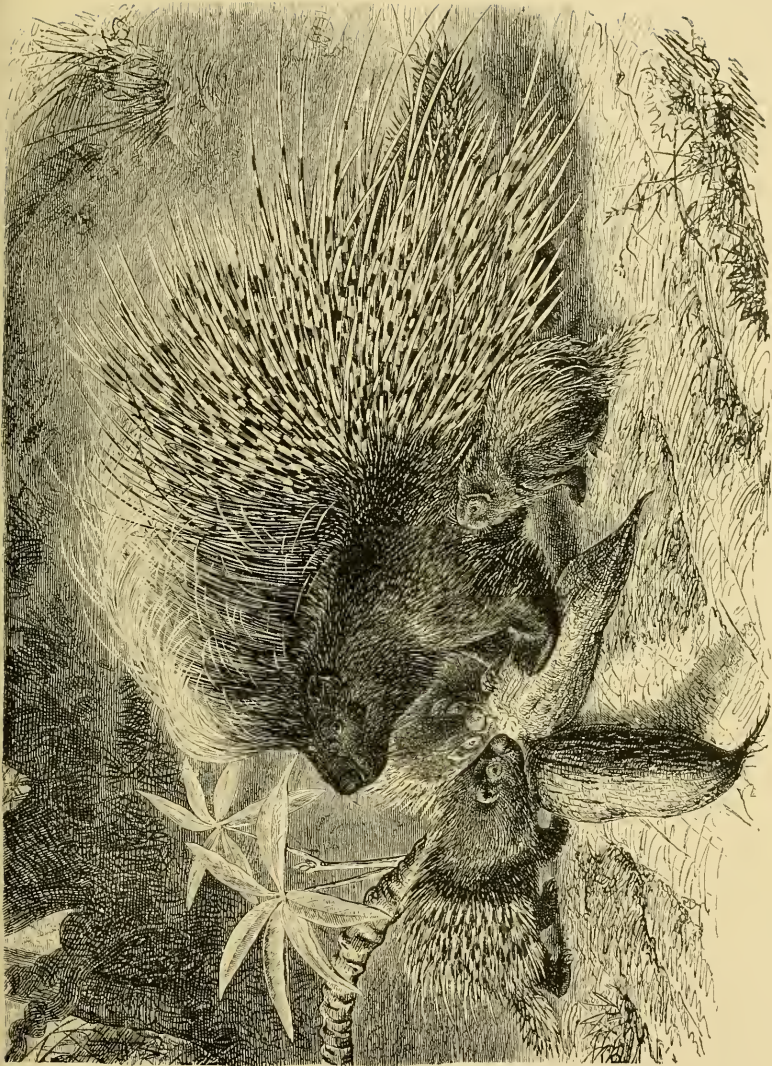
blunt, their bodies so massive, and their claws so hoof-like that at first sight they appear more like pigs than cavies. They are exceedingly fond of water, and in their native land—South America—they always take to the water when frightened or attacked. For this reason, they are often known as Water Cavies. They are quite intelligent and are easily domesticated, but their great size and thin, coarse hair make them unattractive for pets, and they are far better suited for menageries or for collections of foreign animals. Their food and general habits are much like those of their tiny cousins, the guinea-pigs.

CHINCHILLAS

These dainty, soft-furred creatures are closely related to the cavies and guinea-pigs and are easy to keep as pets but seldom breed in confinement. They are natives of Peru and are mountain animals and quite hardy, and will stand our northern climate if housed during the coldest weather. Their food is similar to that of rabbits, cavies, and other rodents.

VISCACHAS

These are animals forming a sort of connecting-link between the bushy-tailed chinchillas and the cavies, and in South America they occupy much the same position as do our western gophers, or ground-squirrels in this country. Like these, they prove very troublesome at times where abundant and, as they are about



AFRICAN PORCUPINE.

2 feet long, they can do a correspondingly greater amount of damage. In color the viscachas are gray, mottled with darker gray, white, and yellow, with black bands on the head. They are very easily tamed and become very affectionate. Their food is much like that of cavies, but they are also very fond of roots and of thistles.

PORCUPINES

These odd, spiny, sluggish creatures are often kept as curiosities, for their prickly nature hardly permits them to be used as pets, although they become fairly tame and are quite easily domesticated. The common American Porcupine lives in all our Northern States and Canada, and is so well able to protect itself that it is seldom molested and becomes quite tame about camps and houses. The American species is provided with numerous short, slender quills, or spines, which are mostly concealed in the long, thick fur, but the tail, which is short, broad, and blunt, is well covered with spines. The claws are hooked, and the creature climbs large trees readily and frequently entirely strips them of bark. These creatures are very slow in motion, sluggish, and uninteresting, and should be handled and approached with caution, for the old idea that the porcupine could "shoot" its quills has considerable truth. The animal cannot really "shoot" the quills, but when disturbed the tail is jerked suddenly from side to side and the loosely fastened quills are thus thrown for some distance. The European Porcupine

is a very different-looking creature, with long quills projecting far beyond the hair, and, unlike its American relative, it lives entirely on the ground. Porcupines eat all sorts of vegetable food, especially roots and bark, and may be kept out-of-doors in runs or enclosures, but the native species will readily climb over netting fences, and for this reason boards leaning inward should extend up for 3 or 4 feet from the ground inside the netting.

CHAPTER IV

SQUIRRELS AND THEIR KIN

SQUIRRELS are among the most attractive, interesting, and satisfactory small animals for pets.

They are always bright and lively, thrive well, and seem just as happy in captivity as when wild.

Many kinds of squirrels are kept as pets, and they are all easy to feed and to care for and usually become very tame and affectionate. Moreover, they are very intelligent, far more so than rabbits, guinea-pigs, or most other small animals; and they are very neat and clean.

Old squirrels, captured when wild, seldom become very tame and are likely to be cross or vicious; but most squirrels breed readily in confinement, and the young, when raised in captivity, are very docile and tame. Young wild squirrels taken from their nests or holes are also readily tamed and reared in captivity and are usually quiet and gentle in disposition. These animals appear to enjoy fondling and petting and are seldom injured by too much handling. They will learn to run over their master or mistress, perch on shoulders or arms to eat nuts, or to search through pockets for hidden tidbits.

In many places wild squirrels which have been thoroughly protected from injury or molestation have be-

come very tame and confiding. In many of the larger cities the squirrels are abundant in the parks and shade-trees and may be seen hopping about on lawns, running along fences, or jumping from tree to tree, with the noise and bustle of city life going on all around them. Many of these city-bred squirrels have the utmost confidence in human beings and eat readily from a person's hand. Some of them have been fed at near-by houses so frequently that they come indoors regularly every day for meals, even running through the rooms and up and down stairs and making themselves perfectly at home. So tame and unsuspecting do these wild town squirrels become that they do not hesitate to climb upon the clothes of people who feed them and will often perch contentedly on a person's shoulder while eating a nut or bit of fruit.

HOUSING

Squirrels love plenty of room, and it is a great mistake ever to confine them in a small cage where they have no opportunity for exercising. If they are tame enough to be let loose frequently, a very small cage will serve for sleeping quarters; but as a rule the cage should be large, airy, and fitted with natural branches of trees. If a small or medium-sized cage is necessary, it should have swings, branches, or other means of providing exercise, but revolving wheels should not be used. Squirrels will run in a wheel, it is true, and they often seem to enjoy it, but if given swings, branches, and

a wheel, you will find that they invariably choose the more natural methods of exercising and accept the wheel when it is the only available means of satisfying their natural desire for rapid and constant motion.

There are a number of species of American Squirrels, all of which make good pets, and the common European Squirrel is also frequently seen in captivity.

FEEDING

Squirrels depend mainly upon nuts for food, but they are also very fond of fresh, green grass, clover, bark, fruit, and many vegetables. In their wild state they are often very destructive to young birds and birds' eggs; this is particularly true of Red Squirrels, and these animals thoroughly enjoy a little meat or an egg now and then. Most varieties—especially the Flying Squirrels—are very fond of insects, particularly large beetles, grasshoppers, and spiders, and these should be given to them whenever possible. Peanuts, when roasted, should be fed very sparingly, as they are an unnatural food, although squirrels are very fond of them. Hickory-nuts, chestnuts, pecans, butternuts, acorns, and filberts are all excellent, and the harder shelled the nuts the better, for, unless provided with something to keep their teeth worn down, these creatures will suffer terribly from overdeveloped teeth and, if not attended to, will eventually die. A limited amount of fresh vegetables, plenty of green grass, pieces of green wood—such as apple and pear—with the bark on, and now

and then stale bread-crusts will provide a good and ample diet. Whole oats, hard corn, barley, wheat, and buckwheat are first-rate food for squirrels if given in reasonable quantity for a variation of the diet, but hard nuts *must* be given daily to keep the teeth worn down and the animals healthy.

Most squirrels are very fond of milk, and this will not hurt the young ones or the mothers with sucking young, and for the latter a little bread and milk is excellent. Water is a necessity for squirrels, and a pan of clean water should always be within their reach. Regular feeding with squirrels is only useful as a means of accustoming them to your appearance, and teaching them to welcome you, for they all store away food for future use, and if fed once a day they will put by enough to last until the next feeding. In fact, they will generally have enough on hand for several days at a pinch, and care should be taken not to feed too much. If you find that your squirrels do not seem anxious for food each time you appear, you may be very sure that they have stored more than they need, for squirrels seem to be able to judge very well just how much they will require in advance.

CARE AND BREEDING

As I before stated, squirrel cages should be large and roomy. Most of the cages sold by dealers are too small for even Flying Squirrels, and much better cages may be built of stout wire netting nailed over a frame of wood, or fastened to a framework of metal rods or



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SQUIRRELS AND THEIR KIN.

- | | |
|--|------------------------|
| 1. European Squirrel. | 3. Dormouse and Lerot. |
| 2. Ground-Squirrel, or Thirteen-Lined Spermophile. | 4. Flying Squirrel. |
| 5. Taguan. | |

heavy wire. The floor should be easily removable, for cleaning, and a good-sized nest-box or a rack of netting should be placed in one corner at some distance from the floor. If a very large cage is used, the nest may be in the form of a hollow log or tree stump. A scraggly branch or limb of apple, cedar, pear, or some other tree should be securely fastened in the cage, and several sections of limbs, fastened with chains so they can swing back and forth, should also be placed in the cage. Plenty of hay, dead leaves, cedar bark, and a little cotton should be provided for a nest, and the squirrels will spend a great deal of their time tearing up the bark and building and rebuilding their nest.

Most of the native squirrels will stand our northern winters, and if the cage is large it can be kept safely out-of-doors all winter, but the top must be covered to prevent rain, sleet, and snow from drifting and beating in on the inmates. Flying Squirrels and Ground-Squirrels hibernate in winter, however, and Red Squirrels sleep more than half the time; and if you wish to enjoy the company of these pets throughout the year, you should keep the cage inside a fairly warm building in winter-time.

Where there is ample room, and you wish to have the squirrels perfectly at home, you may enclose quite a plot of ground with netting. Sink the lower edge of the wire netting a few inches underground and roof over the entire enclosure with it; and if Ground-Squirrels are to be kept within, the whole floor should be dug out for a foot or so in depth, and close-meshed netting

placed on the bottom of the excavation and covered with the earth. In such a cage you may enclose shrubs, small trees, and masses of loose stones, or you may introduce hollow tree trunks and logs and numerous swings and branches.

Squirrels of all varieties usually breed readily in confinement if their cages are roomy and good nests are furnished, but the males frequently kill and devour their own young. When the doe has young it is best to separate the male from her and take no chances, although if given a natural hole for her nest she will probably be capable of looking out for the safety of her family without your help. Male squirrels are very quarrelsome among themselves, and as soon as the young are able to look out for their own wants they should be separated from the old ones, and the bucks and does placed in separate cages. Several does will usually get on together, and if paired off there will seldom be any trouble; but unless you want cross and quarrelsome males they should be kept apart.

Flying Squirrels are an exception to this rule, however, for these little creatures are very sociable and dwell together in perfect peace in one large nest or hole. If several nests are given them they will form several distinct colonies and will seldom quarrel.

VARIETIES OF SQUIRRELS

The European species is easily distinguished from most of the American Squirrels by the prominent tassels

or tufts of hair on the ears, although a few of our native species also have ear-tufts.

The Gray Squirrel

The species most commonly seen in captivity is the common *Gray Squirrel*, a fairly large, handsome species, rich silvery-gray in color, with reddish-brown on the head and ears and along the sides, and with a magnificent, bushy tail fringed with snow-white.

The Gray Squirrel makes a good pet, but the males, especially when old, are apt to be cross and vicious and will sometimes bite if fondled too much or touched suddenly. They live naturally in heavy woods and build nests both in trees among the branches and in holes. They are easy to capture with box traps, and the young, raised in captivity or taken from the hole or nest and reared by hand, are usually very tame and docile.

The Fox-Squirrel

Another very beautiful American species is the *Fox-Squirrel*. This is a very variable species found throughout the Central, Western, and Southern States. It is usually slightly larger than the Gray Squirrel, and in its best and most typical form is rich, reddish or tawny-brown in color. Where the Gray and Fox-Squirrels inhabit the same localities they mix, and many odd varieties occur which have the characters of both species.

In the South Atlantic and Gulf States a black form of the Fox-Squirrel is found, with pure white ears and

nose. This is a very beautiful creature and quite different in appearance from the black form of the common Fox-Squirrel, which lacks the white nose and ears and usually has traces of reddish on the lower parts. This latter variety is rather difficult to distinguish from black specimens of the common Gray Squirrel, but the latter is always pure white, or whitish below, while all the Fox-Squirrels are reddish or tawny.

In the Southwestern States another Gray Squirrel occurs which has a very large and beautiful tail of white, black, and gray, much longer than the head and body. This species extends from Arizona into Mexico and is a splendid creature.

The Rocky Mountain Squirrel

Probably the most beautiful of all this group of large squirrels is the *Rocky Mountain Squirrel*, a species nearly a foot in length, with an enormous, bushy tail. The color is pure dark-gray, white below, with a bright, reddish-brown band on the back and a stripe of jet-black on the flanks. This handsome creature has pencilled or tufted ears, like the European Squirrel, and is sometimes found in a perfectly black stage, but even in this form it may be easily recognized by its large size and tufted ears.

The Red Squirrel

The common *Red Squirrels* or "*chickarees*" are much smaller than those species belonging to the Gray-



RED SQUIRREL.



GRAY SQUIRREL.

Squirrel group and have a smaller and flatter tail and tufted ears like the European Squirrel. In color the chickaree is reddish or tawny, with a dark streak along either side and white below. The tail is reddish or "fox color," with a black stripe on the edges, and is almost flat instead of being full and "bushy" like the Gray Squirrel's. Red Squirrels are very lively, restless, irritable animals, full of life and vivacity, and if taken when young or bred in captivity they are easily tamed and become very docile and affectionate. They are usually shorter-lived than their larger cousins, but if properly cared for and fed they will live many years in captivity and will breed freely.

The Flying Squirrel

The most lovable and beautiful of *our* wild squirrels are the Flying Squirrels; dainty, gentle creatures, with large, soft eyes, downy coats, and affectionate dispositions which make them favorites wherever they are kept as pets. They are very small creatures, and their thick, soft fur makes them appear larger than they really are. They are exceedingly easy to tame, whether captured fully grown or taken when young, and are always gentle and affectionate and very seldom attempt to bite or scratch. Unlike the other squirrels, these little chaps are mainly nocturnal in habits when wild and are seldom seen during the day, but in captivity they soon learn to feed and frolic in daylight, and often remain wide awake and lively all day long.

Flying Squirrels make their nests in old birds' nests, in holes in trees, or even in barns or garrets, and usually a number live together in perfect harmony.

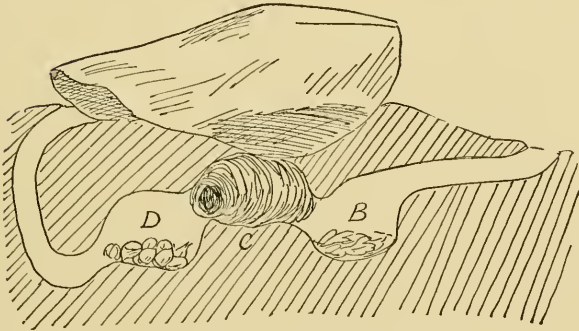
Ground-Squirrels

Ground-Squirrels are often kept as pets, but they are not true squirrels and are often classed among the gophers, although in reality distinct from both the true gophers and the true squirrels. They are properly known as "spermophiles." There are a great many species of the Ground-Squirrels in America, and in some parts of the country they are a nuisance and annually cause an immense amount of damage to growing crops, besides spreading the terrible bubonic plague. Nevertheless, they make charming and interesting pets and do well in captivity. The Ground-Squirrels are found most abundantly in the Central and Western States, where they live in holes or burrows in the earth. The *Gray Gopher* or "*Gray Ground-Squirrel*" is a common western species, which looks much like a miniature Gray Squirrel. The "*Thirteen-Lined*" *Ground-Squirrel* has six or eight light-colored stripes alternating with rows of light spots on a coat of dark reddish or blackish-brown, and this odd "Stars-and-Stripes" pattern gives the pretty little fellows a very patriotic appearance.

The *Mexican Ground-Squirrel* or spermophile is another beautiful species of a dark-brown tint, decorated by ten rows of squarish, white spots and with the tail bordered with black. Our common eastern *chip-*



CHIPMUNK.



SECTION OF CHIPMUNK'S HOLE.

munk or Ground-Squirrel is a pretty, reddish-brown or tawny fellow, with his sides and back decorated by stripes of black and white, and is more closely related to the true squirrels than are his western cousins.

All the spermophiles and chipmunks live naturally in holes or burrows, among stone walls or in hollow logs, and in captivity should always be furnished with a section of a hollow stump, or some similar dark hole for their nests. They are all easily tamed and make interesting pets but are far less affectionate and intelligent than true squirrels.

The western spermophiles live in colonies and play and frolic outside of their burrows like kittens, to pop out of sight on the first sign of danger. They all have large pouches in their cheeks in which they carry stores of nuts, grain, or other food with which they provision their homes, for they are thrifty creatures and always maintain a well-filled larder. Many of the species hibernate or sleep all winter in a wild state, but in captivity they will remain lively throughout the year.

The nest of a chipmunk is a very interesting home, and if you can discover one and dig it out carefully you will be surprised to find how cleverly it is arranged. There are usually two doors to the house; one, the front door, being hidden beneath a stone or stump, while the other or back door may open some distance away. Near the front door is a large chamber or room which may be called the "living-room," for here the owner spends most of his time when not sleeping, and this room is usually littered with odds and ends of nut-

shells, bits of bark and leaves, etc. Just beyond this is the bedchamber, a cavity filled with a warm, soft nest of bark, grass, and leaves, while still farther on and near the back door is the storeroom or pantry, which is always kept well filled with provisions.

ANIMALS RELATED TO SQUIRRELS

A great many foreign animals, now and then seen in captivity or offered for sale by dealers, are very similar to squirrels in habits, care, food, and requirements. Some of these make splendid pets and are kept as such in their native lands. Among these creatures are the *dormice*, which have always been favorite pets with English children. They are distantly related to the squirrels and are most gentle, lovable, and affectionate little creatures, resembling miniature squirrels in appearance. Larger species of the same group are found in southern Europe, and are known as the "*Loir*," and "*Lerot*." They look much like dormice but are larger and have different tails; all three species require practically the same food and treatment as Flying Squirrels, although unlike true squirrels they may be reared and kept in very small quarters.

Related to the Flying Squirrel is the Asiatic "*Taguan*." This animal has very much the same habits as the Flying Squirrel and, although 2 feet or more in length, it is almost as docile and easily tamed as its tiny American cousin.

Another large Flying-Squirrel-like creature is the

Scale-Tailed Squirrel of Africa. This extraordinary animal has the form of a squirrel, with the flaps of skin on the sides like a Flying Squirrel, and is of a reddish color. The most remarkable feature is the tail, which is provided with a number of large, horny scales, which the owner uses in climbing much in the manner that a man uses climbing-irons for clambering up a telegraph-pole. The Scale-Tailed Squirrel is not often for sale at dealers' but is sometimes seen in zoological gardens, and now and then some mariner brings one home as a curiosity. Sometimes the animal dealers in the large seaport towns have one or two on hand, and as unusual pets are always attractive, the young pet lover should visit these places frequently and may often pick up splendid pets at a very low price.

There are also several species of Central and South American Squirrels which make good pets. Some of these closely resemble the Fox-Squirrels, while others are richly and quite brightly colored with orange, red-brown, and rich, deep black. Several of these tropical squirrels have coarse hair, so stiff as to be almost like spines, and one or two actually have sharp spines among the hairs.

These South American Squirrels are not infrequently found at the stores of animal dealers, and with the increasing number of tourists who visit the tropics each year they may soon become quite common as pets in the North.

CHAPTER V

LARGE RODENTS—WOODCHUCKS AND OTHER MARMOTS

THE rodents or gnawing animals are nearly all suitable for pets; and while rabbits, guinea-pigs, and tame rats and mice are the rodents usually seen in captivity, there are many others that make very interesting pets.

Nearly all rodents are naturally timid or gentle in disposition, are easily tamed, and require very little care or attention in captivity. Moreover, rodents are cleanly in their habits; they require but little space, and the food that they need is very cheap and easily procured. For all these reasons rodents are particularly adapted to a life as pets, and it is strange that more of the larger rodents are not kept by boys and other lovers of tame animals.

It is not necessary to seek far for large rodents for pets, for in nearly every part of America certain wild rodents abound which may be caught when young or trapped when fully grown and may be reared in captivity. Moreover, to confine these creatures is no cruelty or hardship; most of them are considered pests by the farmers and agriculturists and are relentlessly trapped, killed, or poisoned. In comparison with their

wild life, filled with constant dread of man, unceasing vigilance, and incessant persecution, their life as pets, when well cared for, properly fed, and safe from injury or harm, must prove a very welcome change and must be a far happier existence.

Where any bird or animal is common and a nuisance we are apt to overlook its really attractive and interesting features. Our commonest native things are far less studied and less known to the average man or boy than many rare or imported creatures. Although every farmer's boy knows the woodchuck, or ground-hog, yet few of them are really familiar with its ways or life and would be mightily surprised to find what an interesting and engaging creature the little pest really is. The same is true of the western gophers or the prairie-dogs and of many other common wild animals.

WOODCHUCKS

The woodchuck is the most common and the largest of the American Marmots, a group of animals related to the squirrels, although very distinct in appearance. The eastern woodchuck is found from Hudson's Bay to the Southern States, and throughout the Central West, and was formerly exceedingly abundant. Through years of incessant warfare waged against these animals by the farmers, they have in many places become very rare, or so shy and retiring that they are seldom seen. Even where woodchucks are scarcely ever visible their holes or burrows may be found, and while this creature

is a most intelligent animal and well able to take care of its own safety, yet with a little trouble they may be captured in box traps or snares. The large, full-grown animals caught in this way seldom become really tame or gentle, however, and it is a far better plan to dig out the nest and get the young. If the burrow is in loose or sandy soil there is little difficulty in digging it out, but if among rocks or tree roots it is hard, slow work.

It is difficult to tell just when young will be found in the nest, for the time at which they are born varies in different parts of the country, and the most satisfactory method is to watch the hole carefully from a good hiding-place until the young are seen playing close to the entrance. If they are old enough to toddle about outside they are old enough to rear in captivity and are still young enough to become thoroughly tame and domesticated. It is usually a good plan to take two or more of the young, for oftentimes one may develop some disease or may always remain wild and vicious. Moreover, several of the creatures will be happier together than one by itself, and if they breed, as they probably will, you may raise young woodchucks in captivity. It is scarcely any more trouble to raise three or four young animals than a single one, and it is very disappointing to take a lot of time and trouble with a young animal only to have it sickly or unsatisfactory when it grows up. If after the young are reared you do not care for more than one, you can readily dispose of the others to some friend or to a zoological park or museum.

CARE AND HOUSING

Before securing the animals you should provide for their proper housing. A wire-netting cage or enclosure of good size should be ready, and if this can be placed out-of-doors in a sheltered spot, so much the better. If possible the netting should be sunk well into the earth, and an underground floor of netting should be provided. The cage should also be roofed over with boards and tarred paper, or some other water-proof material, and a comfortable nest-box or hutch should be placed in one corner. If you intend to keep your woodchucks in the cage permanently, it should be at least 8 or 10 feet square and 5 feet high, but if intended merely for a temporary rearing cage it may be very much smaller; in fact, an ordinary wooden box with a netting front and a removable floor will serve very well for rearing the animals or a hutch made like a rabbit-hutch will do nicely. Such temporary quarters should be kept in the house or barn, for it is very important to accustom the young animals to the constant sight and presence of human beings.

A good bed of clean, soft straw should be placed in the cage with a pan for water.

FEEDING

The food should consist almost entirely of fresh, green vegetables, with plenty of fresh grass, clover, alfalfa, or similar things. Fresh young stalks of bushes

and shrubs, young apple and pear branches, and fruit are also relished by woodchucks and should be given freely. Woodchucks will also eat insects at times, and if your pets show any desire for grasshoppers, crickets, etc., do not hesitate to give them all they want. Young woodchucks will require some soft food until able to gnaw and masticate well, and for the first few weeks milk, oatmeal or corn-meal mush, soft, green grain, and similar things should be fed. Although woodchucks in a wild state will eat almost any green thing and will limit the amount they eat to their requirements, yet in captivity some care must be taken not to overfeed them. If too much food is given they will become exceedingly fat and lazy, and the lazier and fatter they become the more they will eat, until they either die or are seriously sick from excessive feeding. Woodchucks always look plump and fat, but this is because of the loose skin and thick fur, and a healthy woodchuck in summer is really lean. If the animals are fed twice daily with fresh vegetables and other green foods and in the meantime are given some hay, or branches with the bark on, to nibble, it will be ample. The only way to gauge the amount of food provided is to watch the animals as they eat, and as soon as they lose interest in their food and leave it for a few moments at a time, the food remaining should be removed, and the amount fed at the next meal reduced accordingly. On the other hand, if the creatures devour all that is given them and pick up all the scraps and odds and ends and appear to desire

more, you should give enough additional so that they will appear satisfied. If one person always feeds the woodchucks they will soon learn to recognize their master, and if a peculiar call or whistle is given each time they are fed they will very soon learn to come racing toward the sound when they hear it. As the woodchucks become tame and recognize your appearance or voice, you should fondle and pet them and also accustom them to eat from your hand. After a time you may let one of them, selecting the tamest of the lot, out of the cage or enclosure for a few minutes. If you let the animal loose when hungry and hold some food in your hand there is little danger of his trying to escape. If he appears willing to follow you about and does not run or scamper away as you approach him you may gradually increase the length of time he is allowed at liberty. The same method may be followed with the others until any or all of the little fellows will feed and play about and come to you at a call. If at the first sign of danger or the approach of a stranger, they scamper toward their cage you may rest assured that they realize that the enclosure is their home and will not run away. If they do not readily run into the cage you may train them to do so by attracting them within by food and tidbits. These animals are very quick to learn and, as they are not inclined to wander very far, they may be given considerable liberty.

If you have any growing plants, flowers, or vegetables near by you should never allow the woodchucks out

of their cage unwatched, for if you do they will play havoc with your garden in short order.

HABITS

Woodchucks hibernate or sleep all winter, and at the approach of cold weather they grow very fat and lazy. If you keep your animals out-of-doors, and they have their own burrows, they will take care of themselves when cold weather arrives, but they should be fed a great deal as winter approaches in order that they may accumulate enough fat to last them through the winter. If the animals are kept indoors or in a building they may become lazy and sleepy and will doze most of the time during the coldest weather, but will not really hibernate. Where woodchucks are kept out-of-doors and have only a hutch or box for protection, instead of burrows, a weather-proof nest should be furnished for their winter quarters. An old hollow log buried in the earth, a barrel sunk in the earth with a drain-pipe or similar entrance, or a box covered with sods, leaves, straw, and hay will do nicely. After the woodchucks have retired into such a shelter it may be buried deep beneath straw, leaves, and sods with a layer of straw thrown over the entrance, and within this snug retreat your pets will sleep soundly until the warm air of early spring arouses them, and they crawl forth to the sunlight, thin and gaunt, but ready to eat a hearty meal of the first green things that they see. The animals may or may not come out on or

before Candlemas Day, but you should not place any reliance on the popular superstition in regard to the ground-hog and his shadow. Woodchucks are likely to appear on any warm, spring day, even if the cold weather afterward drives them back to their holes; and on warm, pleasant, sunshiny days in midwinter I have often surprised woodchucks sunning themselves on some warm rock or stump, while the surrounding country was white with snow, and the lakes and rivers were locked with ice.

Sometimes woodchucks that are very tame and thoroughly domesticated will wander off to the fields or woods and remain several days. If these pets show a restless disposition or a tendency to wander in spring or fall they should be shut up; for, while they may remain away a long time and yet return to their master, still there is a good chance of their reverting to a wild life or of being killed or trapped.

“PETER,” THE STORY OF A PET WOODCHUCK

A good many years ago a friend of the author found several young woodchucks playing about their burrow, and succeeded in catching one of the fuzzy little fellows. The baby woodchuck was carried home and given to a little girl in the family for a pet. She named the woodchuck “Peter,” and lining an old squirrel cage with soft hay, she placed her new pet within and furnished him with fresh clover and water. For the first few days Peter was very wild and snapped and

bit whenever a person approached. In the course of a week he gave up biting and snapping and ate readily, and within two weeks would nibble at food held in his mistress's hand and would permit her to scratch his head.

He grew very rapidly and in a month was a large, splendid animal, and so tame and docile that the little girl carried him about in her arms like a pet cat.

On one occasion his cage door was accidentally left open and Peter walked out, but he merely frisked about for a short time, nibbled at grass and weeds, and returned to the cage of his own accord. After that the door to the cage was always left open, and the woodchuck would play about the veranda or nibble in the lawn all day long, and would invariably go back to his cage for the night. He had now learned to answer to his name and would come when called as readily as a dog. One day Dorothy's grandmother was baking, and as Peter trotted into the kitchen she handed him one of the cookies she had made. After smelling at it carefully, tasting it, and nibbling at it, he decided that it was good, and ate it, and from that time cookies were his favorite food. As soon as he heard the sound of dishes and pans or smelled the odor of baking he would scurry around to the kitchen door, sit on his haunches, and wait patiently until the desired cooky was given to him; then he would scamper off to some chosen spot, jumping in the air and whisking his stumpy tail in great glee as he ran. He would sit up on his haunches, hold the cooky in his paws, and nibble away

at it like a squirrel with a nut, frequently cocking his head on one side and licking his chops in a most comical manner. As Peter was free to go and come as he pleased, he would often wander off to the woods near the farmhouse to spend the day, always returning at night. Finally, one bright day in October he failed to return and his mistress was almost heartbroken for fear that he had been killed or trapped, and all winter long she mourned her pet.

One fine April morning as Dorothy and her grandfather were walking along the road she noticed a big red woodchuck sitting on a stump in a field. The little girl called her grandfather's attention to the animal, and asked him if he didn't think it looked "just like Peter." "Perhaps it is Peter," he replied. "Call him and see." Stepping close to the stone wall beside the road she waved her hands and called: "Peter, Peter! Come here, Peter!" For a minute or two the big red woodchuck looked at the little girl with his head on one side and then, scrambling down from the stump, he came running across the field; sure enough it was Peter, safe and sound, and glad indeed to see his little mistress after his long winter sleep.

Dorothy was overjoyed at his return, and hugged and kissed him, and danced about, and Peter seemed to be fully as glad and delighted himself. He rubbed his nose against her, frisked about, and made queer, grumbling little barks in his throat. Peter was carried home in triumph, and was fed and petted enough

to make up for all the time he had been away. That afternoon Dorothy's grandmother got out her baking tins and rolling-pin, and the moment that Peter heard the familiar sounds he started up, ran to the kitchen door, took his old place again and waited, begging for his cooky. He had not forgotten what baking day meant during his long sleep.

One day Dorothy's grandfather found that his vegetables had been eaten off, and, as Peter had never been known to go near the garden, they thought that some wild woodchuck had made his home close by. That night a trap was set, and the next day, when the trap was visited, there, caught fast by one leg, was poor Peter.

His leg was broken, and he moaned and groaned in a most pitiful way while it was being washed and bandaged. He was put to bed in a cosy nest in a basket, and was petted and soothed and cared for like a sick baby.

After a long time Peter was able to get about as well and lively as ever, but he had learned a lesson, and never again showed any desire to steal into the garden.

OTHER MARMOTS

Very similar to the woodchuck in appearance and habits are the Yellow-Bellied Marmot of the Rocky Mountain region and the "Whistler," or Hoary Marmot, of the Northwest. Both these and the woodchuck vary greatly in color, and the woodchuck is

found in various shades of grizzly gray, brown, tawny or red, or even coal black.

In Europe and Asia several species of marmots are found, the best known being the "Bobac," which lives in immense colonies in Asia, and the common or true "Marmot," found over both Europe and Asia.

Prairie-Dogs

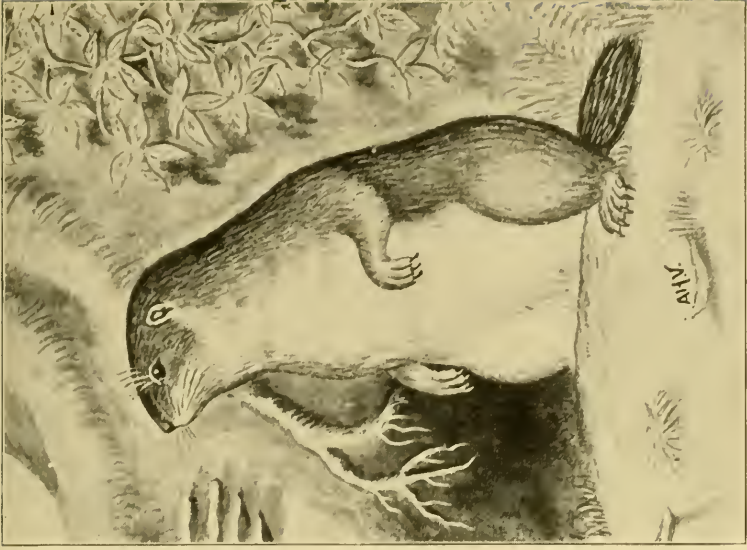
Very different in many ways are the prairie marmots or prairie-dogs of our western plains. While in general form and appearance these creatures somewhat resemble woodchucks, yet their habits and fur are quite distinct. Whereas true marmots have a small, broad, flat nail on the "thumbs" of the forefeet, the prairie-dogs have a well-developed nail, and the other toes are armed with strong, hooked claws. The woodchuck has long, coarse hair, but the prairie-dogs have short, close hair, and the tail is much shorter and smaller than that of the other marmots. Prairie-dogs live in large colonies, sometimes covering many miles with their burrows, so that a person may travel for hours through these vast "dog-towns," the little mounds about the holes extending as far as the eye can see, and every one surmounted by a little animal sitting bolt upright at the mouth of his hole, with his fore paws folded on his breast or hanging down. Unlike the silent woodchuck, the prairie-dogs keep up an incessant sharp barking—on which account they have received their popular name—and at the least sign of danger ducking like a flash into their burrows. The

mounds of earth thrown out by these busy and industrious creatures often contain several bushels of dirt, and to still further increase their height for observation purposes, the little animals scrape the surrounding dirt onto the mounds. The prairie-dogs prefer sandy, gravelly, or sterile soil, and often locate in such barren regions that one cannot imagine how so many animals can subsist on the scanty vegetation where water is entirely wanting.

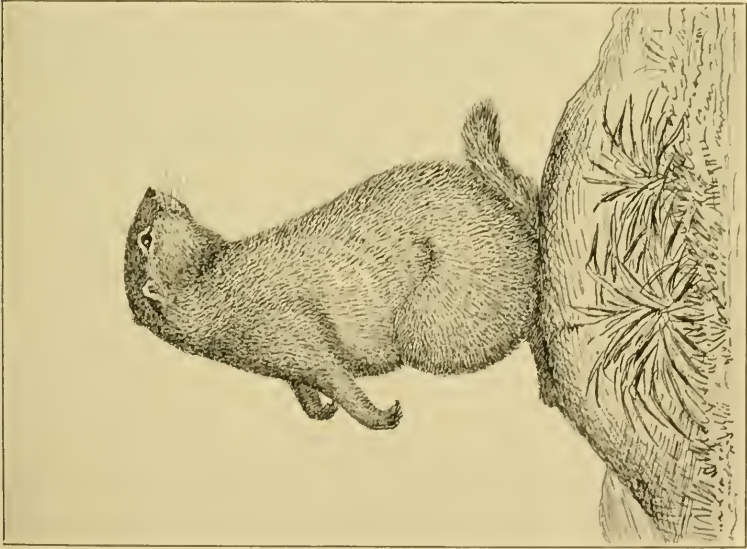
Prairie-dogs are even more alert and watchful than woodchucks, and it is very difficult to kill or capture them. When taken fully grown they are hard to tame, and remain savage and intractable, but when taken young they are readily tamed, and become as thoroughly domesticated and docile as any animal.

In the same colonies with the prairie-dogs, owls and rattlesnakes are often found, and a great many stories have been written stating that these creatures dwell in peace, as a sort of "happy family," with the marmots. This is not the case by any means; both owls and snakes are enemies to each other and to the prairie-dogs. The owls devour the young snakes and young marmots when they can get them, while the snakes prey on the marmots and owls alike. But as all three creatures live in burrows, and in sandy, open districts, they have a common interest in the colony.

Prairie-dogs in captivity require practically the same food and care as the common woodchucks, and the directions given for the latter will serve equally well for prairie-dogs.



WOODCHUCK.



PRAIRIE-DOG.

Canadian Porcupines

Another large American rodent which may be kept in captivity, though it can scarcely be classed as a "pet," is the Canadian Porcupine. This clumsy, odd-looking creature has a surly, unsociable disposition, and never becomes thoroughly docile and tame, although it thrives well in captivity. The common porcupine feeds on all sorts of vegetables, corn, young shoots, and bark and climbs tall trees in search of buds, leaves, and bark. He is mainly nocturnal in habits and is not an interesting or attractive creature. Porcupines may be caught in traps or their young may be taken from a "den" among the rocks and ledges where they live, but they are only interesting as curiosities and are hardly to be recommended to pet lovers. If a porcupine is kept in captivity it should be remembered that he is a born climber, and although so sluggish in his motions and apparently so clumsy, yet he can climb any tree and will get out over a wire-netting fence as easily as a squirrel.

If a large cage with a top cannot be provided, these animals should not be kept; although they are sometimes seen chained to a post like a dog or a bear, this is a cruel and inhumane method and should never be followed. Unless you can keep captive animals in as good condition as when wild and just as happy and contented, do not keep them at all, but confine your pets to domesticated species, such as rabbits, guinea-pigs, and similar animals whose ancestors for many

generations have been reared in captivity, and which are dependent upon man for protection and care.

Armadillos

These remarkable creatures are not rodents, but some of their habits are so much like those of true rodents and their care is so similar that they may be properly included in the present chapter. There are various species of armadillos, the largest, known as the "Giant Armadillo," being 4 or 5 feet in length, while the smaller species, such as the "Six-Banded Armadillo," and the "Three-Banded Armadillo," are less than 2 feet in length. All the members of the family are easily recognized by the peculiar horny "shell" or armor within which the animal is enclosed. This hard carapace is movable and jointed, and when disturbed the odd creatures roll themselves into a ball with the armor completely protecting them from injury.

In their native state the armadillos are mainly nocturnal and live in holes or burrows, which they dig very rapidly by means of their strong, hooked, front claws. In confinement they are quite lively during the day, and burrows are not necessary. When wild, armadillos eat all sorts of vegetable and animal matter, and many of the species eat carrion, the Giant Armadillo even burrowing into graves to reach the bodies of the natives. Wherever they are found the armadillos are considered excellent eating and are hunted and trapped by the natives. The armadillos are natives

of tropical America, and one species extends as far north as Texas.

Armadillos in captivity thrive well on bread, boiled eggs, raw meat, poultry heads, mice, and insects, and they will also eat many kinds of fresh vegetables, fruit, etc.

They are very easily cared for, require little attention, and do not require a large cage, as they may be allowed perfect freedom indoors for several hours daily. If kept out-of-doors in warm weather they should be confined in an enclosure, with a strong netting floor covered with a foot or so of sandy earth, and the upper edges of the enclosure should be covered with an inwardly projecting roof or ledge, at least 6 inches wide, to prevent the animals from climbing out. Although armadillos do not climb in a wild state, yet they do not hesitate to scramble up wire netting or any other rough object when in confinement.

These animals are quite intelligent and are easily and quickly tamed. They become quite affectionate and learn quickly to answer to a name or call and thoroughly enjoy being petted or fondled. Moreover, armadillos are perfectly harmless and cannot inflict injuries save by scratching with their claws, and as they are so easily tamed and become so gentle they seldom attempt to scratch or show ill temper. In many ways these odd animals are most desirable pets, and, in fact, I do not know of any unusual pet which is to be more highly recommended for interest, docility, and ease of care, and any boy who can secure a pet armadillo is fortunate indeed.

CHAPTER VI

RATS AND MICE

TAME RATS AND MICE

WHITE mice and white rats are often kept as pets, but they are not nearly as popular nowadays as a few years ago. Although they become very tame, and are usually gentle and affectionate, they are by no means as interesting or desirable as many other tame animals. Rats and mice always smell disagreeably, and with the very best of care it is impossible to entirely overcome this "mousy" odor of these rodents and of their quarters. Many generations of breeding have produced the numerous varieties of white, piebald, and tortoise-shell mice and rats, but their natural character has been little changed: They are not particularly attractive, for regardless of color or docility they always look like rats, and the natural aversion of many people to these animals cannot be overcome.

The common brown or black house rat or the ordinary little brown mouse can be tamed and domesticated and, as a rule, they are just as intelligent as the fancy varieties, and yet few people would care for these animals as pets. Tame rats and mice may be taught a number of tricks, but they are no better for this

purpose than many birds or animals which are far more attractive and desirable.

Of the two I think the mice are preferable to the rats. They are cleaner in habits and require less room and are, as a rule, more docile. Rats are always treacherous and are likely to bite their owner without warning, and the wounds inflicted by their teeth are always dangerous. Rats, moreover, are well-known carriers of disease, and where there is any contagious disease it is likely to be transmitted by rats or mice. Even if tame rats are kept in cages and isolated some wild rat is likely to carry disease to them, and in places where bubonic plague or cholera is epidemic, rats are now known to spread these terrible diseases from place to place.

CARE, HOUSING, AND FEEDING

Rats and mice are easily kept and do not require a great deal of care. Small wire cages with a nest basket or compartment are suitable for these creatures, but the floor tray should be easy of access and should be cleaned and scrubbed daily. The sleeping compartment should be filled with soft rags, cotton, or tow, which the animals will tear up and form into a nest. Water should always be provided, and the food should be given in small dishes and only enough to satisfy the rats or mice should be fed at one time, although a dish of dry corn, wheat, or small nuts may be kept in the cage at all times for the animals to nibble at between meals.

Rats and mice delight in exercise, and branches and perches should be provided as well as swings. Wheels are often placed in the cages for rats and mice, and the animals often whirl around and around in these contrivances. They are not desirable, however, for the long tails of the rodents often become injured or broken in the wheels. Swings will afford all the exercise required, and even branches or perches will give the pets ample opportunities to run and scamper about.

Tame rats and mice will eat almost anything and everything just the same as wild rats or mice, but they should not be given everything they will eat. Dry bread crusts, grain, corn, green food, vegetables, and fruit should be their diet, and in warm weather corn and nuts should be fed sparingly. Meat should never be given or your pets will become vicious and devour one another. Insects may, however, be given from time to time, and nuts, especially hickory-nuts and filberts, may be fed freely in winter-time and sparingly in summer. A good-sized piece of wood, preferably a piece of green wood with the bark on, should be left in the cage at all times for the animals to gnaw. If the rats do not have something to gnaw on their teeth will grow abnormally long and will eventually kill them.

Clean sawdust sprinkled with disinfectant should be spread over the tray of the cage. Care should be taken in using a disinfectant, as many of these substances are very poisonous to animals. Oil of eucalyptus is the safest and best compound. This should be diluted with water—about one teaspoonful of the oil to a cup

of water—and sprinkled on the sawdust and all portions of the cage with an atomizer.

When the mother rat or mouse has young the male should be taken away and placed in another cage, as otherwise he will kill or devour his young family. It is claimed by some that this is abnormal, and that if fed sufficiently the male will not devour the young. This is true in the case of many animals, but my experience is that rats and mice will become cannibals even when given all the good food they will eat.

Do not overfeed; give just as much as they will eat at one time and no more, and if you find any food remaining after an hour or two, reduce the next meal accordingly. Do not feed soft, mushy, or sloppy foods; nature gave rodents teeth for gnawing, and unless they are used for the purpose intended the animals will become sickly and their teeth will become too long.

There are numerous breeds or varieties of tame rats and mice, but each belongs to one of the two species, and has been produced from wild brown forms by selecting and breeding. Pure white animals with pink eyes are the commonest variety. Others are white with brown or black spots, while others are “tortoiseshell,” or have several colors combined. Still other varieties are pale-gray, others black with white markings, and others yellow or orange. The so-called “waltzing mice” are merely animals with a brain disease which causes them to run in circles or in an erratic manner. They were originally produced in Japan and may be bred easily in confinement. They are amusing,

but to many persons their affliction seems more pitiful than interesting.

WILD MICE AND RATS

The commonest of all rats and mice are the brown animals, which often prove such a pest in our houses and barns. These are foreigners and were introduced from Europe with the earliest settlers. The rarer Black Rat is also European but is so much weaker and less pugnacious than the brown rats that in most places it has been exterminated by them.

The common brown rats and mice are such a nuisance and so disgusting in habits that many people are averse to any rat or mouse, and have quite overlooked the fact that a great many species found wild are very handsome and attractive. Some of the wild wood and field mice and rats are exceedingly graceful in form, beautiful in color, and interesting in their habits.

The common White-Footed Mouse, known also as the Deer-Mouse, Wood-Mouse, or Field-Mouse, is a very lovely and lovable creature. In color this dainty fellow is warm fawn, reddish-buff, or even golden, with a darker back and snow-white feet, legs, and lower parts. The ears are large, the eyes big and soft, and the tail quite thickly clothed with hair. Another very pretty species is the Harvest-Mouse, a dainty little creature less than 2 inches in length, with a prehensile tail, which it uses much in the manner of an opossum or monkey. These pretty creatures build nests in



RATS AND MICE.

1. Harvest Mouse. 2. White-Footed Mouse. 3. Pocket Mouse. 4. Jerboa.

grass or among grain or take possession of an old bird's nest. They are easily tamed and become very affectionate and have very little of the objectionable mouse-like odor.

Among the larger rats there are also many attractive wild species which make far more desirable pets than the tame white variety. The Wood-Rat of the South and West is a beautiful species, with a well-furred tail. This animal is bright tawny or golden-yellow above, with pure white breast, throat, feet, and belly, and has very soft, large eyes. The wood-rats live in trees and make large, bulky nests. They are as lively and attractive as squirrels, and run and jump from tree to tree with the utmost facility. In many places they are considered excellent eating, their flesh being as white and well flavored as that of a rabbit or squirrel.

OTHER RAT-LIKE CREATURES

Many animals related to rats and mice have the power of jumping for long distances, and have the hind feet and legs wonderfully developed so that they resemble miniature kangaroos in appearance and habits.

Jerboas

The common jerboas of Africa have large ears, small front feet, and enormous hind feet, and travel almost entirely by hops and skips, using their tufted tail as a fifth leg. They are interesting, pretty creatures and

easily domesticated. We do not need to look to the Old World for representatives of these kangaroo-like mice, however. In the United States we have several wild species, the commonest being the Jumping Mouse, which is found from the Atlantic coast to the Pacific, as far north as New England and Canada. This odd mouse has very powerful hind feet and a long tail, and when alarmed makes off with great leaps of 8 or 10 feet at a bound. Ordinarily, however, the little fellow moves about on all fours like ordinary mice. The Jumping Mouse lives mainly in the woods and sleeps and breeds in cosy grass nests in hollow trees or in burrows in the earth. It is easily tamed and makes an interesting pet.

The Pocket-Mouse

A still more remarkable species is the Pocket-Mouse of the Southwestern States. This remarkable animal is fawn-colored above and white below, with white feet and a white stripe on the hips. The fur is as fine and soft as silk, and the eyes are very large and lustrous. The head is abnormally large—or the body abnormally small—and this with the enormous hind legs and diminutive front feet and long, tufted tail gives the tiny creature a very droll and unusual appearance. This animal is very easily tamed and becomes exceedingly affectionate. Unfortunately, he is nocturnal in habits and spends a good deal of his time sleeping during the day. If, however, he is fed in the daytime and food is *not* left in his cage at night he will very soon learn

to sleep at night and keep awake in the day like ordinary animals.

The true Kangaroo Rats of Australia are not rats at all but marsupials, and are related to the kangaroos. They are about as large as rabbits and make very attractive and interesting pets. They feed mainly on roots and vegetables and do not gnaw like true rats.

Various other creatures related to the rats are found in the United States, among them being the odd Pouched Gophers, or Pocket-Rats, curious animals with short tails, strong, long-toed front feet, and remarkably powerful teeth. These animals grow to large size—sometimes a foot in length. Their cheeks are provided with enormous pouches in which they carry a supply of food to their burrows. As they are always hungry and are continually burrowing about and devouring roots, they prove very destructive to vegetation in many places. In some parts of the West and Southwest they are a serious pest, and thousands of them are killed yearly by the farmers. Although so destructive, they have interesting ways and may be kept in captivity.

The Hamster

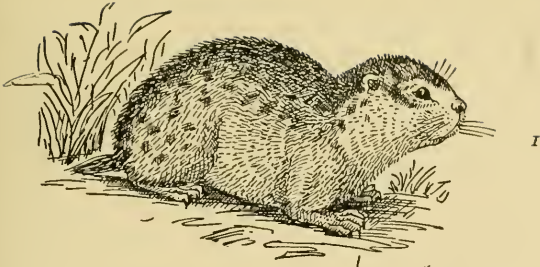
Somewhat similar in habits to the Pouched Gophers is the hamster of Europe and Asia. This animal is about 10 inches long, with a short tail. The color is rich yellowish or tawny-brown, with black, yellow, and red markings on the head and with the lower parts black. The coloration is very striking, and the fur of

the animal is used a great deal for lining coats and ladies' wraps.

The hamster builds roomy, underground galleries and in these stores great quantities of grain, roots, and other food. Like our common woodchuck, the hamster sleeps through the winter and wakes in the spring with a healthy appetite, which it at once satisfies on the store of provisions it has so wisely provided. Although irritable and pugnacious when wild, yet the hamster is easily tamed and does well in confinement.

The Lemming

The remarkable lemmings of the northern portions of Europe, Asia, and America are also related to rats and mice but are very different in appearance. They are quite small—only 5 or 6 inches in length—but they are so exceedingly numerous at times as to overrun the entire country and prove a menace to everything in their path. When migrating or when travelling from the mountains to the lowlands, the lemmings at times appear in vast multitudes. They proceed straight on their course, regardless of rivers, lakes, or other barriers. They are insensible to danger and invade houses and towns, devouring everything edible which they find, and passing in an irresistible army until they reach the sea. On their marches thousands are killed by birds of prey, animals, and men, but they are so numerous that there seems to be but little diminution in their numbers. Such tidal waves of animals only occur occasionally and are due either to an abnormal



1



2



3

VARIETIES OF RODENT.

1. Lemming.

2. Hamster.

3. Pouched Gopher.

increase in the numbers of the animals or a scarcity of food in their native haunts or to both causes combined. The great numbers of the animals killed on the march decreases the hordes until the balance of nature is re-established, and the lemmings retire to oblivion for several years.

In color the lemmings are dappled with chestnut, black, gray, and buff, with a white collar, tail, and feet. In some species the coat becomes entirely white in winter. The fur is dense, soft, and silky and reaches well over the feet and toes. The lemmings, being arctic animals, are very hardy. They feed upon herbage, grains, roots, and insects, and are very easily kept in captivity. They soon become tame and gentle and make interesting and desirable little pets.

Any variety of the wild mouse may be easily captured in box traps or caught in their nests, and any boy who lives in the country or near woods and fields can obtain interesting pets in this way.

After you have kept some of the cunning and really pretty wild mice or wood-rats you will wonder why any one ever keeps the uninteresting and commonplace ones.

CHAPTER VII

CARNIVOROUS ANIMALS

RACCOONS AND THEIR COUSINS

THE carnivorous or meat-eating animals include a great many species and families, many of which are far too large, savage, or dangerous to be kept as pets. Nevertheless, many of the carnivora make docile, gentle pets, and the common dog and cat both belong to this group. A great many of the carnivorous animals which when fully grown are savage and dangerous are very gentle and playful when young; and even young tigers, lions, and leopards are interesting, playful, and harmless creatures until they are pretty well grown. Such creatures cannot be recommended for pets, but a great many of the smaller carnivorous animals make splendid and extremely interesting pets.

Some of these animals are very odd and have amusing habits and ways, while others are very intelligent, learn many tricks readily, and are just as desirable companions or pets as dogs, cats, or rabbits. Carnivorous animals are found in nearly every country, and a great many of them are natives of America.

One of the most common and most readily domesti-

cated of American carnivorous animals is the raccoon. This well-known creature is found throughout the United States wherever there is forest growth and, although continually hunted and trapped, is so intelligent, so wary, and so well able to look out for himself that the species is still fairly numerous in nearly all parts of the country, even near cities or in thickly populated districts. "Coons," when taken fully grown, are, like most wild animals, very cross, irritable, and vicious in confinement, although with kind treatment and patience they may often be thoroughly domesticated. Young raccoons, when reared in confinement, are as gentle and docile as kittens, and learn to perform many amusing tricks, to come when called, and to follow their master about as readily as a well-broken dog.

Raccoons make their homes in hollow trees, in old crows' or hawks' nests, or even among rocks, or at times in burrows in the earth. If you can locate a coon's nest in winter by following the tracks on the snow, it is comparatively easy to get the young ones in the spring, but otherwise it is a very difficult matter to find the home of one of these animals. If raccoons are abundant some local hunter or a farmer can usually procure young ones if well paid for them, and oftentimes they may be found in captivity and for sale at the dealers'. Several firms make a specialty of live wild animals and can always furnish many interesting and desirable pets. Coons are almost always carried in stock by these dealers and are far from expensive.

CARE AND HOUSING

Coons should be kept in large, stout, roomy cages until thoroughly tame and tractable. They are powerful creatures for their size and will work steadily for hours at a time to pry apart loose wires or bars or to enlarge a small opening; hence care should be taken to have a cage that will withstand all their attempts to escape. Wood will not answer except for young raccoons, for a full-grown coon will chew and bite through a stout wooden bar or board in a very short time. Strong, coarse-meshed wire netting is the best material to use, and it should extend well into the ground if placed out-of-doors. Although raccoons do not burrow or dig naturally, they can excavate a hole rapidly and will dig under an ordinary fence or wall or beneath the netting of a cage unless it runs at least 18 inches below the surface. The top of the cage should be roofed over with netting and covered with a water-proof roof, and a scraggly tree or stump should be placed within the cage for the animals to climb on.

If the cage is to serve as permanent quarters for the coons it should be at least 8 feet square and 6 feet high, but if merely intended as an enclosure for the animals until they are well grown it may be much smaller.

Coons are very restless, curious, busy creatures and are incessantly investigating every crack and crevice or any new or strange object which they see, and this habit makes them very interesting and amusing. A

bright-colored wooden ball will sometimes amuse one of these animals for days, and if a piece of corn or a bit of meat is placed in a deep bottle and given to the raccoon you will have no end of fun watching the little chap trying to extract it.

FEEDING

Raccoons eat almost any sort of animal or vegetable food. They are very fond of green corn and "roasting ears," of many fruits, such as apples, peaches, pears, etc., of young birds or poultry, of eggs, and of any kind of fresh meat. They are extremely fond of insects of all kinds, of frogs, turtles, fish, and crabs, and will dig under rocks and fallen trees in their search for land-snails.

Tame coons often equal any cat in their ability to capture rats and mice, but they are also sworn enemies of poultry; if you have a tame coon and keep chickens or ducks be sure that your pet cannot reach them or you will regret the day he came into your possession.

Raccoons have a habit of soaking their food in water and will even place opened oysters in water before eating them. So pronounced is this trait, that in Germany they are known as Washing-Bears, and their scientific name of *Procyon lotor*—meaning a "washer"—was earned by this odd trick. No one seems to know its cause. It is not due to a desire for cleanliness nor to soften the food, for coons have

splendid, stout teeth, and such a tender object as an oyster cannot require softening. Probably it is an instinct which originated with the remote ancestors, who may have subsisted mainly on fish. They are fond of fish and can catch them adroitly. Their method is to sit or squat motionless beside a pool or pond, and when a fish appears to scoop him quickly from the water with a lightning-like sweep of the front foot.

Pretty nearly anything and everything that tame coons will eat is good for them, but raw meat has a tendency to make them cross, and unless they have a great deal of exercise their coats will become poor; and if overfed they will become terribly fat. A healthy coon should be well rounded and plump but not a helpless ball of fur.

Although raccoons are closely related to bears, their appearance and habits are very different. The markings on a raccoon's face give him an odd, quizzical look, and the thumbs and forefeet are used almost like hands. A coon sitting on his haunches and examining some object held in his hand-like paws seems almost human, and there is no question but that they possess intelligence far above that of most animals.

While our common raccoons are very interesting and attractive pets, some of their cousins are even more desirable. The tropical Crab-Eating Raccoons of South and Central America are somewhat smaller and thinner than our northern species, but are easily tamed and make just as good pets.

THE RACCOON-FOX

Somewhat resembling the raccoon but with a form more like a fox, is the raccoon-bear, or raccoon-fox of our Southwestern States. This pretty little animal is smaller than the raccoon, with a much slenderer and more graceful form. Its color is dun, or grayish-brown, with a black streak or collar on the neck, and the long, bushy tail is ringed with alternate stripes of black and white.

In Mexico this animal is known as *tepe-maxtla*, or *caca-mixtli*, meaning Bushcat or Rushcat, and is a favorite pet of the natives, for it is companionable and gentle and keeps the houses free from rats, mice, and vermin. Although naturally a southern animal, it is found as far north as Oregon and Indiana, and specimens have even been taken in Ohio. In California it is quite common, and in the early days the gold-miners frequently kept the little creatures in captivity. It is naturally a tree-dwelling animal and makes a moss-lined nest in a hollow tree or other cavity, often using some hole or crevice in the garret of a building or outhouse. As the raccoon-fox has a peculiar habit of gnawing the wood around its hole, its retreat can often be found by the chips lying on the ground beneath it. Not at all a timid animal, it frequently enters camps, buildings, or houses in search of food. It is very easily tamed and becomes so sociable and familiar that it seems more like a kitten than a wild animal and will play and frisk about, feed from

the hand, and follow its master. Even when captured fully grown, it soon becomes domesticated and docile and is altogether one of the best pets one can find.

In its wild state the *caca-mixtli* feeds upon small birds, animals, and insects, but when tamed it will eat any kind of animal food and many kinds of vegetables, as well as cake, fruit, eggs, and fish.

It breeds readily in confinement and usually has four young in a litter.

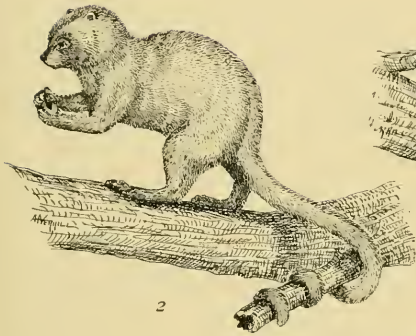
THE COATI

Another odd and interesting cousin of the raccoon is the coati, or tejon, of Mexico and South America. This animal is about the size of a raccoon, of a reddish-brown above, and yellow or orange below, and with a long, tapered, bushy tail, ornamented with alternate dark and light rings. The hind quarters are heavy and resemble those of a bear, the front feet are remarkably flexible and hand-like. The most remarkable part of the coati's anatomy is the nose. This organ is greatly elongated and sensitive, and can be bent and twisted, extended, contracted, or made rigid, at will. There are two species of the coati, one found in Mexico and Central America, the other in South America, but they are very similar in habits and appearance. Unlike the raccoon, these creatures live together in troops or bands, although the old males often become solitary and live by themselves, a fact that has led many people to assume that there are several distinct species.

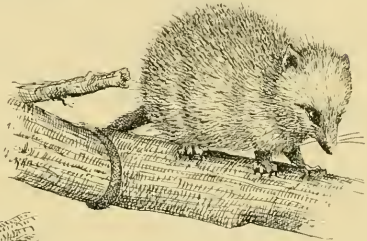
The coati is very easily tamed and becomes intensely



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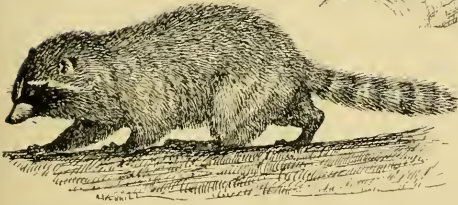
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RACCOONS AND THEIR COUSINS.

1. Coati. 2. Kinkajou. 3. Opossum. 4. Raccoon-Fox 5. Raccoon.

affectionate and devoted to its home and master. It is the most interesting and amusing pet imaginable and keeps one constantly entertained by its antics. Probably no animal in the world is more inquisitive and its incessant investigation of everything in the vicinity continually involves it in difficulties.

In all its actions the coati's nose is a matter of vast importance. With this wonderful organ it explores every nook, crevice, and cranny, smells of any object that arouses curiosity and, regardless of consequences, pokes it into anything and everything. This trait is really a nuisance if the creature is allowed to roam at large, for nothing is beyond its reach; it will climb, jump, or crawl into places that you would think impossible of access.

The coati is a born tease and if kept where there are dogs or cats it will worry them into a perfect frenzy. Moreover, the coati does not know what fear is and, instead of avoiding the anger of its victims, will stand its ground or rush blindly at the enraged cat or dog regardless of consequences.

A coati kept in confinement some years ago was allowed perfect freedom at times and some of its experiences and actions were most amusing. Anything hollow would instantly excite its curiosity: the dinner bell was at once seized and turned over but was altogether too simple an affair for the busy creature to spend time on. A round sleigh-bell set it wild with excitement, but as it could not get either nose or paws inside and could make no impression with its teeth, it

was soon abandoned. A tobacco-pouch and pipe soon aroused the curiosity of Miss Coati and, holding the first between her paws, she dug her nose into the contents and with wonderful rapidity rooted the tobacco about until every shred and fibre was separated; but finding nothing of further interest here she turned her attention to the pipe. Without the least hesitation she plunged her delicate nose into the bowl, but neither this nor the tobacco seemed to disconcert her in the least. She soon espied the cat, which, having just finished a nap, was yawning and stretching herself. Instantly the coati rose on her hind feet, threw her arms around the cat's neck, and plunged her tobacco-covered nose into the strange cavity presented by tabby's open mouth. The reception which this intrusion received was a great surprise and, with a most pained and grieved expression, she retreated into a corner of the room and, taking her nose in her paws, drew it between them, sneezing violently meanwhile.

The lesson was soon forgotten, however. In a few moments she was busily engaged in satisfying her curiosity again. Climbing onto her master's lap she noticed the ticking of his watch, and the ever-useful snout was plunged into his vest pocket. Failing to extract the timepiece in this way, she dug excitedly with her feet and, finding this of no avail, placed her ears close to the sound and listened quaintly to the ticking. At last, quieting down, she dozed off to sleep in her owner's lap and he buried himself in a book. Suddenly, aroused from his reading by the sound of

tearing paper, he looked up just in time to discover that the coati had quietly extracted a pocket diary and a five-dollar note from his pocket and was busily engaged in tearing the note into small shreds.

To determine if the coati could drink from a deep, narrow vessel, a mug containing a little milk was given her. Instantly she turned the proboscis up to the forehead and licked the cup dry without even wetting her nose. Quite as easily the nose could be turned down until it actually pointed backward under the lower jaw, and if placed out-of-doors on the lawn or in the garden the creature would rapidly root and plough up the ground with her snout, using it exactly like a hog; and whenever a worm or insect was found the nose would be curved up over the forehead and the object seized and devoured greedily. Her tail was almost as useful as her nose. If, when tied to a chair or table, an egg was placed on the floor beyond her reach, she would turn her tail toward the object, curve the tip into a hook and, holding the tail with her feet, would gently swing it around in a semicircle with the egg safely held in the curved tip until within reach of her paws.

In a wild state, or in captivity, the coati will eat and drink almost anything. Birds, animals, fruits, insects, fish, eggs, reptiles, vegetables, sweets, grubs, worms, and, in fact, any edible material, is equally relished by it, and in extracting birds' eggs from holes and withdrawing insects from crevices in the bark the prehensile nose is used to great advantage.

KINKAJOUS

Even more interesting is the strange creature known as the kinkajou of South America. This odd animal is also known as the potto, matilla, and fruit bear and is such a mass of contradictions and paradoxes as to be a sort of animal puzzle. Although classed among the carnivora, the teeth of the kinkajou are more like those of an herbivorous creature. Its hands have no opposed thumbs and the "fingers" are webbed for nearly their whole length; yet it uses these members for hands in a most dexterous manner. While the heels of the hind feet are well raised, it walks on the soles of the forefeet. It can feed itself equally well with either its front or hind feet and can even hold food in a hind foot and break it in bits and carry the pieces to its mouth with a front foot or vice versa. Its tail is prehensile and, with the tip coiled around a branch, the kinkajou can swing or hang head downward as well as any monkey. Its face is flat and cat-like, but the tongue is so long, flexible, and slender that with it the kinkajou scoops honey from the nests of wild bees or extracts ants from their nests. In fact, the kinkajou may be truthfully said to possess six hands, for either its feet, tail, or tongue can be used more skilfully than the hand-like feet of many other animals.

When fully grown the kinkajou is a little larger than a good-sized cat and is light yellowish-brown or orange-yellow in color. The tail is long, round, and muscular, and both body and tail are covered with

thick, soft, close, woolly fur. It is a tree-dwelling animal and spends most of its life high up in forest-trees, but can run nimbly on the ground and can descend a tree head first without the least trouble or climb up tail first with equal facility. It is chiefly nocturnal when wild but in captivity seems to be as lively and wide awake in the daytime as at night. A most wonderful contortionist, it can roll itself into a perfect ball with its tail coiled about its body or can turn itself into a spiral corkscrew without inconvenience. Its food consists of ants, bees, insects, honey, fruit, birds and birds' eggs, small animals, snakes, lizards, etc., and when domesticated it will devour anything in the shape of fruit or meat.

Although quite savage and courageous in its wild state, yet in captivity the kinkajou is most docile, gentle, and affectionate, even when captured fully grown. It is very intelligent and learns many amusing tricks.

While living in Central America I had one of these odd creatures for a pet and found it most entertaining and interesting. The little chap was brought in by a native wood-cutter when about half grown and at once won my affection by clambering up onto my shoulders and curling its tail about my neck in a most lovable manner. It never showed any inclination to scratch, bite, or snap, and from the very first would eat from my hand or climb into my lap and sleep contentedly. It was always happy, bright, and good-natured, and although never tied up or confined it

showed no desire to escape, even when perfectly free out-of-doors. It would sit on its haunches and beg for tidbits with a queer little plaintive squeal but aside from this would never utter a sound. Any new or strange thing would at once attract its attention, but after the unusual object was investigated thoroughly it would excite no further interest. The facility with which it used all or any of its four feet, its tail, and tongue was most remarkable. Its favorite food was bananas, and if given one of these fruits, it would hold it in one front paw, peel the skin neatly with the other, and eat the fruit with dainty bites and evident relish. If before one fruit was consumed another was handed to the creature, it would hold this in its tail until the first banana was devoured and would then pass it to its paws in a coil of the tail. Sometimes the fruit would be held in the tail and peeled with one foot, and at other times in one hind foot, peeled with a front paw and broken in pieces and carried to the mouth with the other front foot. At other times the little fellow would hang by its tail, curl its head up on its breast, hold a fruit in its hind feet, break it apart, and carry it to its mouth with the front feet. It was very neat and clean, and invariably after eating would pick up all the parings, skins, or crumbs, would gather them in a neat pile, and poke them into some crevice out of sight. It was so adept with its tail and tongue that it was next to impossible to place things beyond its reach; smooth walls or high shelves it would scale with apparent ease if there was the least roughness or projec-

tion which it could grasp with its sharp claws or its tail; and so powerful was the grasp of this latter member that I have seen the kinkajou coil it up, place it flat against a slightly rough board, and actually lift itself off the floor. Its climbing ability and curiosity proved fatal to our kinkajou in the end. It was placed in a large, roomy outhouse during the night. On a high shelf in this building a jar which contained some preserves had been left through the oversight of a servant. The following morning the poor little kinkajou was found very sick and the jar of jam was scattered in a thousand pieces on the floor. Evidently the animal had pulled down and broken the jar and had eaten the jam containing pieces of the broken glass. Although we did everything possible to cure it we were unsuccessful. It died the same day.

THE OPOSSUM

In many parts of the United States the opossum is a very common animal and is much hunted for its flesh and skin. Opossums make very good pets and have many odd and interesting habits. They are easily captured and tamed, are gentle and docile, but unfortunately sleep during most of the daytime. Opossums feed mainly upon fruit and insects, but they will eat any kind of meat, eggs, birds, fish, or reptiles. Their ability in climbing and their strong, prehensile tails are interesting, and if a tree or some branches are placed in their cage they will exhibit their ability to

climb and swing from place to place to great advantage. Several species of South American opossums carry their young hanging to the mother's tail as it is carried over the back, but our common species carries its babies in pockets or pouches on the abdomen. Some of the South American species are very small, scarcely larger than a mouse, while others are even larger than the northern species. One kind of opossum found in South America is known as the Water-Opossum, from the fact that it lives in the water most of the time. This queer animal swims, dives, and catches fish with the ease and ability of an otter or mink and makes its nest in holes in the banks of rivers or lakes.

Although I have included opossums among the carnivorous animals, they are very different from most other meat-eating creatures and belong in a group known as marsupials. This group includes all animals which carry their young in pouches, and among them are creatures which are strictly carnivorous, others which are herbivorous, and others which are insectivorous. All four-footed animals found in Australia, with the exception of the duckbill, echidna, and the Wild Dog, or dingo, are marsupials. Among them are the kangaroos, koalas or native bears, wombats, bandicoots, ant-eaters, Tasmanian devils, and other queer creatures. In Australia nearly all of these various animals are at times kept in captivity, and the smaller kangaroos, wombats, and koalas make good pets. A great many of the marsupials are nocturnal and are so sleepy in the day that they are not worth keeping

as pets except in menageries or zoological gardens, but the kangaroos or wallabies and some other species are wide-awake and lively during the day. Kangaroos and other herbivorous marsupials are as easily kept as rabbits or hares and feed mainly on hay, grass, and green vegetables, and many of them are very hardy and will stand quite cold weather.

THE BEAR

Among the other carnivorous animals which are kept as pets at times are bears, foxes, and prairie-wolves, or coyotes. Bears when young make very interesting pets and are easily raised. The following story of a boy and his tame bear will illustrate the habits of these animals in captivity:

THE STORY OF A PET BEAR

Ned always had a fine time when he visited his grandfather, who lived in Maine near the edge of the forest, and when he was twelve years old he spent his summer vacation there. One day Ned noticed that some bees in the garden flew toward the woods instead of to the hives, and when he asked his grandfather the reason he was told that these were wild bees who had a "honey-tree" in the forest. Ned was greatly interested, and his grandfather promised that they would look for the store of honey, explaining that they could find it by following the bees, which flew in a straight line. Soon after Ned started out with Dave, the hired man, to find the bee-tree. They found a hollow log

among some rocks, and Ned thought this would be a fine place for the bees to hide honey. Dave knew it was not a bee-tree, but to please Ned he chopped into it. After a few good strokes the log split open, and out rolled a big ball of fur. It quickly unrolled and proved to be a baby bear that winked and blinked in a surprised, sleepy manner.

The boys thought this find a great deal better than honey and, wrapping the cub in a coat, they hurried home as fast as they could for fear the old bear might find them. The little bear was given a cosey home in the wood-shed and a big bowl of bread and milk, which he ate greedily. Then he curled up and went fast asleep. The next day Ned found his pet, which he had named Bee, very contentedly washing his face in the remains of his supper. When he saw Ned he sat up on his haunches and held out his paws in a most friendly and confiding manner. He was full of life and play and rolled over and curled and uncurled himself, and Ned was sure that he could teach him interesting tricks.

Every day Ned played with his pet and by the time his vacation was over the bear had learned to shake hands, to beg for a lump of sugar, to play dead at command, and to turn somersaults. Ned was very anxious to take Bee back to Boston with him so that his friends could see him; but since his father would not consent to take a bear to the city, Ned was compelled to leave him in his grandfather's charge.

Ned's friends were greatly interested in the stories

of the bear, and every one of his grandfather's letters was read and reread, for each was filled with glowing accounts of Bee's antics. One day in November came the startling news that Bee had disappeared. Grandpa had gone to town for the day and had forgotten to fasten the door of the wood-shed, and the next morning the bear was missing. The woods were searched and all likely hiding-places were examined, but no trace of Bee could be found. Ned's grandfather felt very badly over the loss and so, of course, did Ned. All winter he and the boys talked about the matter and hoped that the following year he might find another bear.

Early in April Ned had another letter from his grandfather, and when he read it he danced and shouted, for, wonder of wonders, Bee had been found!

It seemed that Dave had gone to the sugar-camp, about half a mile from the house, to get the log house ready for the sugar boiling. He found the camp half full of drifted leaves, and when raking them out behind a big sugar-kettle he discovered Bee, all curled up snug and warm, enjoying his long winter nap. Dave, greatly surprised, tied Bee securely without waking him, covered him with the leaves, and left him.

When sugar making began a few weeks later Bee was wide-awake and hungry, but he knew Dave and followed him readily to his old quarters. When Ned arrived on his vacation he hardly knew his pet; he had grown into such a big, powerful bear that he had to be tied out-of-doors in the barnyard; but he was still

good-natured and Ned was soon on the best of terms with him again.

Nevertheless, Bee was so big and clumsy and so rough in play that grandpa was afraid Ned would get hurt and suggested that he should sell him to a circus which was coming to a near-by town. At first Ned was unwilling to listen to this, but he realized that Bee was really too big to manage and finally consented. The animal trainer visited the farm, saw Bee, and was very glad to get such a gentle, well-trained bear. Several times afterward, when the circus visited Boston, Ned saw his old pet.

FOXES AND WOLVES

Unlike bears, foxes and wolves are seldom very docile in captivity. Once in a while a really tame fox or wolf may be found, but as a rule they are snappish, treacherous creatures and can hardly be recommended as pets. Wolves are far more likely to become really tame than foxes and prairie-wolves or coyotes. They are often very affectionate and tractable in captivity. In order to domesticate any of these creatures they must be taken when very young and reared by hand. They are not particularly interesting, not half as intelligent as a good dog, and have no particular habits or characters which make it worth while keeping them as pets, especially in view of the time and trouble necessary to rear them successfully.

CHAPTER VIII

DOGS

HISTORY AND VARIETIES

FROM the very earliest times dogs have been kept as pets and companions by man. So ancient is the dog that the most exacting scientific research has failed to trace his origin; the best authorities are undecided as to whether the original dog was merely a domesticated wolf or some other dog-like creature now extinct.

Whatever his original ancestor may have been, the vast length of time in which dogs have been kept by man is attested by the fact that dogs are found in every portion of the world where mankind lives, except in a few oceanic islands, and by the wonderful varieties of form, size, and characteristics found in the species. It seems scarcely credible that the tiny toy spaniel or Pomeranian, the great mastiff and Saint Bernard, the thin and graceful greyhound, the bandy-legged bulldog, the collie, and the numerous other breeds all came from a common ancestor, yet this is undoubtedly the case.

In the dog, man has always found a faithful friend and companion, a trusty guardian, and a useful and willing servant. Long before he learned to cultivate

the earth his dogs helped him to hunt wild animals for food, and even to-day hounds and hunting-dogs are indispensable aids in hunting many kinds of game. When man gathered flocks and herds the dog helped to watch and guard them. When danger threatened he warned his master, and his courage and strength were of untold value in battling with the ferocious wild creatures of the forest and jungle. In many lands and among many races the dog has been used as a beast of burden or to draw sledges across frozen wastes. Still other races use his flesh as an article of diet.

Through untold centuries he has developed in accordance with his surroundings and his mode of life, so that each race or people has gradually acquired dogs best adapted to their needs. But with the progress of civilization and the increase of commerce and intercommunication among distant peoples, the various types have been carried hither and thither, their original uses lost sight of, and new varieties produced by the mixture of breeds, until to-day there are a vast number of breeds, some useful, some ornamental, and some valued merely for their useless ugliness.

CARE AND HOUSING

To describe all the recognized varieties of dogs would require a special volume, and every pet lover who is interested in a special breed should consult a special treatise.

But no matter what breed of dog is kept or for what purpose, the care, management, food, training, and diseases are practically identical and, with slight variations according to the differences in sizes and habits of different varieties, the same directions will apply to all. Most dogs, and especially pet dogs, are given far too little proper attention or care in some ways and far too much in others. It is no kindness to feed a dog on every tidbit and morsel that he desires or to feed him too much or too often. Meals should be regular and at stated times, and a limited amount of food should be given. Washing and combing are all very well and serve to keep a dog clean, healthy, and in good condition, but there is no excuse for pampering, constant fondling, dressing up in clothing, and other ridiculous customs.

Dogs may be roughly divided into two general classes: those kept in the house, such as the lap-dogs, toy dogs, pet dogs, etc., and those kept in kennels out-of-doors. Although many large watch-dogs and hunting-dogs are regularly kept in the house, this method is by no means to be recommended, for it does not induce the best health and condition.

Wherever possible it is advisable to keep large dogs out-of-doors, but if a yard cannot be enclosed so that they can exercise freely or if regular daily exercise is not given them they should not be subjected to the cramped quarters of a kennel. It is absolutely cruel to chain a dog to a tiny, draughty, exposed box or kennel, day in and day out, and if you cannot give

your dog proper exercise or keep it indoors you should not keep it at all.

Kennels may be of any size, from a tiny hut or box just large enough to accommodate the dog, to large, expensive affairs with several rooms or compartments, such as are used for packs of hounds. The principal points to be looked after in providing a kennel are: a sheltered, warm situation that is shady in summer and protected from storms and winds in winter; good ventilation; a tight, weather-proof roof; good drainage, a warm, clean bed, and general cleanliness. Most dogs are very neat and clean in their habits, but if kept chained to a kennel or in a small space they are of necessity compelled to muss up their surroundings, and become dirty, foul-smelling, and diseased.

An enclosure for dogs may be built of wire netting or any form of fence, but where a real enclosed yard or court cannot be provided, the animals may be given ample opportunity to exercise by fastening them to a ring about a long rope or wire stretched between supports. In this way the dog can run back and forth the length of the wire and can move to either side for the radius of his leash, and yet he cannot become tangled up as he often will when chained or tied to a stake or post.

FEEDING

In feeding dogs, regularity is an important matter; most dogs should be fed twice a day, and from one twelfth to one twentieth of their own weight should be

ample for a day's feeding; although the exact amount will vary according to the size, age, and breed, and with the amount of exercise or work the dog has. Although dogs are naturally carnivorous or meat-eating animals, yet in their domesticated state they will generally live in perfect health when fed exclusively on a vegetable diet. Nevertheless, a mixed diet is preferable in most cases, and some dogs will not thrive unless given a great deal of meat. Sweetmeats, candy, pastry, cake, and similar things should not be given or, if fed at all, should be in very limited quantities.

Nine tenths of the common ailments of dogs are digestive troubles, and much of this can be avoided by judicious feeding. Cooked meat, table meat, scraps and dog-biscuit, or similar vegetable food—except potatoes—will form a good diet for many dogs, and the larger kinds, especially those which have plenty of exercise, should be given quite a little meat and should be provided with large bones to gnaw on. Dogs require a certain amount of lime, and the bones furnish this in a better form than any other kind of food; but care should be taken not to feed small, thin, or splintered bones. Many house-dogs, especially the long-haired breeds, have a very disagreeable odor if fed on meat to any extent, and in such cases the diet should be mainly of a vegetable character, with an occasional bone. Milk is very good for small dogs and for puppies, and most dogs are quite fond of it.

While many people consider milk the best possible food for puppies—and it is an excellent food—yet a

mixed diet is just as good; and after they are three or four months old they may be fed like grown dogs, except that they should be fed oftener—three times a day until six months old—and after that twice a day. When milk is fed it may be thickened by boiling oatmeal, wheat flour, or both in the milk; or biscuits, bread, or dog-biscuit may be added to it; but with this diet no meat is required, although bones should be given to gnaw on. The great objection to milk is the cost and the fact that it does not keep well, and for these reasons a varied diet of cheaper and more lasting foods is desirable. Indian meal and oatmeal are excellent dog foods, especially for young dogs. The Indian or corn meal must be mixed with water or broth when cold, and then boiled for half an hour at least. Oatmeal may be mixed with it, or the latter may be used by itself, thoroughly cooked, in the form of a thick mush. Many dogs will not eat clear oatmeal or corn-meal mush but will devour it readily if it is mixed with meat broth, or if meat scraps are boiled in it.

It is best to boil meat on the bones for several hours, until thoroughly cooked and readily removed from the bone. The flesh may then be mixed with other foods, and the broth or soup used in making mush or for soaking biscuit. In addition to the mush and meat, dogs should be fed a good quantity of fresh, green vegetables. Cabbage, turnips, carrots, etc., boiled and mixed with the broth, are excellent, and most dogs will eat such things readily. It must be remembered

that the food a dog will, or will not, relish depends a great deal upon the character of the food that was fed to him when young. Puppies brought up on a vegetarian diet will take readily to vegetables when full grown, but if reared on a diet of animal matter they will usually refuse to eat vegetable food unless very hungry.

It is a mistake to compel dogs to exercise soon after eating; a far better practice is to give them plenty of exercise *before* meals and let them rest a while afterward. Wild, carnivorous animals have to hunt and chase their prey before they can eat, and after feeding they invariably lie down and sleep for some time, and although dogs are no longer wild, their anatomy and internal organs and digestive arrangements are the same as in other carnivorous animals, and the nearer they can approach a natural condition the better.

TRAINING

A very important matter in raising or keeping dogs is to insist on obedience. Every dog should be taught to learn its name, to follow at heel, to lie down, or, in fact, to follow out any ordinary command without hesitation. Some dogs are far easier to teach than others; but it is no kindness to the dog and a nuisance to the owner and others to allow a dog to disobey. Never allow a dog to disobey purposely without correcting him. If it learns that your orders may be disregarded without fear of the consequences, it will fail you at

some critical time or will be absolutely unreliable. It is not necessary to flog, beat, or abuse a dog to compel obedience; it may be forced to obey by being seized and made to go through the desired motions and then by being rewarded; or it may be punished by switching lightly with a small switch or whip. The moral effect of the whip is of far greater value than the pain inflicted; a cringing dog always indicates an abusive master, and a heavy blow will not make it obey any better or quicker than a mere touch. As a rule, patience and kindness are of far more value in training than the use of a whip, especially with young dogs, and rewards for obedience will usually accomplish far more than punishment for disobedience. A dog reared from a puppy may be easily trained, but dogs that have been allowed to have their own way or whose training has been neglected will seldom learn to obey their master without the use of some forcible method.

CLEANLINESS

Dogs should always be kept clean, for their own and for their master's sake. Both long-haired dogs and short-haired dogs should be thoroughly washed at least once a week; and if washing is begun when the animals are quite young they will learn to enjoy it, but old dogs not accustomed to it frequently object. The coat should be well soaked in tepid or warm water, scrubbed well with some good dog soap, thoroughly rinsed, and rubbed partly dry. The dog should then

be tied in a sunny, dry spot, on a wooden or clean floor, and allowed to shake and rub himself. As soon as the hair is dried through, it should be combed and brushed with a coarse, smooth-toothed comb and a stiff brush. One often sees valuable, blooded dogs, apparently well cared for, whose skin beneath the hair is quite rough and brown and covered with dust and scurf. This should never happen; the skin should be kept clean, soft, and pink. One great objection most people have to house-dogs is that they are often troubled with fleas; but if a dog is kept thoroughly clean by frequent washing there will be little trouble on this score. A dirty dog affords a fine harbor for fleas, but a clean, well-washed dog has but little attraction for them.

It is just as important to keep the box or kennel clean as the dog itself. It is of little use to wash and comb a dog and then tie it to a dirty kennel, with soft earth around it, or to make it sleep in a bed of mused and dirty straw. Kennels and boxes that are neglected are splendid hiding-places for vermin, and all such shelters should be washed and disinfected frequently, and the walls should be whitewashed inside and out at least twice a year.

DISEASES

Dogs are subject to a very great number of diseases, and it is always the best plan to call in a veterinary surgeon if the dog shows signs of any serious trouble.

Ordinary digestive troubles may be remedied by giving a little castor-oil, or the dog may use nature's cures and eat certain kinds of grass and weeds. Although it is not advisable for the amateur to attempt to cure dog diseases without the aid or advice of a practised veterinary, yet at times it is essential to know what the trouble is, what causes and cures it; and, for this reason, a number of the more common diseases with condensed directions for their treatment follow:

Fevers.—Dogs suffer from many forms of low fevers, or “distempers.” These may often commence with the symptoms of a common cold or with inflammation of the lungs or bowels, which taken in time may be readily cured, but which if neglected may develop into a serious or fatal illness. Nevertheless, it is not necessary to assume that every cold or inflammatory symptom will result in distemper; the creature may suffer from a simple cold, from indigestion, or from some other trivial complaint. Fevers are divided into four or five varieties or diseases, as follows:

Simple Ephemeral Fever.—This disease, commonly known as a “cold,” is caused by exposure to dampness or cold draughts. The best remedy is a complete rest, an even temperature, and a mild physic. Give soft, easily digested food, and if no improvement results call a veterinary.

Simple Epidemic Fever, or Influenza.—This disease at first closely resembles a cold, but a cough is almost always present and the eyes and nose run badly. It is apparently a contagious disease which cannot well

be prevented, though far more likely to affect dogs that are badly cared for or have a cold than well-tended, healthy animals. The first treatment should be the same as for a cold, but a doctor should be called in to administer proper medicines. Care should be used during convalescence not to allow the dog to exercise too violently and not to overfeed him.

Typhus Fever, or "Distemper."—The symptoms of this disease vary greatly, but unmistakable evidences are a low fever with great prostration of strength, rapid emaciation, shivering, quick pulse, hurried breathing, loss of appetite, and decreased secretions. Usually the first symptoms noticed are general dulness and loss of appetite. In a day or two a husky cough may develop—especially after running—accompanied by a sneeze. These symptoms are also apparent in cold and influenza, but an almost infallible sign of distemper is in the rapid loss of flesh—a well-fed, plump dog often becoming a mere gaunt, emaciated, living skeleton within three or four days. Usually, also, the whites of the eyes are bluish-red and a small drop of mucus gathers in the corner. Both eyes and nose become clogged with a brown discharge and the teeth turn dark as the disease advances. A severe attack may cause death in three to five weeks or less, and at the first symptoms a good veterinary should be consulted. In severe cases many dogs are saved even when apparently dying, and hope should not be given up as long as any life remains. When a dog is afflicted with distemper great care should be used in feeding. Little or no food is required for

the first four or five days. A little weak broth or gruel and no solid food of any sort should be given from the time the dog is first taken sick until it has completely recovered. When exhaustion comes on strong beef tea may be given every three or four hours, and the dog should be forced to swallow it. Port wine thickened with arrowroot and alternated with the beef tea is a good and safe stimulant. No exercise of any sort should be permitted, as the muscular exertion increases the fever and exhausts what little strength is left. It is a great mistake to give dogs suffering with distemper a "breath of fresh air" by taking them for a walk. Good ventilation, absolute rest and quiet, and the greatest care and attention are essential to a cure.

Rheumatic Fever.—This is a very common disease of the dog. It is due to almost constant exposure to dampness and cold—especially to dampness of the kennel. Dogs that are allowed to lie and rest in warm living-rooms or before an open fire and are then placed out overnight in a poorly protected kennel are also apt to suffer from rheumatism. The symptoms are a fever, with shivering and dulness and a shrinking away or cringing, or even yelps as of pain when approached or touched. As a rule, the afflicted dog retires to a corner and dislikes to come out, or if drawn away snarls and snaps. Rheumatic troubles also show their presence by stiffness and soreness or dragging of the hind legs or inability to jump or run.

A hot bath will often help in rheumatism if the dog

is dried before a fire or heater and rubbed briskly with a good liniment. The food should be light and mainly of vegetables, and a little nitre and water, a few drops of camphor, and cod-liver oil are all excellent. The most important matter is to keep the dog warm, dry, and away from draughts and sudden changes of temperature.

Inflammation.—A great many of the common dog diseases are due to inflammation. Inflammation may be external and visible and characterized by intense heat, swelling, pain, or redness, or it may be internal and difficult to locate. It may be acute and develop very rapidly or it may be slow and chronic. In an acute form there is always an increase in the heart action and pulse beats. In a healthy dog the pulse should be from 90 to 100 per minute and may be felt on the inside of the front leg above the knee or by placing the hand against the lower part of the chest; but the pulse of dogs varies more than in man and varies more or less according to the breed of dog, so that a considerable increase or decrease in the pulse need not be accepted as an infallible sign of either inflammation or fever unless accompanied by other symptoms, or unless you are familiar with the normal pulse of the dog.

Hydrophobia, also Known as Rabies and Madness.—This is probably the most serious dog disease. The symptoms of this terrible affliction are a sudden and decided change of temper—a naturally gentle dog becoming morose, vicious, or shrinking. These peculiar

symptoms are usually manifested several days before the attack becomes acute and are followed by a delirious watching of imaginary objects, snapping at invisible enemies or at the wall, or tearing any object to pieces without reason. Other symptoms are constant watchfulness, oftentimes a peculiar howl, and an intense thirst. At times dogs are affected by rabies of a sort known as "dumb madness," during which there is no sound uttered and no water is touched; but neither thirst nor its absence is indication of hydrophobia. We often hear of the presence of "froth" at the mouth as an indication of this disease, and while rabies is invariably accompanied by a discharge of saliva, yet the apparent froth is far less than that produced by ordinary nausea or epilepsy, and many a poor dog suffering from an attack of indigestion or from some simple fever has been put to death under the impression that it was mad. Moreover, the frothy condition lasts but a few hours, seldom more than twelve, and is usually more apparent in dogs recovering from or developing fits than when suffering from rabies. Fits are often mistaken for hydrophobia, and as fits are usually accompanied by copious froth the popular idea has become prevalent.

If a dog fights and claws at the corners of its mouth with its paws it is a pretty sure symptom of madness, and if after a time it loses its balance and falls over there can be no mistake, and the dog should at once be killed. It is criminally dangerous to allow a dog suspected of having rabies to go at large, and as soon

as there is certainty of the presence of the malady the animal should be destroyed, for there is no known cure and a single bite may destroy human life with untold agony and suffering. *Never* attempt to approach, handle, or caress a dog which shows any symptoms of madness; secure it at once and keep all people and other living things safely out of reach of its jaws. A mad dog will seldom attack either man or beast unless molested, but will blindly bite or snap at any obstruction or living thing in its path. It knows no fear of anything. When affected with rabies a dog travels at a long trot, without the least deviation to right or left unless compelled to alter its path by insurmountable obstacles.

If a dog is bitten by another which is affected or which is suspected of being affected with madness, it should be isolated, secured, and constantly watched. The time which elapses between the bite and the development of the disease is from three weeks to six months, but if at the end of three months no symptoms develop, the animal may be considered fairly safe from an attack.

Inflammation of the Eyes, or Ophthalmia.—This is a very common trouble with dogs, especially if suffering from distemper. It may be recognized by a red or bluish-red color of the whites of the eyes, swollen lids, and a watery discharge. Purgatives, low diet, and sometimes bleeding, with local applications of eye-washes, are the best treatment, but if the case is severe a competent veterinary should be consulted.

Canker of the Ear.—This is usually due to high feeding and exposure to weather which causes an inflammation of the skin lining the ears. The symptoms are the constant shaking of the head and scratching at the ears, and if not attended to the increased irritation and spread of the disease causes an ulceration of the tip of the ear, especially in dogs with hanging or pendulous ears. The apparent trouble being at the end of the ear often causes owners to assume that this is the source of the disease, whereas in reality the trouble is located in the passage or opening of the ear. If a dog is seen shaking its head or scratching frequently at its ears the organs should be examined at once. If the lining is red or inflamed it is a sure indication of canker, even if there are no external evidences or ulcerations. On the other hand, an ulcer or incrustation at the tips of the ears does not prove the presence of canker, for such conditions may be produced by injuries, thorns, or irritation from brambles, burrs, etc. The treatment for canker is to administer purgatives and eliminate all animal matter from the food. A nitrate-of-silver or boracic-acid wash and zinc ointment should be used, by dropping the wash and ointment (the latter melted) into the ear alternately, every second or third day, at the same time treating any external ulcerations or incrustations with some healing antiseptic. If the attack is serious or of long standing, a doctor should be summoned, for there may be abscesses to be lanced or other treatment required. In handling a dog with canker it should be muzzled, and when applying the

ointment and washes the head should be held on a table or other flat object for several minutes, to allow the fluid to penetrate the canals of the ear.

Other Common Diseases.—Dogs are subject to laryngitis, asthma, inflammation of the lungs, pleurisy, pneumonia, consumption, gastritis, inflammation of the liver, inflammation of the bowels, dropsy, palsy, fits, worms, rickets, epilepsy, and mange. In all cases of serious disease a specialist should be consulted, for it is very seldom that an amateur can cope successfully with any severe ailment. The first thing to be done in nearly every case is to reduce the diet, especially the quantity of meat, to use local applications, keep the animal quiet and in a protected place, and avoid handling or contact; for many diseases are contagious and may be transmitted to human beings. Mange is at times very troublesome, and as there are several forms requiring very different treatments, every dog owner or fancier should be provided with standard mange cures and should follow the directions given. Although the array of dog diseases may seem formidable, yet with good care, proper feeding, and cleanliness there is comparatively little danger of pet dogs being seriously sick.

CHAPTER IX

CATS AND CATLIKE ANIMALS

DOMESTIC CATS

CATS are the commonest of all pets, and yet scarcely one cat in a hundred is properly cared for or fed. Cats are tough, hardy, self-reliant creatures, and will stand a vast amount of ill treatment and abuse without inconvenience. The old saying that a cat has nine lives may be exaggerated, but it serves to illustrate the fact that cats are exceedingly tenacious of life. Merely because cats will thrive under adverse conditions is no reason why they should be compelled to do so, however, and any one who keeps a cat should have interest enough in the creature to care for and feed it properly.

It is cruel and inhuman to keep a cat which is allowed to roam about at will during the night. If you keep a cat at home after dark, it will be just as contented, and your neighbors will thank you.

Very few people realize the amount of irreparable damage that cats do to our native birds. Well-kept house cats which are not allowed to roam at large seldom do any damage, and cats in cities destroy English sparrows, mainly, and are a benefit in this respect.

In the suburbs or the country, however, cats are exceedingly destructive to bird life, and should either be kept within bounds or else muzzled. A bell tied to its neck will prevent a cat from approaching birds without their knowledge, but even this does not wholly prevent the destruction among the more common and trusting species of birds.

Many cats become semi-wild and take to the woods, where they subsist almost wholly on birds; and many people who rave against wearing birds' feathers on hats, or who consider robbing a bird's nest a terrible crime, will allow their cats to roam about and destroy hundreds of beautiful and useful song-birds. One cat will destroy more birds in a single season than all the boys of the neighborhood would destroy in years, even if they all collected birds' eggs; for the cats destroy old and young birds alike and find setting birds far easier to capture than others. Nature created a natural hunting instinct in cats, and if left to their own devices, they cannot be blamed for killing birds for a living; the ones to blame are the people who afford the cats an opportunity to hunt.

Do not have a cat unless you intend to keep it permanently, or unless you can dispose of it when you are done with it. It is more humane to kill a cat in a merciful manner than to turn it loose. Some people are fond of cats and others detest them; it is a matter of personal taste and a question of individual preference, and if you like cats and are willing to give them proper care and food, there is no reason why

you should not have them, but there is no more reason for neglecting them or allowing them to be at large than would be the case with any other wild animal in your charge.

A practice which cannot be too strongly condemned is that of keeping cats during the summer at a seaside or country house and leaving them behind when the family returns to the city for the winter.

CARE AND HOUSING

If you keep a number of cats or breed them, they should have a special building and yard. The building should be well ventilated and warmed in cold weather. It should be protected from draughts and dampness, and, if possible, should have a southern exposure, for cats love sunshine. The yard should be connected with the house or building and should be made of wire netting and roofed for protection. Both yard and building should have a good floor of stone, tile, or concrete, although a hard earth floor will answer for the yard. Such floors, if sprinkled with disinfectant and cleaned every few days, will be free from odor and vermin. The best disinfectant is oil of eucalyptus; many other compounds are injurious to cats. Sleeping quarters should be provided, and these may be made from old cheese boxes filled with fine oat straw, with a bottom layer of sawdust sprinkled with eucalyptus oil. The straw and sawdust should be destroyed and renewed every week. Shallow tins or

boxes of dry earth, ashes, or sand should be placed in the building, and these should be emptied every day. Dishes of fresh, clean water should be provided and should be refilled and cleaned each day.

If there are only one or two cats they may, of course, be kept indoors most of the time, but cats require outdoor air and exercise, and it is necessary to let them out each day if they are to remain in good health. Instead of turning them out loose it is far better to provide them with a small run enclosed with wire netting and roofed over in which to exercise. Such a run is inexpensive and will soon repay you for the trouble and cost. If your cat is kept in the run when out-of-doors it will not fight with other cats, there is no chance for it to contract disease or vermin or to be stolen or killed. Moreover, your neighbors will not be troubled by the cat scratching up their gardens or prowling about their yards and, finally, you will always be able to find your pet when you want it.

Well fed and properly cared for, cats should look sleek and glossy, and to keep their fur in good condition they should be combed and brushed daily. This is particularly important with long-haired cats, and you should brush them regularly each day with a stiff hair-brush. It is not necessary to wash cats, and most felines resent this operation strongly. If your cat takes kindly to a bath it will do it no harm, but the fur can be kept just as clean with much less trouble by rubbing in fine flour or Indian meal and then brushing it out thoroughly.

FEEDING

Many people keep cats for the purpose of catching mice and rats. It is a common idea that cats will not be good hunters if they are well fed, but this is a great mistake. As a rule, the best-fed cats are the best hunters. A half-starved, listless, or weak cat has no ambition to hunt, whereas a well-fed, active cat has. Cats seldom hunt for food; they merely follow their natural instincts and catch mice, birds, and other creatures for the satisfaction of killing.

Regular feeding is as important for a cat as for any other pet. Twice a day for regular meals, with a light midday meal, is sufficient for a full-grown cat. For breakfast use bread and milk, not wet, but squeezed fairly dry, or dry bread moistened until soft with gravy or soup, or potatoes mixed up with milk or gravy; for the midday meal, boiled milk or bread and milk; for the final meal, table scraps mixed with boiled potatoes, or bread and milk, fish heads, or meat. Fish heads and meat scraps boiled with rice are also good. Oatmeal porridge boiled with milk and flavored with fish scraps or minced beef is excellent in cold weather but should be given sparingly at other times, as it is very heating. Always give boiled milk and *never* give fine, sharp fish-bones or sharp, broken chicken bones. Many people feed their cats entirely on raw meat or on steaks and chops. Steaks and chops are all very well for human beings, but they do not have as much nutritive value as tougher and cheaper meat, and it is

a shameful waste of money and good material to feed cats or other animals expensive cuts of meat. Such things are not a whit better nor, in fact, as good as cheap meat and are not appreciated by the pets. Meat in limited quantities is good for cats, but if given as a principal article of diet the creatures will become wild and cross and far more subject to disease and parasites than when fed on a mixed diet of which animal matter forms a very small part.

Kittens, when first weaned, should be fed three or four times a day on porridge and bread and milk, with a little minced meat. Milk should always be boiled. Raw milk is likely to induce worms, and more cats die from these parasites than from any other single cause. Leave the kittens for six or seven weeks with their mother and never attempt to raise all the kittens in a litter unless you have a foster-mother to whom you can give some of them.

In taking away the kittens from their mother, take one at a time, at intervals of a day or two. They may be drowned by placing them in a tin box with holes in it and setting it in a pail of water with a weight on top to keep it beneath the surface, or they may be chloroformed.

Cats, if well cared for and properly fed, will live for many years, and instances are known of cats living a healthy, contented life for over twenty years in one family.

BREEDS OF CATS

The majority of domestic cats are of mixed or mongrel breed. It is seldom that one sees a pure-blooded cat outside of exhibitions or fanciers' collections. Although there is such a great variety of colors, markings, and other characteristics among common cats, the recognized breeds are comparatively few, and most of these are far prettier and more attractive than ordinary mongrel house cats. If you wish a cat for a pet try to get one of some recognized breed. Such cats are often very cheap, especially if they are slightly off color or form, and hence unfit for prize competitions.

All cats may be divided into two general classes—Long-Haired Cats and Short-Haired Cats. To the former belong the various Angora or Persian varieties, to the latter the numerous common cats which form the bulk of domestic felines.

Long-Haired Cats may be self-colored, broken-colored, or other colored. The self-colors are black, white, blue, or orange.

Pure white Persian Cats are very beautiful but very difficult to keep in fine condition. A pure-bred white Persian should have blue eyes, but the eyes are frequently odd—one being blue and the other green or yellow—and these white Long-Haired Cats are frequently deaf. The black Persians may have either green or orange eyes, and there should not be a spot of white upon them, although a little white star on the

breast or white feet often add to their beauty. The orange or cream Persians are quite rare, and the females are much more scarce than the males. Both varieties should have hazel or brown eyes, and the two extremes of deep orange and palest cream—although considered distinct breeds—grade from one into the other. Blues are really gray, or Maltese, and are very attractive when pure, but nine out of ten are more properly gray or drab than true "blue." Smokes are a mixture of blue, black, and white, and are very hard to breed. Frequently a fine "smoke"-colored cat will look like a very poor black after the hair has been shed.

Silvers or "chinchillas" are also difficult to breed true, for they have a tendency to become spotted or irregularly colored, whereas a true silver should be so evenly shaded that the fur looks like that of a real chinchilla.

Tortoise-Shell Angoras are very beautiful but rare, and it is seldom indeed that a tortoise-shell tom is seen. Brown tabbies also occur among the Long-Haired Cats, and when well marked, with tawny orange and black and of a large size, they resemble miniature long-haired tigers.

In the Short-Haired Cats we find the blacks with the orange or green eyes; the whites with blue eyes; blues, silvers, chinchillas, tabbies, tortoise-shells, and, in fact, all sorts of colors and combinations of colors.

Siamese Cats are an odd breed and are hard to raise. They are nearly white when first born, but when grown they are soft, pale fawn, with the ears, nose, tail, and

legs dark, sooty-brown, or chocolate. The eyes are blue, and the tail may be either kinked or straight.

Manx Cats are a queer, tailless breed with high hind quarters. They are very intelligent and affectionate, with long, soft fur. These Manx Cats should not, however, be confused with tailless cats which have the tail amputated when young so that they may be sold as true Manx Cats. In the real Manx breed there is no tail whatever, and the end of the spine may be easily felt, whereas in cats which have had the tail removed there is a stub or a slight knob on the end of the spine.

DISEASES OF CATS

Cats are subject to many diseases, but few of them prove fatal except in the case of young kittens. Most cat diseases are similar to diseases of human beings, and, as a rule, the same remedies that you would give a child may be given to cats with satisfactory results.

A great many diseases may be prevented by care in feeding. Give boiled milk and in spring a pinch of sulphur each morning. Give kittens a dessert-spoonful of lime-water in their milk each day and use care not to overfeed or to give too much meat, and your cats will be in good health most of the time.

The following are a few of the most common diseases with their treatment:

Anæmia.—Give Blaud's Iron Pills—one half a pill daily until nose becomes pink.

Colds.—Rub the nose both outside and in with lanolin. If the cat sneezes so much the better. Also give small doses of aconite and feed beef tea. Keep warm and away from draughts.

Constipation.—This is usually caused by a lack of green food. Give castor-oil or sweet-oil or one half of a Carter's Liver Pill.

Debility.—Give cinchona bark, one ounce, in water, one pint. Dose, a dessert-spoonful three times a day.

Diarrhæa.—Give tepid—not hot—food. White of raw egg in teaspoonful doses, three times daily, is excellent. Also powdered arrowroot made into a thin gruel.

Distemper.—Small doses of strong beef tea, with one grain of quinine twice a day, with a teaspoonful of port wine. No solid food but plenty of sunshine.

Ear Troubles.—Use any good lotion that you would use upon yourself.

Fits.—Plunge the animal in hot water, as hot as you can stand, up to the neck, holding the creature's head out of water. Place a rag or sponge wrung in cold water on the head and give doses of bromide of potassium.

Gastritis.—Give bismuth powders, one quarter teaspoonful the first day, and reduce dose each day for three or four days. Do not give solid food. The symptoms are a craving for cold water. Give the cat all it wants.

Skin Troubles.—Use sulphur and vaseline rubbed well into the roots of the hair.

Snuffles.—A complete change of air will generally effect a cure. Sweet-oil with a few drops of oil of eucalyptus sprayed or rubbed on the nostrils will help.

Sore Throat.—Chlorate of potash dropped in throat in form of powder.

Weak Eyes.—Cod-liver oil given daily to build up the system, with a lotion of alum and water on eyelids and boracic-acid solution dropped in eyes. Give plenty of air, exercise, and warm sunshine.

Worms.—Symptoms: great hunger, irrespective of the amount of food supplied, lean condition, and poor coat. Give salt in food, and dose with some reliable worm medicine.

Vermin.—Fleas and lice are at times very troublesome. Cleanliness, liberal use of disinfectants, and frequent combing or brushing of the fur will do much to prevent these pests. If fleas or lice become established on the cat, rub fresh Persian Insect-Powder well into the hair all over the body. Repeat this each day for three days and then comb and brush thoroughly. In a bad case the cat may be thoroughly scrubbed with a thick lather of carbolic or whale-oil soap, and dried in a warm spot.

If any other diseases or serious trouble arise do not hesitate to consult a good veterinary who makes a specialty of cats.

WILDCATS

This is a term applied to many species of wildcats, as well as to ordinary domestic cats which have run

wild in the woods. The real wildcat is a European animal, which in general appearance resembles the common cat. The tail, however, is stouter and shorter and does not taper, and the animal is larger, stronger, and more heavily built than the common cat. The wildcat is a very savage, ill-tempered creature, and never becomes thoroughly tame. The American Wildcat, so-called, is the bay lynx, or bobcat. This is a large, long-legged animal with a short, stub tail, and ears which end in little tufts of hair or tassels. Its color is gray, spotted, or irregularly marked with darker tints of gray and brown. When taken young the bobcat will sometimes become fairly tame, but like all the lynx family it is treacherous and unfit to be a pet.

In South and Central America and Mexico there are various species of large wildcats, some of them very handsomely marked. The Margay Cat is a very common species. It is about 2 feet in length with a long tail, from which it derives its common name of Long-Tailed Cat. Its color is grizzly brown or reddish with black spots and rings. The margay is frequently kept in captivity in the countries where it is found and often becomes as docile and domestic as the common cat.

The ocelot is a very beautiful creature, resembling somewhat a leopard or jaguar in color but with elongated and irregular markings instead of rounded spots. It is very easily tamed when young but is treacherous and undependable later.

Several other species of wildcat are found in tropical America, but none of them can be tamed sufficiently to be considered desirable pets. In Africa, Asia, and the East there are also a number of wild, catlike creatures, some of which are occasionally kept in captivity. Any of the cat family, not excepting lions, tigers, and leopards, may be tamed when taken young, and until half grown they are very gentle, playful, and affectionate. When mature, however, they are unreliable, treacherous, and incapable of real affection or gratitude. At the least provocation they will turn on their masters, and even the best and most skilful trainers can never feel quite safe among these giant cats.

When in tropical America I once owned a young jaguar, which was brought to me when a mere kitten. It was a very pretty and lively little creature and drank readily from a bottle. It soon learned to lap milk and was fed on a mixed diet of bread and milk, gravies, rice, vegetables, and cooked meat. Every effort was made to tame it. For some months the little jaguar was very gentle and would follow me about like a pet dog and would rub against my legs like a cat begging to be petted. It never showed any disposition to scratch or bite until about half grown when, without the least warning, it sprang at a passing boy and nearly killed him. After this the animal was kept securely chained; but it soon became so sullen and savage that it had to be destroyed.



CATLIKE ANIMALS.

1. Margay Cat.

2. Civet.

3. Genet.

OTHER CATLIKE ANIMALS

Somewhat similar to cats in habits and appearance are the *genets* and *civets* of the Old World. These creatures have a strong and powerful odor, which is very unpleasant to many people, but which is highly prized as a scent by the Orientals. The animals are prettily marked and are more or less weasel-like in form. The genet is frequently tamed, and in Constantinople is kept by the natives in their houses to destroy rats and mice. The civets are also kept in captivity in Africa and Asia. They are good mousers and sometimes become very tame and are fond of being petted and stroked. They are never very affectionate, however, and are likely to bite and inflict serious injuries if handled roughly or suddenly disturbed.

THE HUNTING LEOPARD

This remarkable animal, known also as the *cheetah*, is as large as a leopard, and has characteristics which cause it to resemble both a cat and a dog. The limbs are long and slender, the head short and round, and the claws cannot be entirely drawn into the toes, as in the true cat. The cheetah can run for long distances as swiftly as a horse, and this odd combination of dog-like running and catlike stealth render it a most successful and tireless hunter of game. This faculty has been taken advantage of by man, and in Asia and Africa cheetahs are kept in captivity and used for

hunting antelope and other swift-running animals. If taken young and well trained the hunting leopard becomes very tame and seems to take delight in aiding the huntsman.

In Mexico the Aztecs are said to have trained the ocelots for hunting, but at the present time the cheetah is the only member of the great cat family that is domesticated and trained by man for this purpose.

CHAPTER X

MONKEYS AND MONKEY-LIKE CREATURES

IF we visit a menagerie we will always find a crowd around the monkey cage; even the elephants and lions fail to attract the same interest and attention as these lively and familiar little creatures. Monkeys are so droll, so mischievous, and so human in their ways that they are irresistible, and even the hurrying business man will stop to watch the antics of some poor organ-grinder's monkey on the sidewalk. Many members of the monkey race are exceedingly intelligent and learn to eat at table, dress and undress, go to bed, sweep rooms, ride bicycles, use roller-skates, and even to smoke pipes, like human beings. These are usually manlike monkeys, or apes, but some of the larger baboons are almost as intelligent. The apes and baboons are not, however, suitable for home pets; they are very valuable and require a great deal of care; they are subject to numerous ills, very susceptible to colds, and the baboons, at least, are usually ill-tempered and often savage, especially toward strangers. Many of the smaller monkeys make excellent pets, however; but all monkeys require far more care and attention than other pets, and you cannot expect to keep a monkey as easily as you would a cat, dog, or rabbit.

There is a vast number of species in the monkey tribe, and they range in size from the giant gorillas, chimpanzees, and orangs, which are nearly as large as a man, to the tiny "Titis," or Squirrel-Monkeys, which are less than a foot in length.

Monkeys are native in both the Old and the New World, but those in America may be readily distinguished from all other species by their noses. Whereas all Old World monkeys have the nostrils pointed or directed *downward* and close together, the American monkeys all have the nostrils widely separated and directed *outward*.

The tail of a monkey is often a very good means of determining his nationality; for while the Old World monkeys and the American monkeys may have long tails, short tails, or scarcely any tail at all, the prehensile or grasping form of tail is found only among American monkeys. If you see a monkey with a prehensile tail you may be sure he is an American; but a short tail or a tail which is not prehensile does not prove that the owner is a foreigner. Most American monkeys are fairly small, the largest being the *howlers*, which are 3 or 4 feet in length, and a member of nearly any species is easily tamed and becomes very affectionate. The Old World monkeys, on the other hand, vary greatly in size, and many of the species are savage, sullen, and untamable.

Practically all hand-organ monkeys are American, and the great majority of small monkeys in menageries and zoological gardens are also natives of this hemi-

sphere. They are cheaper, hardier, and, as a rule, far more intelligent than the Old World species, and their hand-like tails make them far more interesting and amusing.

Although there are a great many species of American monkeys, they may be divided into six groups or classes, aside from the marmosets. The first of these groups comprises the various *howlers*, big, ugly, ill-tempered creatures which troop through the forest tree tops in great droves and make night hideous with their terrific cries. They are practically untamable, and even when treated with the utmost kindness they remain sullen and ferocious.

UAKARIS

The second group comprises the queer *uakaris*. These are baboon-like monkeys, with long, white hair, very short tails, and scarlet faces. They are very rare in captivity and do not thrive outside of their native forests.

The *couxios*, or Bearded Monkeys, are the third group, and these are distinguished by the odd wig-like mop of hair on the crown and by a heavy beard on the chin. They are strikingly peculiar creatures and look like tiny gnomes or dwarfs. Their tails are not prehensile but are thick and bushy, and the fur is usually long and coarse, although some species have very soft, silky hair. They vary in color according to the species, but the majority are dark or even black. They are

quite small, about 10 or 12 inches in length without the tail, and are easily tamed and become very strongly attached to their masters. They are quite rare in collections but have so many excellent traits and are so droll in appearance that they deserve to be better known.

The next group contains the so-called *Spider-Monkeys*. These are the most abundant of American monkeys and are exceedingly active, lively creatures, perfectly at home in the tree tops but are very awkward on the ground on account of their extremely long, slender limbs. Their tails are as useful as a fifth hand and are often used for picking fruit or for carrying food to the mouth; and, as the hands have no thumbs, such a tail is almost a necessity. Some species of Spider-Monkeys are very large; they sometimes reach a length of over 2 feet without the long tail, but they are so lean and "spidery" that they look far longer than they really are.

There are many species of Spider-Monkeys, and they are widely hunted by the natives for food. Their flesh is very sweet and tender and tastes like quail or pigeon.

Some Spider-Monkeys are black, others brown, and others a rich reddish color. Their heads are small, and their expression rather wistful and surprised. They are far from beautiful, but their dispositions are so mild and they are so easily tamed that they are great favorites as pets. Many Spider-Monkeys show remarkable intelligence; they are easily made unhappy by cross or impatient language and are pleased and

encouraged by kind words. They are not nearly as mischievous as many other species and are seldom surly, ill-tempered, or treacherous. They can be trained to perform many odd tricks. A lady friend who owned a large red Spider-Monkey in Central America had taught the creature to open and shut windows and doors, carry dishes to and from the table, and perform various other household duties. In accomplishing these tasks the monkey never ran on all fours but hopped along on its hind limbs, using its tail as a prop or support, or at times carrying some object in its grasp.

CAPUCHINS

The *capuchins* are another group or class of American monkeys which includes numerous varieties. They are easily recognized by an extremely long prehensile tail, thickly covered with hair, a well-developed thumb on the hand, and a large, intelligent head covered with short hair. These are the commonest of all American monkeys in menageries, and nearly all hand-organ monkeys belong in this group. In color they are variable; some varieties are brown, others gray, others golden, others reddish, and some very dark-brown or even black. In nearly all varieties the head and face are lighter in color than the rest of the body, and in the White-Faced Monkeys the whole face, throat, neck, and chest are pure white.

The capuchins are exceedingly intelligent but restless, inquisitive, and changeable in mood. They are

usually good-tempered and although seldom malicious are very mischievous and full of tricks. The capuchins make very affectionate and interesting pets but are often extremely jealous and fly into a perfect fury of rage if their master or mistress shows any attention to other creatures or to human beings. They are also very uncomfortable when laughed at and will often sulk for hours and utter most pitiful cries if scolded or punished. These monkeys often form sudden attachments for perfect strangers and whine and cry if their affection is not returned. They are tireless investigators and will spend a great deal of time endeavoring to solve the mystery of a watch or other mechanical device and are as pleased as children when they discover how to use some tool or such a utensil as a comb, brush, mirror, or cup. They are quite hardy and withstand changes in climate and temperature far better than most monkeys.

The last group of American monkeys comprises the *titis*, or *Squirrel-Monkeys*. These are very small, gentle creatures with long hairy tails which are not at all prehensile. The colors are usually bright reddish, or golden-brown, and the fur is soft, thick, and silky. The face is often white or very pale-colored, and the eyes are large, soft, and gentle. The Squirrel-Monkeys are very easily tamed and love to be petted and caressed. They like warmth and shelter and will sleep contentedly in their owner's pocket or curled in one's lap. They are by far the most desirable of the true monkeys for house pets and are as cleanly and neat as squirrels.

MARMOSETS

These are the most beautiful and lovable of all the monkey family. In size they are about as large as a squirrel, and they are so gentle and affectionate that they are always great favorites. There are several species—all American—and in habits, appearance, and other characteristics they are all much alike.

Marmosets require a great deal of warmth and should always be kept in a warm room with plenty of soft bedding. In cold weather a warm soapstone wrapped in several thicknesses of flannel will make a nice cosy bed for the little creatures, but ordinarily a nest of soft wool and cotton will keep them warm enough. They soon learn to creep into a tiny bed and will snuggle down under the miniature blankets in a very human-like manner. They are very easily tamed and may be allowed the liberty of a room without the least danger, for they seldom attempt to hide or escape but prefer to cuddle up in one's lap or curl up inside of a pocket or a basket of cloth. They are apt to be very timid in the presence of strangers and keep up a querulous little cry if they are alarmed or distrustful. In summer-time marmosets may be kept out-of-doors during the day, and I have known of several cases where tame marmosets were allowed to roam at large about the garden. These little creatures made no effort to escape but travelled here and there along the fences and among shrubbery, or dozed in the sun. They kept well out of the reach of dogs, which they

seemed to recognize as natural enemies. At first the owner of these marmosets was afraid they would be caught or injured by stray cats, but the cats seemed to consider the marmosets as uncanny and gave them a wide berth.

Marmosets may be kept in small cages with perches and swings, or they may be secured with a light chain or cord attached to a collar or belt and fastened to a shelf or box provided with a nest. They should be kept very neat and clean, and their coats should be daily brushed with a child's soft hair-brush. Fresh water should always be within reach, and in cold weather it should be about the temperature of the room. If you see a marmoset shivering or wrapped up in its tail you may be sure that it feels chilly, and it should immediately be moved to a warmer spot. In their wild state marmosets live upon small birds, birds' eggs, insects, and fruit. In captivity they should be fed on fruit, mocking-bird food, canary and other seeds, meal worms, and insects, with now and then a little finely minced raw chicken or meat. Sometimes marmosets are very fond of milk, and a reasonable amount will not hurt them. Hard-boiled egg is also excellent, especially in cold weather, and if you can secure some eggs of the English sparrows they will prove a most enjoyable tidbit for your pets.

OLD WORLD MONKEYS

Aside from the baboons, mandrills, macaques, and the large apes, none of which are suitable for home



MARMOSETS.

1. White-Eared Marmoset, or Saguin.
2. Pinche, or Midas Monkey.
3. Tamarin, or Marikina.

pets, the Old World monkeys are comparatively few in number, and many of the most beautiful and interesting species are very rare or are seldom found in captivity.

The commonest of the foreign monkeys in captivity is the *Green Monkey*, so called from the color of its fur, which is an olive-green. The face is decorated with long whitish, or yellow whiskers, which unite over the forehead, and the throat and under-parts are also whitish. The Green Monkey is a native of Africa but was introduced into the West Indies about the year 1700, and is now very abundant on the islands of Saint Kitts and Grenada.

Mangabeys

The *mangabeys* are somewhat like the Green Monkeys in form but are very different in color. They are usually dark or blackish with small whiskers, projecting eyebrows, and white eyelids. Some species have white heads and light lower parts; others have a white collar, while still others are entirely black.

Related to these is the Diana Monkey, a species with a grizzly-black coat, with the forehead, a goat-like beard, the throat, chest, inside of legs, and a streak across the rump, pure white. It is a beautiful species and easily tamed.

The Bonnet-Monkey

The *Bonnet-Monkey* is a peculiar species from India, where it is held sacred by the natives, and being un-

molested, it commits great depredations on growing crops. The color is yellowish, with black hands and feet, and the hair on the head projects over the eyes and around the cheeks in such a way that the animal seems to be wearing a bonnet. These monkeys are easily tamed and become quite affectionate, but when fully grown are too large to make good pets. An adult Bonnet-Monkey will weigh twenty-five pounds or more and is a very large and strong creature.

Orange-Faced Monkey

The *Orange-Faced Monkey* of China is a very beautiful creature with its golden face surrounded by glossy white whiskers, and a line of reddish-brown across the eyebrows. The back is dove-gray with a square patch of white on the loins. The tail and arms are white, and a collar of bright chestnut surrounds the lower neck. The thighs are black and the hind legs brownish-red. It is rarely seen in this country but makes an excellent pet.

The Guerza

Possibly the most beautiful of all monkeys is the African *guerza*. This animal has the limbs, back, and head covered with short, glossy, jet-black fur with the cheeks, chin, and forehead pure white. Hanging from the sides, flanks, and end of the tail is a long, luxurious fringe of silky white hair which gives the monkey a most elegant appearance. The *guerza* is much hunted for its skin, is rather rare in collections, and is seldom

seen in captivity, although it is easily tamed and makes a very handsome and interesting pet.

Many other species of both American and foreign monkeys are seen in menageries and for sale by dealers, but the varieties described above are the more desirable of those commonly offered for sale.

In selecting a monkey for a pet, be sure that it is healthy and good-tempered. Many monkeys are cross and savage in the presence of strangers, and you should not judge hastily of the animal's nature by a single visit to the dealer's. If you like a monkey try to make friends with it, feed it a few dainties, and coax it, talking quietly to it meanwhile, and in this way overcoming its shyness and distrust. After a few visits it will probably recognize you, and if it appears to take a liking to you and allows you to stroke or scratch it you may be confident that it will make a good pet.

CARE AND HOUSING

Monkeys are all natives of warm countries and are very susceptible to changes of climate and cold weather. Draughts, dampness, and unusual cold are fatal to them, and probably more monkeys die from pneumonia and pleurisy than from any other causes. Keep your monkeys in a well-heated, properly ventilated room in cold weather and do not expose them to draughts or sudden changes of air. *Never* open a window when a monkey is in the room in cold weather, and *never* keep a monkey's cage on the floor where it

is draughty. Most monkeys love the warmth and brightness of sunshine, and a sun-bath is good for them. Extreme cleanliness of food, cage, and the animal itself is a prime factor in maintaining monkeys in good health, and the cage should be thoroughly cleaned and disinfected each day.

Do not keep a monkey cooped up in a small cage. They are very lively, active animals by nature and must have abundant opportunity for exercise if they are to thrive in captivity. Even a small monkey should have a cage at least 3 feet square and 3 or 4 feet in height, and if you cannot provide such quarters you should not think of keeping a monkey. The little titis and marmosets may, however, be kept in a good sized squirrel cage, especially if allowed to exercise in the room or yard each day.

It is not necessary to have a ready-made wire cage; an ordinary wire-netting cage is just as good or better, and in such a cage you may have a scraggly tree or some branches which the inmate will thoroughly appreciate. The cage should be provided with a snug box or nest, for monkeys love comfort and warmth when sleeping, but the nest materials should be renewed every few days and the box thoroughly disinfected. Cover the floor of the cage with clean, fine sawdust, sprinkled with eucalyptus-oil and water, and renew it each day, and give the animal some bright-colored, large-sized marbles, a toy china doll, or some other toys to play with. Monkeys will amuse themselves with toys by the hour, and are as fond of such things as children.

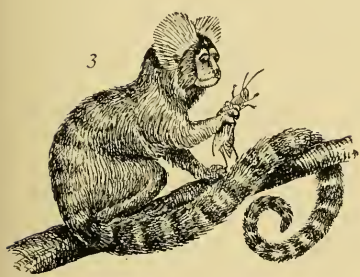
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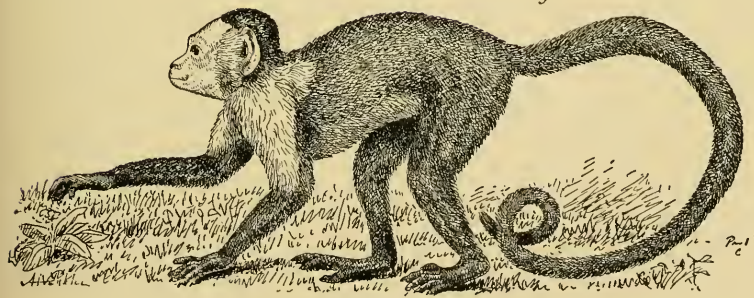
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MONKEYS.

1. Titi. 2. Bearded Monkey. 3. Marmoset. 4. Guereza. 5. Capuchin.

Always provide clean drinking water in abundance, and if you secure your pet by a belt and chain be very sure that the belt is not too tight.

Monkeys brought to this country by seamen are often fastened with a chain to a belt, and frequently the belt is so tight that it seriously injures the monkey. It is a wise plan always to examine a new monkey to be sure that an old belt or cord does not still encircle the animal's waist. Sometimes the belt may be left in place and so concealed by the hair that it is not noticeable. I have known of cases in which a sick and apparently dying monkey was completely cured in a few days by removing a piece of leather thong which was tied about the creature's waist and was concealed by its fur.

Many people object to tame monkeys on the ground that they carry fleas, lice, bedbugs, and other vermin. It must be admitted that far too many monkeys are afflicted with these detestable pests, but they are easily destroyed and will not return if the monkey is kept clean, and other monkeys, dogs, or cats with fleas are not allowed near.

When you first acquire a monkey treat its fur with a good dose of fresh Persian Insect-Powder, rubbing the powder well into the roots of the hair. It will doubtless object to the process, but if necessary it may be muzzled during it. Repeat the operation again in two days, and in the meantime keep the cage well sprayed with disinfectant. After the second application remove the monkey from the cage and scald

the entire cage with boiling water. Brush out the monkey's fur thoroughly, and you will have no further trouble with vermin if you have carried out the treatment properly. If there are fleas or other vermin on the head near the eyes and nostrils, do not use the powder in these places, but rub vaseline and sulphur well into the roots of the hair.

FEEDING

In a wild state monkeys live on a very mixed and miscellaneous diet of nuts, fruits, seeds, shoots, leaves, birds, insects, eggs, and vegetables. Some species feed largely upon animal matter, and others subsist almost wholly upon vegetable food, but in confinement a mixed diet is always preferable. The principal food should consist of grains, fruit, and fresh green vegetables. Nuts may be given sparingly as luxuries, but roasted peanuts should never be given. I doubt if any food is worse for a monkey than roasted peanuts, although monkeys in menageries are constantly receiving them. Cooked food of any sort is unnatural, and peanuts are very indigestible. Probably more digestive disorders among caged monkeys can be traced to peanuts than to anything else.

The mainstay of a monkey's diet should be grain and vegetables. Cracked corn, paddy, hemp, rape, and canary-seed, as well as oats and wheat, should be fed freely. Any fresh vegetables, especially raw sweet potatoes, carrots, artichokes, beets, and the like are all excellent. Ripe apples, bananas, oranges, and other

fruits are also good, and some species of monkeys will subsist almost entirely upon fruit. Meal-worms and ants' eggs should be given every day or two, and any other insects, either fresh or prepared as directed for soft-billed birds, should be given whenever possible. Raw hens' eggs are relished, and you will be surprised to see how neatly a monkey will open and eat a hen's egg without spilling any of the contents. Fresh green clover and lettuce should be offered the monkey, for some individuals are very fond of greens. If your monkey will drink milk it will not harm it, but it should be given with a little lime-water, and preferably scalded. Sugar, candy, cake, pie, and all other sweet substances should be avoided. All such foods are injurious, but a piece of sugar-cane or a green corn-stalk will be a welcome and healthy addition to the monkey's bill of fare. In summer the animal may be given raw green corn on the cob, as well as raw peas, beans, and other vegetables. Corn should never be given in large quantities in any form as it is heating, but in winter it may be given more liberally than in summer. Dry, hard bread crusts will seldom prove injurious, but soft or newly baked bread should never be fed. Many monkeys must have a limited amount of animal food. If the monkey seems to be dissatisfied with its diet, try a little raw chicken or beef, and if it appears to relish it feed it a very little once or twice a week. Be very careful not to overfeed. Monkeys are greedy creatures and will eat all they can hold and then stuff their cheek-pouches full. Just as soon as

you see the monkey begin to fill its cheeks with food stop feeding, and give a little less the next time.

Feed three times a day, morning, noon, and night, and try to plan the meals so that each contains different substances.

If the monkey appears hungry between meals and cries out when you approach, you can increase the amount of food slightly until it appears satisfied. A dish of hard, whole grains may be left within reach all the time, for monkeys will seldom eat more than they require of these things and the mastication required is good for them.

As each species of monkey varies more or less in its likes and dislikes respecting food, and every individual of a species has personal preferences just as people do, it is impossible to lay down a hard-and-fast rule for all monkeys. Use common sense, judgment, and a varied diet, and you will soon learn your monkey's tastes and what it is best to feed it.

DISEASES

Monkeys have numerous diseases, but as most of them are very similar to human ills they may be successfully treated by the same remedies that you would employ for like ailments in a child. Colds, influenza, and pneumonia are their commonest troubles, and these ills are easier to prevent than to cure.

Improper food and overfeeding are also the cause of many monkey diseases. It is an all too common habit to feed monkeys everything and anything that they like.

LEMURS

You may think that monkeys are interesting and amusing pets, and that the dainty marmosets are very lovable, but if you once keep a pet lemur you will find that it combines all the desirable qualities and characters of both monkeys and marmosets, with none of the bad traits of the former and far more intelligence than the latter.

Lemurs, although related to monkeys, are very different from those animals in appearance. The sharp nose and fox-like face, with its staring owl-like eyes give the lemurs a very wide-awake and knowing expression, and they have a cool, odd manner of peering fixedly at any object which is very amusing. The perfectly formed fingers and thumbs resemble the lean, wrinkled hands of an old negro, while the long, bushy, and beautiful tail is far handsomer than that of any squirrel. There are many species of lemurs, but the majority are natives of Madagascar and East Africa, and all are more or less similar and are easily recognized.

Lemurs are naturally nocturnal, but in confinement they soon learn to stay awake during the day, and they prove one of the most interesting, affectionate, and intelligent of all pet animals. They are wonderfully active creatures, with the power of making prodigious leaps or bounds, and will jump from and alight upon narrow or insecure footholds with the ease and agility of a bird. Their hands are not only fitted for grasping

by the form of the fingers and thumbs, but in addition many species possess the power of actually causing the palms of their feet to adhere to a perfectly smooth surface by means of tiny, sucker-like wrinkles and papillæ.

The lemurs readily walk erect, and in cages they have a curious habit of running back and forth on a perch while standing on the hind feet, and keeping the front feet clasped over the breast. Although usually quite silent, the lemurs possess voices out of all proportion to their size, and the cry of a small lemur sounds more like the roar of a lion than the call of such a dainty little creature.

The lemur's tail is its pride and delight. A tame lemur will squat for hours fondling and arranging its tail, and when cold the little creature uses it for a blanket and swings it over one shoulder in a very jaunty manner, reminding one of a Mexican with his serape. When sleeping the lemur curls up in a ball and wraps itself in its bushy tail, and then appears like a mere ball of soft fur.

Lemurs grow very fond of their masters and trot around after them most assiduously, often clinging with one hand to the edge of a garment and holding the voluminous tail over the other arm. They soon learn to run up and down stairs, and seem to delight in imitating the actions and attitudes of human beings. They are very inquisitive but are never mischievous or malicious like monkeys. They love to investigate a strange person or a new object, but seem to feel that every one is a friend, and are willing to be petted



LEMUR.

or stroked by any one, and are greatly pleased at any attention shown them. They are extremely docile, and I never knew of a lemur biting or snapping at any one; in fact, their teeth rather preclude the idea of their biting seriously, for they are adapted to eating fruits and soft-bodied insects rather than to tearing meat or breaking hard-shelled nuts.

Lemurs are natives of tropical countries and must be kept warm and free from draughts, but they are such delightful pets and so cleanly in their habits and free from any disagreeable odor that no one will find it too much trouble to give them all the care and attention they require.

Lemurs may be kept in good-sized squirrel cages or in houses made of wire netting, and when they become accustomed to their new home and are thoroughly acquainted with their owners they may be released from their cage a great deal of the time. During warm summer weather they may be taken out-of-doors, and they will romp and play in great glee, and will find a lot of exercise and delight in scratching about for insects.

The body of the commoner species of lemurs is about 15 to 16 inches in length, with a tail measuring as much more, but they are very light in weight and the thick fur makes them look much larger than they really are.

In a wild state the lemur feeds upon fruits and insects exclusively, and in confinement it should be fed upon dates, bananas, insects, and sweetened and softened rice and grain. Meal-worms, ants' eggs, and insects should also be fed freely and water should be

given. Some lemurs are fond of fresh vegetables and grass, and others seem to require a little meat now and then. The best diet is a varied one, as for monkeys and marmosets, but fruit should be the main article of food.

Cleanliness is as essential for lemurs as for any other pet, and as they are naturally very clean and neat animals any dirt or a foul cage is very distasteful to them; in fact, I have known of a lemur absolutely to refuse to eat or sleep in a cage which had not been properly cleaned. They are not at all difficult to keep, and are seldom troubled with any disease other than colds or influenza, which may be prevented by keeping them warm and protected from draughts. On cold nights they should be placed in a warm spot, and the cage may be wrapped in cloth or paper as an additional protection. Lemurs seldom have fleas or other vermin, and as far as I know there is absolutely no objectionable feature about them.

If you want a really interesting, odd, and beautiful pet by all means obtain a lemur.

CHAPTER XI

RUMINANTS AND HOOFED ANIMALS

WE are all familiar with the story of "Mary's Little Lamb" and know that lambs and kids may become very affectionate pets. Eventually they become sheep or goats, however, and are then no longer particularly desirable pets.

Many other hoofed animals are very suitable for pets, and deer and antelope readily become tame enough to follow their owners to school or anywhere else.

DEER

When the author resided in Central America he had a number of tame native animals, among them a deer and a peccary. The deer was brought in when it was a young spotted fawn and was never confined. The little creature was kept in the patio of the house and was fed on hay, vegetables, and grass. It was perfectly at home, and when we went for a walk about the town would follow us through the streets like a dog. We frequently stopped at a small village on the borders of the forest, and always took "Pepito," as we named the deer, with us. He seemed to enjoy riding on the train, and the conductors, brakemen, and other trainmen all knew him and petted him.

While in the country Pepito was left free to roam as he pleased, but as there were many wild deer in the vicinity a bell was tied around his neck so that he would not be mistaken for a wild deer and killed by hunters. Early each morning the deer would trot off up the road, jump over the fence of the corral, and disappear in the woods. In the afternoon he would come back, visit all his friends in the village, and lie down contentedly in his bed on the veranda. Oftentimes, hunting far from the village, I would come upon a herd of wild deer, and frequently when I approached them Pepito would come bounding out from their midst to greet me. All the natives knew him, and he was never molested or injured in any way. When I left the country I gave Pepito to a friend, and so far as I know he is still alive and spending his days among his wild relations and his evenings and nights with his human friends.

Any of the deer family will become tame if brought up by hand and in the presence of human beings, but only the smaller species are suitable for pets. The little "Brocket" Deer of tropical America, the West Indian Deer, and the tiny, dwarf muntjac are the best species for pets. These are all delicate creatures and must be kept in warm quarters during winter in the North, but during summer they may be given a great deal of freedom.

Deer require very little care, they are clean and are not afflicted with vermin, and they may be fed on grass, hay, grain, and similar food just as readily as sheep or cattle.

ANTELOPE

Antelope also make very interesting and lovable pets. Our own native Pronghorn Antelope is a very graceful and beautiful species but is very difficult to raise. Many of the African and Asiatic antelopes are far more desirable. The Gazelle, the springbok, the beautiful "Harnessed Antelope," and various other species are frequently kept as pets in their native lands. These animals are all very easy to care for and feed, and if given warm quarters in winter they will thrive in our country perfectly well.

THE GOAT

Common goats are widely kept as pets, especially for the purpose of drawing tiny carts or wagons. The ordinary goat, however, is a very stubborn and obstinate creature and is far from beautiful. The silky-coated Angoras are far more attractive and are more gentle and easily trained.

The hardihood of goats is well known, and they will eat practically anything and everything which they can chew. In this respect common goats are often a great nuisance, as they will eat clothing, carpets, etc., if they are within their reach. It is said that Angoras are more particular in their tastes and prefer hay, grain, and vegetables to paper, tin cans, and rags.

Goats should never be kept where they can reach flower-beds or shrubbery, but should be kept in a wire-netting enclosure or a fenced yard. Cleanliness is very

important, and pet goats, deer, and antelope should be frequently washed, curried, and brushed to keep their hair in good condition as well as to remove the strong odor which characterizes many of these ruminants. If they are kept clean and in good condition this odor is not objectionable, but a dirty or unwashed goat is very disagreeable.

Deer are almost free from any odor, and for this reason are far better than goats for pets.

DWARF ANTELOPE

Several beautiful little deer-like creatures, found in Africa and elsewhere, make most lovable and attractive pets. The tiny antelope known to the South Africans as "duykerbok" is a very graceful animal, hardly larger than a good-sized hare and with greenish-brown hair. They are easily kept in confinement and are very gentle and affectionate but are seldom seen in this country. A somewhat similar species, known as the "klipspringer" by the Boers, is very abundant in Cape Colony and the neighboring districts. These little antelope are sometimes brought over by sea captains or sailors and are occasionally for sale at the stores of animal dealers.

Another small, deer-like creature is the "muntjac" of India and the Malay Islands. This species is about two feet high at the shoulder, and when adult has handsome little antlers. The color is yellowish-red, the chin, throat, and belly white, and the face and legs brown. These and the pygmy Philippine Deer are not

infrequently seen in menageries and at animal stores, and they make excellent pets. They are often called "Musk Deer" but are really distinct, about the only resemblance being in the projecting canine teeth or tusks which project from the lips in both the muntjacs and true Musk Deer.

PECCARY

Peccaries are wild pigs that are found in tropical America, but in appearance they are very different from ordinary swine. There are two species, the "White-Lipped Peccary" and the "Collared Peccary." They are both rather long-legged, high, narrow animals, covered with coarse hair or bristles. They live in immense droves or herds. When wild they are very savage and do not hesitate to attack any other animal, or even man, if their anger is roused. Their tusks are very sharp, and they can inflict terrible wounds by a ripping sideways sweep of the head. They are absolutely fearless when angry, and even after numbers have been killed the remaining individuals will fight to the death.

They inhabit deep forests and feed upon roots, herbage, and bark, and are much hunted for their flesh.

The white-lipped species is not attractive in appearance and is very difficult to rear in captivity or to tame, but the Collared Peccary is handsome in color and is readily tamed when taken young.

I have already mentioned a tame peccary which I had in Central America. This little fellow was cap-

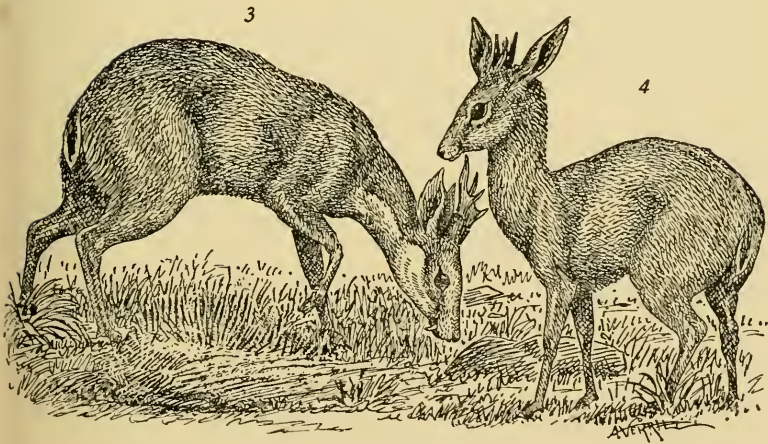
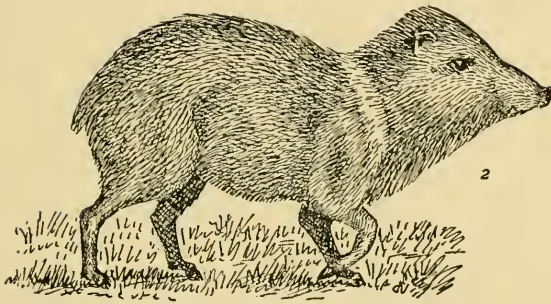
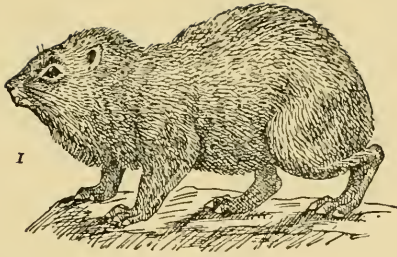
tured when a few weeks old and was raised by hand, but was never confined or tied. He took naturally to his domestic life and would romp and play like a puppy or a kitten. He was exceedingly fond of playing hide-and-peek and knew by instinct when he was discovered and would pretend to be terribly angry at being caught.

He would stand on his hind feet and beg for tidbits and would jump into a person's lap to be petted or caressed. Although he was very small, he had no fear of any other animal and when less than half grown would bristle up, charge at a stray dog in a perfect frenzy, and invariably put the intruder to ignominious flight.

He made his quarters on an old door-mat beneath the steps of the house and came and went as he pleased. During the day he would frequently travel off to the forest but invariably returned at nightfall. Sometimes he would accompany me on shooting trips and seemed greatly to enjoy the sport.

A tame monkey and the tame deer were his constant companions and friends and, although the monkey teased him continually, he never objected or retaliated. The two creatures would lie down together and fall fast asleep in the sun, and not infrequently the little monkey would leap on the peccary's back and take a ride.

This peccary was not an exception, for in many parts of tropical America I have seen peccaries playing with the children, and if taken when less than half grown and treated kindly they become very tame.



RUMINANTS AND HOOFED ANIMALS.

1. Cony.

2. Peccary.

3. Muntjac.

4. Duykerbox.

Unlike common domestic pigs, the peccaries are very cleanly in their habits. They are continually cleaning and arranging their coarse hair and seldom wallow when in captivity, although the wild peccaries are fond of burying themselves in mud. They are found as far north as Texas but cannot stand cold weather. They are sometimes seen in menageries and are now and then offered for sale by dealers.

CONY

The true cony of the Orient is a very different animal from the common rabbit which is known as "cony" to the fur dealers. The real cony is a most remarkable little creature, for it is a sort of connecting-link between the rodents and the ungulates, or hoofed animals. The cony, or "daman," has four toes on the front and three toes on the hind feet, but these toes end in regular hoofs instead of in claws, although they are furnished with pads like those on the feet of rodents and carnivorous animals. One species of the daman is found in Syria, Palestine, and other hilly parts of Asia; the other is native to Africa. They dwell among rocks and cliffs and are about the size of rabbits. They are very timid and alert, and when feeding they place a sentinel on guard who warns his fellows of danger by a shrill cry. The damans are brownish in color and stout and cavy-like in form. They are easily tamed and become very affectionate. They live upon grass, herbs, flowers, and young shoots of shrubs and are excessively fond of salt.

PART II—BIRDS

CHAPTER XII

CANARIES

GENERAL CARE AND CAGES

OF all small cage-birds canaries are the most popular. They are charming songsters and, being hardy, they require comparatively little care; they are easy to feed and may be kept in cages of small size. Moreover, canaries breed readily in confinement, and they have been used as cage-birds for so many centuries that they are really thoroughly domesticated and have lost practically all of their wild characteristics.

The style, size, and shape of the cage in which a canary should be kept depend upon your taste, your purse, the size and variety of the bird, and whether or not you keep a pair of canaries or a single one.

A single bird may be kept in a very small cage, but a medium-sized cage is preferable, and the square shapes are, in many ways, better than the round ones. The bottom of the cage should always be kept covered with fresh, clean bird gravel and should be recovered daily. The perches and swing should also be removed and scrubbed with hot water each day; and if you can

obtain gravel paper it is far better than the loose gravel—birds frequently eat too much loose gravel. A cuttlefish bone should always hang in the cage to enable the bird to secure salt and lime, and perfect cleanliness is very important. The water in the drinking cup should be renewed daily or even oftener, if necessary, and the food cup should be cleaned and new seeds given every day.

A canary should take its baths throughout the year, but it is not necessary for a bird to bathe daily; two or three times a week is enough. When the canary is to be given a bath the water and food cups should be removed, the bottom of the cage detached, and the cage set over the bathing dish containing about three quarters of an inch of water, with a layer of gravel at the bottom so that the bird may have a foothold in the tub. Many birds refuse to bathe because they slip on the smooth bottom of their bathing dish, and will bathe readily if gravel is placed in it. Some birds are very particular in regard to the shape and size of their bathtub, and will not enter it unless it suits them exactly. If a bird refuses to bathe when the ordinary dish is provided and sand is placed within it, try various shapes and sizes of dishes. I have known canaries that absolutely declined all the ready-made bathing dishes and readily took their bath when the water was placed in a shallow saucer. When the cage is placed over the bathing dish remove the perches and leave the bird undisturbed. Many birds are accustomed to using outside bathrooms, which are invariably used

in Europe. These bathrooms are arranged to hang outside the opened cage door, and imported birds that are brought up to use them will frequently refuse to enter any other kind of a bath. They are very inexpensive, costing but seventy-five cents, and every one owning a cage-bird should have one. Do not have the water too cold; in summer the regular city water will serve, but in cold weather it should be about the temperature of the room.

After the bath the perches should be replaced and the cage hung in bright sunshine for not over fifteen minutes to dry. A bird that is placed in the sunlight continuously, or daily at noonday, is seldom healthy or in good song. Most bird owners place their canary cages in or near a window, but in reality this is a great mistake. Birds are very susceptible to draughts, and even the tightest window is draughty, especially in cold weather. The same rule applies to leaving a bird in a room with an open window; fresh air may be all very well, but draughts are fatal to many birds. Sudden changes of temperature or excessive heat or cold are injurious, and a uniform temperature of from sixty-five to seventy degrees is the best. When it is necessary to move a cage with its inmate from one spot to another, do so carefully and slowly, not roughly or hastily; no matter how tame your bird may be, it will be startled and disturbed by a sudden or violent motion to its cage. When sweeping or dusting it is best to remove the bird to another room, as particles of dust will injure the voice of your pet. If the cage cannot be re-

moved sprinkle the floor with water before sweeping or tie a piece of cheese-cloth around the cage.

Many birds are hung high in a room or placed very low. In the first instance the bird is in the hottest and most impure air of the room, and near the floor it is exposed to draughts and is easily startled. About three to five feet from the floor is the best height, and if the situation is in a subdued light the bird will sing better.

At dark the bird should be put to bed just as regularly as a child. Wild birds naturally seek their roosts at dusk, but the household pet in a lighted room cannot do this, and although it may sleep more or less, its slumbers are often disturbed and it will be quite active long after its natural time for retiring. To maintain your canary in good health and song you should cover its cage with paper at nightfall, using one thickness in summer and three in winter, with the paper extending at least six inches above the top of the cage. The paper should fit closely about the lower part of the cage, and should rise to four inches above the ring by which the cage is supported, and this will prevent all draughts and will also furnish the darkness and cover which the bird requires for slumber. A shawl, towel, or cloth tied around a cage and left open at the bottom causes a strong draught upward through the cage, and is far worse than leaving the cage entirely uncovered. Even with the paper covering it is best to place the cage away from strong lights and noise, but it should not be placed in a cold room or hall.

Many canary owners allow their pets to fly about

the rooms, and if your bird is very tame and kept more as a pet than for song this will do no harm; but if you desire the best music of which the bird is capable do not let it fly about outside its cage. If it is necessary to remove the bird from one cage to another by hand, and your pet is not tame enough to allow you to hold it in your hand, you should wait until dark and remove it gently and firmly. Move your hand toward it slowly and quietly—do not grab it—and hold it firmly enough so that it cannot be injured in its struggles. Never grasp a bird by legs, wings, tail, or head; legs are easily broken, wing and tail feathers pull out, and your bird will be injured or killed by this method. Hold the bird around the body with the palm of your hand over its back and your thumb and fingers holding the wings closed.

When carrying a bird in a cage out-of-doors, always cover the cage completely with manila paper, using one thickness in summer, two in fall or spring, and three in winter. In summer two or three lead-pencil holes may be made in the paper.

FEEDING

The best food is the cheapest in the end with birds as well as with human beings. A great deal of the bird-seed sold in department stores, grocery stores, and drug stores is unfit for any bird to eat. Much of the seed is poor, mouldy, old, or even counterfeit. Turnip and mustard seeds are often substituted for rape and, while they are much alike in size and color, the one is

bitter and unhealthy while the other is sweet, rich, and nutritious. Even canary-seed varies in quality, and there is as much difference in the quality of canary-seed as in coffee or tea. The best regular food for the canary is a mixture of the best German summer rape and Sicilian canary-seed in the proportion of two thirds rape to one third canary-seed, and the rape should be the small reddish-brown kind, not the coarse black seeds. Many birds are overfed; a large teaspoonful, if placed where the bird can reach it all, is sufficient, for if too much is given the bird will eat all the canary-seed and leave the rape, which is bad for its health and ruins its song. If the bird selects all the canary-seed and avoids the rape, give more of the latter with less of the former—say about four fifths rape. If a few hemp-seeds are fed every other day from the fingers or lips the bird will become tamer and learn to recognize its master. Some of the highest bred Saint Andreasburg and Holden Canaries are fed exclusively on rape, but in most cases this is not necessary. A little apple or other fruit and some lettuce occasionally with chickweed in spring and summer are excellent, and a bird will be healthier and in better voice if some good, reliable tonic or song restorer such as Holden's is given two or three times a week, and daily in moulting time. The English breeds should be fed two thirds canary-seed and one third rape. Never feed the canary bread, cake, figs, candy, or sugar. Do not feed excessively one day and merely add a little seed to what is left in the cup from day to day. Empty

any seeds remaining in the cup and fill with fresh, clean seed. If any seeds remain in the contents emptied from the cup they may be saved by blowing away the husks, but seed is cheap compared with birds and it is best to throw away all old seed and to give fresh seed daily, reducing the amount given until nearly all of it is consumed.

BREEDING

The care of canaries kept for breeding is somewhat different from that required for pet or song birds, and the food must also be slightly altered.

It is very easy to breed and raise canaries provided you select good, strong birds and do not disturb them unduly. Care should be taken to choose birds that are not related, and they should become well acquainted before mating by placing the female in the breeding-cage and the male in his own cage, close together. Particularly nourishing food should be fed such as hard-boiled egg, with the white and yolk grated together, and a good tonic such as the song restorer already mentioned should be given every day for a week or so before the birds are placed in the breeding-cage together. Apple or similar fruit should be fed daily, and as soon as the two birds appear interested in one another the male should be placed in the breeding-cage with the female and left as quiet and undisturbed as possible for their love-making. The best time for mating is from early November until June, and once mated they will continue to breed until September.

The age of the birds mated is important; the male should not be more than four years of age, and birds one or two years old are preferable. The female may be slightly older, but both birds should be strong, healthy, and selected with reference to their color, size, song, and the results desired in the birds you are to raise. If color is the first consideration select birds which will produce offspring of the color desired. A yellow male and a light or whitish female will breed mostly clear yellow young, whereas both birds of deep-golden hue will breed golden-yellow young. A deep-yellow or gold male and a deep-green female will often produce the much-admired "filbert" or cinnamon colors in their young, and solid-green birds will usually have young of the same shade. You must remember, however, that all the colors, save the greenish-yellow, are the results of selection and breeding; and no matter how carefully you select the colors for breeding there will always be a tendency to revert to the original green color in the young birds. In other cases, the ancestors of the birds you select may have been very different in color, and the young birds you raise may have the shades and markings of the grandparents or great-grandparents of one or both of the parents.

As a rule, handsomely colored or large-sized birds are not good songsters, for they may have strong, heavy notes and not long or pleasing songs. Song breeding has been carried on to its highest stage of perfection in Germany, where the breeders make it an art; but the song of a canary depends as much upon training

and example as upon breeding. A canary reared where it hears the notes of a nightingale or other bird will imitate more or less the song and notes of that bird; whereas, if reared among other trained singing canaries, the song will develop accordingly.

For very large-sized birds the Manchesters or Lancashires are excellent. These are to be had both with crests and without them, and with crests so large that they cover the eyes. They are handsome, showy birds, with full-throated songs, and produce large, handsome young. The Norwich canaries are also large, and their rich golden-yellow or gold and green tints make them very desirable for breeding large, well-colored stock.

BREEDING-CAGES AND NESTS

The breeding-cage may be of either wood or metal, but the brass is easier to keep clean and is free from insects, which often find secure hiding-places in the crevices of a wooden cage. Moreover, the nests may be removed and the cage may be used for singing birds when not in use for breeding purposes. For one pair of birds the cage should be at least 8 x 10 inches, but larger cages up to 16 x 18 inches are even better. The young birds require plenty of exercise, and a large cage affords this and allows them to learn to fly and use their wings. Wooden-framed cages with tinned wire and a wooden nest platform are convenient for hanging against a wall, and if used exclusively for breeding and thoroughly disinfected now and then they serve very well. The best of these cages are provided with re-

movable partitions with deep zinc drawers and large cups, and have a second door at one end near the nest. The nests should be of wire, lined with cotton-wool flannel, and deer's hair, tow, horsehair, etc., should be provided so that the birds may construct the interior of the nest to suit themselves.

Plenty of gravel should be placed in the tray and some old plaster from a wall should be crushed and given to the birds daily, although crushed oyster or clam shells will do equally well. If this apparently small matter is attended to you will have little trouble with soft-shelled eggs.

While canaries are breeding their food should consist of equal parts rape and canary-seed, and every other day each pair of birds should be given one third of a hard-boiled egg, mixed with a thimbleful of powdered cracker, to which a little maw or poppy-seed is added. Fruit, chickweed, or lettuce should also be given daily.

The birds should now be left as much alone as possible. No one should disturb them except to furnish fresh food and water, to clean the cage daily, and to furnish a bath twice a week. The birds may quarrel at first, but unless these family spats are severe a divorce is not necessary, and the pair will usually make up and forget their differences in a few days. If the fights continue and are severe the male should be taken away and placed in his own cage. "Absence makes the heart grow fonder," and after a few days of solitary confinement he may be placed in the female's

cage, and nine times out of ten there will be no further trouble. If the pair still quarrel, they must be really divorced for good and all and a new mate tried for one or the other.

Some birds which mate readily and get along well enough appear to be in no hurry about commencing housekeeping and waste two or three weeks in honeymooning. Even then they often build a nest in the morning and tear it to pieces in the afternoon. Do not worry over this but feed more fresh egg in the afternoon, and if the birds do not fight you will sooner or later find they will get busy and build and raise their young.

The first egg is usually laid on the eighth day after mating, and each day thereafter another egg is laid, until from four to seven eggs are in the nest. Sometimes the eggs, as fast as laid, will be eaten by the birds; this is usually because they are poorly nourished or do not receive enough rich food. Give more boiled-egg paste and continue rich feeding until the young are old enough to eat seeds. If either bird seems inclined to destroy or throw out the eggs they may be removed from the nest with a spoon each day as soon as laid, and on the afternoon of the day on which the third egg is laid the eggs taken from the nest should be replaced, as at this time the female will go on the nest to lay her fourth egg and will sit closely thereafter until the eggs have hatched. The female will sit for thirteen days, and the eggs will hatch out in the order in which they were laid, one egg a day exactly to the

hour. If any eggs should fail to hatch on time, let the female remain undisturbed for three or four days, then remove the eggs that do not hatch. In case none of the eggs hatch after a few days' overtime remove them all and give a new nest.

If the male behaves well he may remain with his mate while she sits, but if he disturbs her he must be placed in his own cage. As a rule, he will sit on the eggs when his mate is off, or will feed her as she sits. During this time both birds may be given a bath twice a week.

REARING THE YOUNG

The old birds will feed their young if proper food is provided, and the best food for the purpose is the boiled-egg-and-cracker paste. In many cases, where the old birds are healthy and strong and good parents, a second nest may be made and a second laying started, while the father continues to feed the first brood. If, on the other hand, the father becomes ill-tempered or is more attentive to his wife than to the young, it is best to separate the old birds until the young can feed by themselves and fly about in the cage. They may then be placed in another cage and the male returned to his mate.

Birds are often like human beings, especially when they are a newly married couple with their first babies, and they often feed their young far too much or too little. At such times the youngsters may be transferred to the attention of an old-maid aunt or a

bachelor uncle, who will adopt the brood and use a great deal more sense in caring for them than their own parents. At times you may be obliged to raise the young by hand. If, instead of full crops, plump breasts, and fat pot-bellies, the young birds are thin, scrawny, or dwarfed, you should commence artificial feeding at once. Cut a hard-boiled egg in two, moisten the yolk slightly, scrape up some of the egg with a sliver of wood, making it very moist, and feed each young bird in turn. Usually, however, the old birds will feed the young all right if furnished plenty of egg paste, apple, chickweed, etc. Sometimes a female may "*sweat*" and mat the plumage of young birds by sitting too closely. If this occurs wash the female in slightly salt water, afterward rinsing in fresh, warm water, and dry her gently and rapidly with a hot, soft cloth, after which sprinkle her feathers with sherry wine. Meanwhile the male may be placed in an adjoining apartment, where he can feed the mother through the wires; and when she is placed in the cage he will at once call her and feed her and she will quickly recover her good spirits.

The young birds should be confined to the nest until three weeks old, by which time they should be able to perch and flutter about. If the mother attempts to pull or eat their feathers, the young should be taken from her and given to the father in a separate cage, where he will care for them as long as they require attention. When six weeks of age the young will be able to crack and eat soaked rape-seed and may feed themselves.

Young birds of the same age may be kept together in one cage for a long time, but if birds of different ages are placed together the older ones may pick the feathers of their younger relations and injure them. Birds ten to twelve weeks old should be fed upon one tenth canary-seed and nine tenths rape if they will eat it, as this will make them grow faster and they will be far stronger and healthier than if given more canary-seed.

As soon as young birds commence to quarrel they should be separated, and the young males should be placed near a selected songster to learn how to sing; for, oddly enough, young birds do *not* sing naturally or inherit their notes any more than a child inherits a knowledge of its parents' language.

Young canaries moult only their body feathers the first year and commence to shed them as soon as fully feathered—at about six or eight weeks of age. The large wing and tail feathers are shed when the birds are about one year old.

Young birds begin to warble or attempt to sing when about eight weeks old, and the males may thus be selected from the females.

DISEASES

Canaries, when well cared for and properly fed have very few diseases, and most of their ailments arise from cold draughts, poor food, and dirty water or cages. When a canary is sick or infested with insect pests it

will sit puffed up, often remaining on its perch and puffing or gasping or hopping about on the bottom of its cage, and continually eating. These are usually the symptoms of a cold, which should be cured as soon as possible. The paste, made from one third of the yolk and one third of the white of a hard-boiled egg mashed with as much red pepper as will stay on a ten-cent piece and with two or three drops of olive-oil thoroughly mixed, should be given. Two to six drops of whiskey should be added to the drinking water, which should be warmed, and the bird should be kept in a quiet, warm spot. If the bird will not take the whiskey and water use a medicine dropper and drop a little in his mouth every two or three hours. A small piece of raw, fat salt pork should also be hung in the cage, and a fresh piece given daily.

Loss of Voice.—A bird may lose its voice through a cold or by singing too much. In the latter case, dissolve a piece of rock-candy the size of a pea in the drinking water, feed the egg paste, and keep the cage covered so the bird will not sing. After several days the voice will return.

Hard Breathing or Asthma.—This often results from a cold and the same cures should be used, with the addition of raw fat salt pork cut into bits and sprinkled with red pepper. A teaspoonful of warm milk with a little bread and a bit of sponge-cake sopped in sherry wine may also be given. The canary-seed should be withheld and the rape soaked so that there is no dust on it and the hulls are softened.

Diarrhœa.—This is also caused by colds, by poor or mouldy seed, or by dirty drinking water. The remedy is to cure the cold, change to better seed, and keep water clean and fresh. Use a medicine dropper and give the bird three to four drops of olive-oil; put a few drops of brandy and a rusty nail in the water and place some pulverized chalk in the cage with the gravel. If the trouble continues for over twenty-four hours place two to four drops of paregoric in the water. The cage should be cleaned and fresh gravel paper or gravel given at least three times a day.

Constipation.—This often troubles canaries and may be cured usually by four to six drops of castor-oil dropped in the bird's mouth or used as an injection. Feed apple and freshly grated carrot with a little pulverized sugar, and if it is a severe case put a few drops of glycerine in a teaspoonful of warm, soapy water, and give as an injection with a dropper.

Fits and Epilepsy.—These are caused by too rich or too much food, too frequent mating, or by severe fright. Hold the cage in fresh air and sprinkle the bird's head with a few drops of cold water. Placing a cage in sunshine often causes severe fits, and in such cases smelling-salts may be used to advantage. Decrease the rich canary-seed and feed more rape, and every second day feed a little cracker soaked in milk.

Inflammation of the Bowels and Rupture.—These diseases are caused by rich food, sour food, or bad water. The symptom is a sort of weakness. The bird sel-

dom rises on its feet, but mopes with its body resting on the perch and does not sing. Change the diet and clean all the cups and the cage. Dip a fine, soft brush in spirits of turpentine and paint the inflamed abdomen and treat as for constipation, and add a few drops of gum arabic to the drinking water each day. The food should be very light—biscuit soaked in milk every three hours—and five to ten drops of brandy should be added to the drinking water until strength is regained.

Cramps.—Cramps are produced by a dirty cage or too small a cage. Immerse the legs in water as warm as the bird can bear; give a larger cage and place two drops of laudanum in the drinking water. Do not let the bird bathe more than twice a week.

Pips.—This is a small swelling on the bird's rump. It should be lanced with a needle and rubbed with cold-cream.

Surfeit.—This is a light eruption on the body with baldness appearing on the head. Feed only plain rape-seed with a piece of apple each day and rub the bald spot with a simple ointment.

Yellow Gall.—This is easily recognized by small ulcers or pustules which form around the eyes. A change of food is the most important dietary item. If the bird has been having plain food change to a richer diet or vice versa. Prick or cut the ulcers and rub with a strong solution of sugar of lead in water. Bathe the ulcers with this solution three or four times a day until healed.

Sore Feet.—Many birds suffer from sore feet, which are usually caused by dirty cages or perches or too much canary-seed. The feet should be thoroughly cleaned by soaking in warm water and wiping dry and should then be rubbed with glycerine or some healing ointment. Old birds sometimes have sore feet which are caused by scaly growths. Anoint the parts with cold-cream and, after two or three days of this treatment, scrape off the scales with the back of knife or smooth stick, being careful not to break the under skin. After the scales are removed continue the cold-cream until thoroughly healed.

Swollen or Red Feet and Legs.—This usually comes from too little green food and too much canary-seed. Feed only rape for three to six months and give a small piece of apple every day or two, and keep the bird out of the sunshine.

Pulling Feathers.—Some birds pull their feathers from the wings or body. This is the result of bad blood, and may be cured by feeding rape and apple and some good bird tonic or song-restoring compound.

Growth over Beak.—Another blood trouble requiring the same remedy causes a hard growth over the beak. This may be touched with vaseline each day until it drops off.

When the claws of a bird grow too long or crooked they should be trimmed. If the nails are held up to a strong light the veins may be seen, and the portion beyond the veins should be cut away with sharp scissors. If a bird is provided with cuttlefish and gravel

the bill will seldom become too long, but if it does it must be trimmed carefully with sharp scissors and scraped smooth with a knife; but it is always better to have a regular bird-fancier do this than to attempt it yourself.

Red Mites.—Many birds are terribly troubled with red mites. These seem to arrive spontaneously regardless of care. The symptoms are a puffed-up appearance with scratching, shaking, and pecking at the body. Place a white cloth, with creases or folds, over the cage at night, and if the trouble is red mites some of the insects will be found in the folds of the cloth in the morning. In that case, remove the hollow ornamental knob from the top of the cage, wash it, and fill it with insect-powder and replace it. Remove the bird from the cage, hold him firmly in your hand, and rub the powder well into the feathers. This process should be repeated every other day for four times or until all the pests are destroyed. If a wooden cage is used place the bird in another cage and scald and clean the old one with a strong soda solution and revarnish it before using again. The red mites when young are blackish or dark brown, but after eating the blood of the bird they become red.

Moulting.—Moulting is sometimes a critical process with birds. After the first year the birds moult regularly during July, August, or September, and the process lasts from six to ten weeks according to age. During this time the birds should be given strong, nourishing food and should be kept from draughts.

If the bird moults at any other time it is a symptom of a cold and should be treated accordingly.

Mice are often a serious menace to canaries. They are fond of seeds and appear to admire the birds, and if they enter a cage will often remain for hours at a time. The visits of these rodents cause a bird to lose its liveliness and song and to sit puffed up in a dejected manner. Destroy the mice or so hang the cage that they cannot reach it.

The above treatments, diseases, and methods of feeding and care apply to nearly all the seed-eating, song, and ornamental birds described in the following chapter; and where any different treatment, care, or food is required it is described in detail. Unless otherwise stated, the care and feeding are the same as for canaries.

VARIOUS BREEDS OF CANARIES

Most of the canaries kept in America are raised in England or Germany, although many birds are reared in this country. The great difference between the German and British birds is that the Germans have devoted all their energies to rearing song-birds, whereas the English breeders have aimed to produce large sizes and high colors. The greatest number of German canaries are raised in the Harz Mountains and are known as "Harz Canaries." They are medium-sized birds of various colors but noted everywhere for their singing powers.

Even the Harz Mountain birds are not all equally

fine songsters, and there is keen rivalry between the various breeders to produce the finest singers.

There are bird shows and singing matches in the breeding districts, and prizes and blue ribbons are awarded, so that the men noted for producing prize winners are soon known far and wide, and buyers from all over the world contract for their products. Our American buyers often contract for the birds months before the eggs from which they are to be raised are laid, and two years before the birds will be furnished; so that in this business the bird dealer is literally "counting his chickens before they are hatched"; and many times he sells the birds to some customer long before the bird itself is in existence, so certain is he of the quality of the song which a bird will have when furnished by a certain breeder.

Probably the best of the Harz Canaries are bred in the neighborhood of the village of Saint Andreasburg, and these birds are famous for their soft and varied song; and one who has never heard a Saint Andreasburg sing does not realize what bird music really is.

THE SAINT ANDREASBURG CANARY

The Saint Andreasburg Canary usually sings in the evening, but if he is wanted as an evening singer his cage should be covered and placed in a dark spot for two or three hours in the afternoon. This is one of the smallest breeds of canaries—from $4\frac{1}{2}$ to 5 inches long—and the birds are usually light mealy-yellow or yellow and green in color.

THE CAMPANINI HOLDEN

The Campanini-Holden Canary is a superior breed of the Saint Andreasburg strain, raised and bred by the most skilful and successful breeders for Mr. George H. Holden, of New York City, who is noted throughout the world as an authority on canaries. Many of the Holden breed have regular scale songs and a range of nearly three octaves, with a wonderful, soft, full, melodious voice.

THE ENGLISH CANARIES

The English Canaries are louder-voiced, larger-sized, and brighter-colored than the Germans, but they are greatly admired and possess many odd wild-bird notes. The Manchester Canaries are long and thick in build and are the largest of all canaries. Some have plain heads, others have thick, full crests, and the colors may be either yellow or green. The all-green crested birds are particularly handsome.

The Norwich breed is not quite so large, but the colors are much richer, deep gold predominating either in solid color or mottled, and the odd cinnamon or brown colors are also common.

THE RED CANARY

The Red Canary is produced by breeding from the gold or gold and green breeds, and when the young are about eight weeks old and commence to moult they are fed Cayenne pepper. Some of the imported

birds are clear Cayenne red, others are a combination of green and red. The birds will lose their red color when they moult if not fed red food, which is now sold by all bird dealers; and this may also be mixed with egg for coloring young birds of ordinary colors.

THE GOLD-SPANGLED LIZARD CANARY

Gold-Spangled Lizard Canaries originated in England, and when well bred are very beautiful. The heads are capped with bright gold and a continuous line of spangles runs from the neck down the back. Each spangle is olive-green with a clear gold edging, and the pattern is very decided and regular. The Silver-Spangled variety is similar, but the light edgings are silvery white instead of golden-yellow.

Many very beautiful canaries are so-called "mules," obtained by crossing the canary with some other bird. The "Goldfinch-Canary Mule" is a beautiful bird—often mostly snowy white with a red face like his goldfinch father, and with the same brilliant golden wings. These mules also have a charming song with the combined canary and goldfinch notes. This particular mule is secured by mating a male goldfinch with a light, clear-yellow canary of very pure breed. Other mules are obtained by mating female canaries with male linnets, siskins, bullfinches, chaffinches, and other finches. Some of these cross-bred birds are wonderfully striking and handsome, and some have songs which far surpass those of either of their parents.

CHAPTER XIII

SONG AND ORNAMENTAL CAGE-BIRDS

CAGES AND AVIARIES

ASIDE from canaries, which are the commonest of all cage-birds, there are a great number of exceedingly beautiful and attractive song and ornamental birds which are readily kept in cages and make charming pets.

Some of these are both beautiful in plumage and pleasing in song, others are lovely songsters but dull or modestly colored, while still other species are handsome or brilliant in color but lacking in musical attainments.

Many of these little creatures thrive and breed in small cages, either in pairs or with several individuals together; and many of them are as easy to rear, being as hardy and as suitable for home pets, as canaries.

A great many of the more ornamental species are very small and lively, and to thrive best and exhibit their brilliant colors to greatest advantage they should be kept in large cages or aviaries. They usually get along well together, and a large cage filled with a variety of these feathered pets is a beautiful and attractive thing.

For an ordinary room a large brass cage which will accommodate six to ten small birds will be quite large enough; but if a larger aviary is desired it may be constructed of a light wooden framework covered with wire netting. It is surprising how a fairly large bird can so reduce its size as to squeeze through the opening in a wire netting, and you should be careful to use a netting with a mesh small enough to prevent the very smallest of your pets from squeezing through.

In constructing a large cage the floor should be arranged in such a way as to be easily cleaned. A large zinc tray should be provided, and this should slide readily into the cage over a permanent wooden or metal floor. Suitable openings or stands for drinking and food cups should also be provided, and the cage should be fitted with a number of perches or the branch of a tree, for most of these ornamental birds love abundant exercise and fly and hop about incessantly.

FLYING-CAGES

If the bird lover is fortunate enough to have a warm outbuilding, or even a room in the house which he can devote to his pets, he may fit up a large "flying-cage." Such a device may be made by merely partitioning off a portion of the room with wire netting, and the cage may be large enough to permit the owner to enter for the purpose of cleaning it.

Most of these ornamental birds become very tame, and after a short time will not be at all disturbed at your presence within their home. The floor of a flying-

cage should be made tight and should be covered with a good layer of gravel, and potted plants, palms, and small shrubs may be introduced.

A large dish or vessel of water may be placed in the cage and arranged to imitate a little pool, and this will serve for a bathtub for the birds. Such an artificial pool may be connected with a pipe from the water supply with an overflow leading to a drain or outside the building, and a constant supply of fresh, clear water may be thus provided.

In a large flying-cage it will not be necessary to renew the gravel every day, but once a week or so the gravel should be raked over, the foul upper portion thrown away, and a new layer placed in the cage. If the cage is not large enough to admit your body you can easily arrange it in such a way that you can reach inside to remove the plants and renew the sand, etc.

The cage should be well equipped with natural branches, perches, swings, etc., and a few hollow branches or stumps should be furnished for nesting sites. Many of the small cage-birds will nest and raise their young in such a cage if provided with suitable nest material, such as tow, hair, wool, cotton, feathers, etc., and one of the most interesting features of a large aviary or flying-cage is to watch the little pets building their nests and teaching their babies to fly. Some of the hollow branches should be fastened in the upper part of the cage, while others should be placed close to the floor. If real, natural, hollow limbs are not easily acquired you can readily make artificial

ones from boxes covered with natural bark, or a section of a branch or small tree may be split lengthwise, each half hollowed out, and the two pieces fastened together to form a hollow branch.

Some of the birds breed in hollows, others on the ground, others among grass or low plants, and others in nests constructed among the branches of bushes or trees, and materials for the various types of nests should be furnished.

The size of the cage is immaterial and should be governed by the number and kind of birds you keep in it. If you devote the cage to the small foreign finches, little paroquets, etc., a cage 6 feet high by 4 feet square will hold a great many; but if you wish larger birds, such as troopials, thrushes, cardinals, and cockatiels, you must either have a larger cage or fewer birds. It is better to have too few rather than too many birds, and in a large cage even a few birds will show well, for they fly and move about so rapidly that there appear to be a great many more than there really are.

In selecting the birds for an aviary or flying-cage you must choose those which get along well together. Never try to place any of the jays, blackbirds, crows, magpies, or orioles with the small finches, for the larger species will often destroy the nests and eggs of the others or will kill the young. Nearly all the members of the finch and sparrow family do well in a cage together; and blackcaps, larks, Japanese Robins, and thrushes, as well as small paroquets, will usually get

along peaceably with the finches. It is wisest, however, to have separate cages for different classes of birds. Thus finches and sparrows may be kept in one cage, paroquets and love-birds in another, thrushes and other soft-billed birds in another, and the orioles, blackbirds, and other medium-sized species in a fourth.

Most dealers in birds can tell you which species will do well together, but in many cases actual experiment is the only means of ascertaining which species will dwell in peace in one cage. If any member of the community shows signs of creating a disturbance or quarrelling with the other inmates of the cage, it should be removed at once and either traded for some other bird or kept in a separate cage.

It is rather difficult at times to capture a bird in a large cage without injuring it or frightening its companions, and it is best to use a soft net on a long, light handle, and to place this over the bird at dusk or after the birds have gone to roost. The net may be used to hold the bird from fluttering until you can grasp it in your hand, but most birds will become "finger tame" and may be taught to come to you at a call. Every lover of cage-birds should try to have his pets so tame that they will readily perch on his shoulder or hand, or will fly to him when called.

TRAINING BIRDS

This is a matter easily accomplished, but patience is needed; and if you are not patient and persevering

you had better not attempt to tame birds, or, indeed, any other pets.

Many birds, through natural individuality, will never become tame and should be exchanged for birds of a more tractable or intelligent character. Nevertheless, you should not condemn the bird too soon but should persevere until thoroughly convinced that it will not become tame. When such an obstinate individual *does* become trained it will prove far more docile and intelligent than many others which are easier to tame in the first place, and it will have a greater affection for the person who tamed it.

Some birds are far easier to train than others, and in the following descriptions of various cage-birds the species particularly adapted to taming and training are designated.

Whenever possible, young birds should be purchased; they are easier to tame and train, are healthier, and will live longer. Do not hesitate to buy a bird with worn, ragged, or broken plumage if it appears healthy, intelligent, and tame. Feathers are transient things, and if given proper care and food and ample room the bedraggled creature will blossom out in all its natural glory after the next moult.

A very good method of training a bird to perch upon the finger or to fly to your hand is to tease it with a soft feather through the open door of the cage. At first the bird will flutter and be frightened at the intrusion but presently will attack the feather, and as soon as it pecks at it it should be withdrawn. After

this has been repeated a few times, try your finger in the same way and gradually withdraw it more slowly each time. Probably the bird will follow the finger from the cage, imagining that its attacks are driving it out, and very soon it will perch upon the finger itself. A few choice seeds or bits of some favorite food may be placed on the hand near the finger, and very quickly the pet will learn that each time it sees the outstretched finger it will get a treat if it perches on it.

If on each occasion some peculiar call or whistle is given the bird will associate this with the food and will readily come to its finger perch when called. From this it is an easy matter to induce the bird to perch on shoulder, head, or arm, or to take food from lips or hand. In a surprisingly short time the bird will come from a distant part of the room or house at the call, and in time it may be taken out-of-doors and called when wanted. It is not advisable, however, to take even the best-trained birds with unclipped wings into the open air in mating time, for at that season they often develop a fondness for a wild life and disappear never to return.

Another method of training birds is to cut away some of the long wing-feathers, as shown in the illustration, so that they cannot really fly but can flutter safely to a perch or to the ground, and in such a way that the wings when closed will not show the mutilation.

Holding the bird firmly in the hand, smear a little oil of bergamot over the nostrils and place the bird

on your finger. The oil will have a sort of stupefying or quieting effect on the bird which will not injure it in the least and is only temporary, and it will probably remain on the finger readily. If it flutters off replace it, and keep this up until the effects of the oil have passed off, by which time the bird will usually be content to remain perched on the finger if not disturbed or frightened. Just at this time a few hemp-seeds or a little green food or apple should be given it, and the operation repeated daily until the bird will perch on the finger and take food from the hand or lip without using the oil.

Other birds are more readily tamed by placing them in a small cage with a door large enough to admit your hand. Remove all food and in two or three hours gently open the door and place a small seed dish inside the cage with your hand. The bird may flutter wildly and refuse the food, or it may eye it hungrily, hesitate a moment, and then hop down and eat the seeds while you hold the dish.

If it refuses to do this and flutters, remove the dish and try again a few hours later, and in most cases the second or third trial will find the bird quite hungry enough to eat the food from the dish held in your hand if you do not move it too rapidly or suddenly.

After this much has been accomplished, place a little seed in the palm of your hand and offer it. As soon as it takes this, try holding a finger in a convenient position for the bird to perch on when eating. Very soon the little chap will learn that your appearance or

your hand signifies food and will welcome you accordingly, and you will have little trouble in taming it.

Birds which are intended primarily for pets should be fed frequently by hand, should be talked to and petted, and always given close attention, and should be kept on your table or close to you where they will become accustomed to your presence and will grow very familiar.

Aside from merely taming birds or teaching them to feed from your hand, you can train many species to perform interesting tricks, such as firing off a toy cannon, ringing a bell for food, drawing up food or water to the cage, etc.

The last trick is taught by having a cage with a projecting bow window with a small hole, and across this opening a narrow bridge of wood is placed with a small chain attached to it. The other end of the chain or cord is fastened to a small bucket about the size of a thimble. When the bird is thirsty the bucket should be filled with water and drawn up and the bird should be allowed to drink. It may then be lowered and pulled part way up.

By gradually increasing the length of chain between the bridge and the bucket the bird will soon discover that to drink it must pull the chain into the cage and hold it there, and it will of its own accord learn to hold the chain in position with its feet.

The bird may be taught to ring a bell by placing the bell in a corner of the cage with its string near the perch. Leave the bird until hungry, and as you place

the food in its cup ring the bell. It will soon realize that the food and bell are associated and will learn to ring it itself. If at any time it accidentally rings the bell, be sure to give it some dainty morsel and it will learn very rapidly.

Goldfinches, canaries, and Java Sparrows which have been taught these tricks are often sold, but any boy or girl can easily train them without much trouble.

THE EUROPEAN GOLDFINCH

The common European Goldfinch is one of the most satisfactory cage-birds. It is a splendid songster, is highly ornamental, and is one of the most intelligent and readily trained of all birds. The goldfinch is a hardy, long-lived bird, and specimens have been known to live for twenty years in one family. In color they are very attractive creatures, with a scarlet face, white cheeks, black head, and white breast, brilliant golden and black wings, black and white tail, and a golden-brown back.

In a wild state they feed upon various seeds, and in confinement they should be fed on equal parts of maw, hemp, rape, and canary seed.

Young birds, however, have soft bills and should have the hard canary and rape seed soaked to soften the hulls, until they are two years old. Unlike most wild birds, the goldfinch does not mope or become dispirited even when captured fully grown, but will at once feed and act as happy and contented in its cage as though bred and raised in captivity.

The goldfinch breeds readily in confinement, and the majority of the birds sold were reared in cages. The goldfinch sings freely throughout the year. Its song is in rather a high key and consists of numerous warbles, trills, and twitters which have a decidedly charming and wild character, and while singing the bird is in constant motion.

Goldfinches mate in April and require the same care in breeding as canaries, but the birds used for songsters should be kept *only* in square cages. It may be well to mention in this connection the fact that certain kinds of birds, and even certain individuals of a species, require certain forms of cages in order to thrive and be content.

One often sees a caged bird that constantly flutters its wings, keeps looking upward or bending back, or lighting on the sides of its cage. This always indicates that the cage is unsuitable, and another form of cage should be tried.

Many birds will not be content in a cage with an open wire top but must have a cage with a wooden or solid roof. If no roofed cage is available a paper or cloth may be fastened over the wire top, and in large cages containing a variety of birds the roof may be partly covered with some opaque substance to afford shelter for such birds as desire a covered cage.

THE BULLFINCH

These delicately colored, handsome birds are natives of Europe and are great favorites as cage-birds. Al-

though they have no attractive natural song, they possess a wonderful power of accurately imitating any tune or song which they hear. Their voice is very sweet and flute-like, and the bird has a wonderful amount of execution and technic.

In some parts of Germany many bullfinches are taught to whistle and are sold throughout the world. The teaching and rearing of these birds are carried on principally by tailors, weavers, shoemakers, and other tradesmen who are confined mainly to rooms or small shops and can thus give their pets constant attention. The tune is whistled to the birds several times each day, in the morning and evening, and great care is taken invariably to whistle the tune in exactly the same key while the bird is kept in a darkened place and is not allowed to hear any other tune.

These birds are taken when young and are reared by hand. They are always tame, eat readily from the fingers, and are frequently taught several airs before their training is considered complete.

Some of these educated bullfinches are valued at hundreds of dollars. In fact, while an ordinary uneducated bird may be purchased at three or four dollars, a bird which pipes a single tune is worth twenty-five dollars or more, and the value rapidly increases with the number of songs and range of notes the bird has been taught.

In color the bullfinch is very attractive, the breast being soft reddish or salmon, with a delicate grayish back and blackish head. The plumage is very soft and

silky, and the bird always has a sleek, well-kept appearance.

The bullfinch should be fed mainly on rape, with a little canary-seed and a few hemp-seeds now and then. Fresh apple and green food should be given occasionally, but sweets, candy, and cake should *never* be fed if the bird is kept for its song.

The nails of this bird grow very rapidly and require cutting twice a year; but if handled carefully this is easily done, for bullfinches are always docile, gentle creatures, with quiet, lovable dispositions. Their diseases are not many, and the treatment of them is similar to that in the case of the canary.

THE SISKIN

The European Siskin, a member of the sparrow or finch family and a favorite cage-bird abroad, is rapidly becoming well known in America.

The siskin is a rather dull-colored bird of a yellowish-green tint, marked and shaded with blackish and with a black crown on its head. It is an extremely neat, trim little bird with a short, low song.

Siskins possess the power of quickly imitating the notes of other birds and are easily tamed and educated. Their proper care, feeding, and treatment when ill are similar to those in the case of the goldfinch, but as they are apt to overfeed care should be taken to limit the amount of food they receive.

THE CHAFFINCH

This is another of the European wild finches which is widely kept as a cage-bird. The plumage is soft and sleek and attractively colored with yellowish-gray, white, and black. The chaffinch is a very gentle, easily tamed bird, and will readily learn many tricks. The natural notes, though soft and mellow, are not very attractive, but the birds vary a great deal in the variety and range of their notes.

Among the Germans chaffinches are very highly prized, and many German workmen will live upon the simplest and most meagre fare in order to accumulate enough money to purchase a chaffinch.

In many parts of Europe regular contests or singing matches of chaffinches are held, and the bird that sings the greatest number of perfect notes within a designated time wins the prize.

Their general care and food are the same as for the canary, but in the spring a limited amount of hempseed should be given to induce better song.

THE LINNET

The term "linnet" is applied to several species of American and European finches, but the cage-bird of that name is the "Rose Linnet" of Europe, which in its various stages of growth and plumage is known as a "gray," "yellow," or "green" linnet.

The first year the bird is grayish with no red on the head, but at the second moulting yellow feathers de-



SONG AND ORNAMENTAL BIRDS.

- | | |
|---------------------------|--------------------------|
| 1. Lavender Finch. | 5. Cutthroat Sparrow. |
| 2. Crimson-Eared Waxbill. | 6. Orange-Cheek Waxbill. |
| 3. St. Helena Waxbill. | 7. Japanese Robin. |
| 4. Avadavat. | 8. Red Linnet. |

velop on the breast, and in the third year the forehead and sides of breast become red, while the grayish color gives way to a ferruginous tint. Later in life the brilliant colors again give place to dull browns and grays.

In confinement this bird shows many unusual and unexpected color varieties, and one cannot judge of the bird's age by its plumage.

It is a beautiful songster of a docile disposition, very hardy and easily tamed, and a constant singer. It is fond of bathing both in water and sand and should be given a water bath daily and furnished with abundant fine gravel. The care, food, and treatment for diseases are the same as for the canary, except that a few hemp-seeds now and then maintain a linnet in better song than when plain rape and canary seed are fed.

BRAZILIAN CARDINAL

This is a very handsome tropical bird, which is among the finest of cage-birds. The colors are very striking, being dark-gray on the back, with the lower parts of body white; the head, crest, cheeks, and chest are blood-red or orange-red, and the wings and tail nearly black.

In addition to its attractive plumage, the Brazilian Cardinal is a charming songster, possessing a flute-like whistling note much like that of the common Virginia Cardinal of the United States.

This bird should be fed on unhulled rice, canary-seed, a little hemp and sunflower-seed, an occasional piece of apple or banana, and any insects that it will eat. It

is fond of bathing and is very active and long-lived and subject to few diseases.

THE JAVA SPARROW

These charming little sparrows are the cheapest of all cage-birds and may usually be purchased for a dollar or a dollar and a half apiece. Although a Java may occasionally be found that really sings, yet, as a rule, they are very silent birds and are kept because of their sleek, satin-like plumage, affectionate disposition, docility, and the ease with which they learn to perform many tricks.

Unlike most small birds, the Java Sparrows will perform their tricks at command. They are very affectionate, and where a pair or more are kept together they spend most of their time dressing one another's plumage.

White Java Sparrows are a good deal more expensive than the gray ones but are very attractive on account of their snowy plumage and pink bills. They add a finishing touch to an aviary or flying-cage, and show off the more brilliantly colored plumage of other birds by their contrast. Java Sparrows have an odd habit of facing each other and chirping and dancing along the perch with bowed heads in a sort of bird minuet which is very comical.

They are long-lived birds, free from most diseases, and should be fed on millet and canary seed, with unhulled rice or "paddy," when it can be procured. These birds thrive well in very small cages, as they are

quiet and deliberate and seldom mar or wear their sleek feathers. They breed readily in confinement and are careful and affectionate parents.

FINCHES

Under this name bird-fanciers include a very great number of charming little birds of various hues and sizes; some notable for plumage alone, others for their songs, and others for combined beauty of feather and song. Among them we may find almost every imaginable color and combination of colors, for they come from various parts of the world. Gray, brown, coal-black, blue, turquoise, green, red, white, yellow, fawn, and many other shades occur among them, and a large cage or aviary filled with an assortment of fancy finches is a beautiful sight.

Most of the species get along nicely together, and one may often see a cage with two or three dozen of the little birds sitting side by side and constantly caressing and preening one another. They breed very readily and make nests in which several cuddle together for shelter and warmth in cold weather.

There are so many species of birds included in this group that it is impossible to mention them all, and only the more common and desirable varieties can be described.

Among the most striking of the fancy finches are the "*waxbills*." These are attractive little birds with red, wax-like beaks.

The commonest variety is the *Saint Helena Waxbill*,

an African species that is imported in large numbers. The beak, like that of the other so-called "waxbills," is bright red; a dark-red streak passes through the eye and there is a shade of red on the belly. The rest of the plumage is grayish-brown, but each feather is striped with delicate, blackish, wavy lines, which give the birds a peculiar soft and silky appearance.

The *Orange-Cheek Waxbill* is another smooth little bird with a gray head and neck and brown throat and waxy beak.

The *Zebra Finch* or *Orange-Breasted Waxbill* is one of the smallest of cage-birds, being scarcely three inches in length and striped with dark and light colors with a dull orange patch on each side of the head.

The *Crimson-Eared Waxbill* or "*Cordon Bleu*" is another African bird of great beauty. The male is a good songster and often sings a low, crooning song to himself. This bird has a peculiar habit of singing with a bit of twig, straw, or twine in his beak, and with such an object will hop about and sing for hours at a time.

Another group of finches known as "*nuns*" includes several very attractive birds which should be in every aviary.

Nuns are known as "*Black-and-White-Capped*," or "*African Manikins*," and as "*Japanese Nuns*." There are also "*Brown*," "*Brown-and-White*," and "*Yellow-and-White*" Nuns, the name "*nun*" being applied to any of the various finches having a white, yellow, or black head and a body of another color. The white-capped species have brown or black bodies,

while the Japanese have cinnamon and white plumage. They are all very tame, easily trained birds, and good songsters.

Avadavats are common cage-birds found wild in India and are recognized by their fiery-red head and breast and white-tipped brown feathers of the sides. The beak is red with a black upper mandible, and the tail is also black.

The *Gray-Blue Finch* has a charming canary-like song with many of the wild, rollicking notes of the bobolink, and will rear its young in the month of November—the spring of the regions south of the equator.

Quaker Birds or *Silver-Bills* are pretty warbling songsters with a queer habit of dancing when singing. They are very affectionate and spend a great deal of their time caressing one another.

The *Chestnut Finch* has a rich brown body with white tail-coverts and black tail, while the *Magpie Finch* is beautifully marked with contrasting patches of brown, white, and with a bottle-green head.

The *Cutthroat Finch* or *Cutthroat Sparrow* is a striking species from Africa of a grayish-brown color spangled with white spots, and with a deep crimson patch or “gash” across the throat from which the bird takes its name.

Another strikingly colored finch is the *Diamond Bird* or *Diamond Sparrow* of Australia, with a white stomach and sides of coal-black decorated with diamond-shaped white spots. This bird becomes very tame and can

be allowed perfect freedom. It is very fond of catching flies and will spend hours pursuing them in a window.

The *Cuban Finch* is a coal-black, satiny bird, while the *Saffron Finch* is brilliant yellow. Among the other attractive finches may be mentioned the *Fire Finch*, *Bishop Finch*, *Little Doctor*, *White Nun*, *Strawberry Finch*, *Spice Bird*, etc.

All of these finches may be kept together in an aviary, and such birds as canaries, goldfinches, linnets, bullfinches, chaffinches, siskins, nonpareils, Java Sparrows, paroquets, love-birds, cardinals, and most of the other small birds may be kept with them safely.

These fancy finches eat millet and canary-seed, with fresh greens, apples, and insects. Care should be taken to keep them warm and protected from draughts. They love sunshine and will bask contentedly in the hottest sun. They should bathe every other day, and Cayenne pepper should be sprinkled on the sand of the cage once or twice a week. Otherwise their care and feeding is similar to that recommended for canaries and it should always be remembered that all hard-billed birds should be provided with cuttlefish bone.

SOFT-BILLED BIRDS

Nearly all small cage-birds may be divided into two general classes, commonly known as "*Hard-Billed Birds*" and "*Soft-Billed Birds*." The former class contains all the various sparrows, finches, and other seed-eating birds, while the latter class contains the thrushes,

warblers, mocking-birds, blackbirds, and all insectivorous and partially insectivorous birds or, in fact, any bird which does not live exclusively on seeds.

A great many of our most charming song-birds and many of the most beautiful ornamental birds belong in the soft-billed section, and these birds require very different treatment and care from the so-called hard-billed birds already described.

Most of these birds require large, roomy cages and great cleanliness and regularity in feeding and bathing.

The food for the soft-billed or "long-billed" birds should consist of a mixed animal and vegetable diet, and to provide this is not quite as easy as to feed the simple seeds required by hard-billed species. Nowadays every dealer in birds and bird supplies keeps prepared bird food on hand, and the dry, light-gray "mocking-bird food" should be the staple diet for all soft-billed cage-birds. This food is mixed with grated raw carrot and a little water and may be fed in this state; or, better still, with a thimbleful of ants' eggs added.

During moulting time fresh fruit, especially grated sweet apple, is excellent, and a little green food and fruit are relished at all times.

Meal-worms, which may be purchased at any bird store or may be easily raised at home in old meal or grain, are very useful in feeding soft-billed birds; but they are rich food and should be fed sparingly, say two or three worms daily. To raise a supply of these worms, place a quantity of bran or meal in a jar or

tin box and place a few meal-worms in it. Cover the opening with a thick cloth and moisten this from time to time. The worms will breed rapidly, and if not disturbed you will have thousands of worms on hand in a few months.

During the warm months earthworms, spiders, grasshoppers, and other insects will be relished and should be fed freely.

A good supply of insect food may be prepared for winter use by gathering flies, grasshoppers, spiders, ants, beetles, moths, etc., and tying them in large paper bags and allowing them to dry in a shady spot.

When these insects are required for the birds they may be freshened and softened by pouring boiling water over them, and they will then prove as satisfactory and palatable to the birds as if freshly killed.

Berries of all kinds may be fed, and when fresh berries cannot be obtained dried currants and raisins soaked overnight and wiped dry will prove very acceptable.

Many soft-billed birds are subject to diseases, but these are usually easily cured. If the feathers on the bird seem loose and ruffled but it is otherwise healthy, give less insect food and more green food. If the bird mopes and seems stupid, feed a few large, plump spiders, and if it refuses to eat examine its tongue. This may be covered with a hard, horny scale, which must be removed or the bird will die. Great care must be used in taking off the growth; it should be done in this way:

Hold the bird on its back, grasping it firmly with one hand so it cannot struggle or flutter, and with the finger nail of the other hand very gently peel the scale off the tongue.

Diarrhœa is readily known by the condition of the bird's droppings, which will be watery and greenish; and a rusty nail should at once be placed in its drinking water, and fruit and insect food should be withheld for a few days.

Constipation is cured by feeding more fruit and insects.

During early spring many birds are attacked by *Mating Fever*, the symptoms being melancholy, rough feathers, and lack of care in preening; and in many cases it causes them to pine and die. This only happens where birds are kept singly, and in most cases it can be cured by changing their cage or by placing it in a new position, especially near a window.

Lice are a great nuisance on many soft-billed birds, especially the mocking-birds, and as they injure and annoy the bird they should be eliminated at once. To do this, steep some fine-cut chewing tobacco in water and, after diluting this to a very weak solution, wash the bird thoroughly with it, being particular to thoroughly wet the under sides of the wings and the sides of the body. Then place the bird in a fresh, clean cage with a white cloth over the top. The lice will desert the bird and crawl up on the cloth, where they may be destroyed. German or Persian insect-powder may also be used in the same way.

Clean the old cage with boiling water and lye before replacing the bird and see that the cage and perches are kept absolutely clean at all times.

Give the bird a bath daily, placing the bathtub in the cage at a certain hour and removing it just as soon as the bird has bathed.

Sugar, candy, daily fruit and green food, too much rich food and meat are all bad for birds; and the food should be mixed fresh and placed in clean vessels each day.

Where birds are very badly affected with *constipation* it is often necessary to give an injection of oil. This may be done by using a medicine dropper and dropping a little sweet-oil on the vent, or a coarse knitting-needle dipped in oil may be inserted into the passage slightly. If a spider is then forced down the bird's throat and it is compelled to fly a short distance immediate relief will generally follow.

All of these directions apply equally well to all the soft-billed birds, and where particular food or care is required for a certain species it will be noted under the description of the bird.

THE NIGHTINGALE

This splendid songster, the most famous of European song-birds, possesses a wonderfully melodious and harmonious song. It is justly famed, but nevertheless it does not excel several American birds in the sweetness or power of its voice.

Unfortunately, most of the wild songsters do not

thrive in captivity, whereas the nightingale does; and this is the reason the nightingale is more often seen in cages than other birds which are its equal in musical ability.

Even nightingales vary in the quality of voice and song, and among birds of the species are found good, medium, and poor singers.

Formerly most caged nightingales had been trapped fully grown, and these were difficult to care for, were timid, and gave little song. To-day the nightingales sold by reputable dealers are birds taken from the nests when very young and reared by hand in Italy and Germany. These are very tame and will usually feed from the fingers and are constant songsters, fully as healthy and happy in cages as in their woodland homes.

Good nightingales with fine songs are highly prized by their owners, especially in Europe, and Mr. George Holden, the well-known authority and dealer in cage-birds, tells a story of a caged nightingale he found in Turin, Italy. Mr. Holden says: "He was hanging out-of-doors in front of a very small inn. When I asked if the bird was for sale the owner replied: 'Oh, yes.' Then he took a slip of paper, consulted his wife, made a long column of figures and, adding them up, said: 'Fifteen thousand francs.' Asked for an explanation, he replied: 'The bird alone cannot be sold; you must pay for the house and land and the wife, too, for she could not live without the bird.' I admired the woman's love for the bird but not intensely enough to warrant my owning both."

THE BLACKCAP

This is another charming European warbler with a song equalling in many respects that of the nightingale. It is a constant singer, and its notes are poured forth throughout the entire year during the whole day, except in the moulting season. This bird is a good mimic and readily imitates the notes of other birds and frequently exactly reproduces the song of the nightingale if kept where it can hear it.

The ordinary song of the blackcap is full, sweet, deep, and loud, enriched with a marvellous variety of oily, silvery notes, long, soft quavers and tremolos that sink gradually to the lowest of bird notes until one imagines that silence will follow, when suddenly the song swells into a perfect burst of melody, making the whole house ring with the liquid music. In song the blackcap puts every muscle and effort of its tiny body into the music, distending its throat and quivering all over.

The blackcap is a much prettier bird than the dull-colored nightingale. It has an olive-gray back and wings, silvery gray throat and breast, white belly, and jet-black crown.

The only peculiar disease of the blackcap is *tender feet*, with swellings or warts. This is easily cured by applying cold-cream frequently.

SKYLARK

This is still another famous European song-bird, in reality more noteworthy for its manner of singing while in flight than for the superior quality of its notes.

In captivity the skylark readily imitates the notes of other birds and will learn tunes, and in addition sings its own song freely through half the year. An easily tamed bird, it soon consents to eat from its owner's hand.

SONG-THRUSH

The European thrush is often kept as a cage-bird and is a splendid, melodious songster with a more powerful song than most other song-birds. It is attractive in its russet plumage and speckled breast and, when well cared for and in a proper cage, will sing eight or nine months in the year.

A large, gravel-strewn cage must be used for the thrush, and it requires plenty of water for drinking and bathing; but the bathtub should be removed as soon as used, as otherwise the bird will continue to hop about in it and will be liable to cramps.

Keep the food and water on the outside of the cage when possible and look out for constipation, which is its most common disease. The male thrush may be easily distinguished by its song and has a wonderful knack of imitating tunes played on wind-instruments or whistled to him.

BLACKBIRD

The blackbird commonly kept in cages is the *European Blackbird* and is in reality a species of thrush, whereas our so-called American Blackbirds are members of the starling family.

The European Blackbird is a splendid songster, while the American Blackbirds are destitute of real songs, although the meadow-lark and oriole, which are closely related, are splendid singers. The European Blackbird is pure velvety black in color and is easily recognized by the orange-yellow bill. Its song resembles that of the European Thrush but is more flute-like in tone.

The blackbird is noted for its ability to learn a whistled tune and never forgets a tune once learned. As it imitates each note, key, and variation in the minutest way, great care should be taken to teach the air correctly, for any mistake will be indelibly impressed upon its memory and will be repeated exactly.

This bird will also learn to imitate the notes of other birds, to crow like a cock, cackle like a hen, and gobble like a turkey.

It is very fond of its bath and should be given a daily tub in the sunshine, but care should be taken to keep its cage dry or cramps will result.

It is a long-lived bird and frequently lives for twelve or fifteen years in captivity.

ENGLISH ROBIN

This charming little bird is very popular in Europe as a cage-bird, and in captivity is lively and attractive. It is readily tamed and can be allowed the freedom of a room or house.

Its song is sweet and warbling, for the European Robin is a true warbler, whereas the American Robin is a thrush. The robin is fond of bathing and should



CAGE BIRDS.

1. Black Cap.
2. English Robin.

3. Siskin.
4. Java Sparrow.

5. Skylark.
6. Song Thrush.

be given a daily bath, but when loose in a room care should be taken not to leave a large vessel of water within reach, as the bird is likely to attempt a bath and in its efforts may be drowned.

JAPANESE ROBIN

This beautiful bird, also known as the "*Pekin Nightingale*," is a native of Japan, a country which furnishes our bird-fanciers with many birds of beautiful plumage and numerous choice songsters.

The Japanese breeders have made bird culture a science, and it is said that if any shade of color is taken to a Japanese breeder he can produce a bird of the same hue. Fortunately, the natural colors of the Japanese Robin are so beautiful and harmonious that they cannot be improved upon artificially.

The head of this bird is rich bronze-green, the body soft dove-gray, throat écru or yellowish-brown, shading into rich orange on the breast; wing and tail feathers black striped with white and gold; beak yellow, and eyes black, encircled with a white ring. The form is very trim and neat, and the large, liquid eyes with their white rings give the bird a wide-awake, gentle appearance that is very attractive.

As a rule, the most beautifully colored birds are poor songsters; not so with the Japanese Robin, however. It possesses a song unrivalled in volume, silvery tones, and range of notes, and seldom repeats the same song twice. Its notes are a continual surprise, and it will daily utter new and unexpected variations, trills, and

tones. It imitates any bird's song that it hears and combines bits of various songs with its own in a most charming manner.

The bird is a constant singer, filling the house with melody throughout the year, and if you whistle a call it will usually respond and seems to enjoy displaying its musical talents.

The Japanese Robin is a very tame and intelligent bird, never quarrels or mopes, eats well, is very hardy, and has few diseases. At times its feathers, which are normally sleek and smooth, stand out loosely or ruffled, which indicates constipation; and a few drops of oil in its mouth, a little fruit, insects, and possibly an injection may be required. The Japanese Robin should have a cage at least 16 inches long and should be placed where it can have abundant sunshine.

CLARINOS

These are soft-gray birds of the thrush family, and are natives of the West Indies and South America. Of recent years they have become a favorite cage-bird, and their clear, liquid, flute-like notes are very attractive. They are easy to care for and require no special treatment.

SHAMA THRUSH

The *Shama Thrush*, or *East Indian Thrush*, is a handsome, large, thrush-like bird with attractive plumage and delightful song. It is doubtful if any other cage-bird combines tameness, intelligence, beauty, and music

to the same degree as this bird. The range of its notes and its ability to imitate other songs enable it to learn to whistle tunes and airs; frequently it learns to whistle a tune in eight or ten weeks.

Unlike most song-birds, the Shama Thrush has no shrill or harsh notes, but each note seems perfect and complete in itself even without the accompanying notes of the song, and a single note repeated at intervals is so musical that it is very attractive.

When one of these birds is purchased and taken to a new home it is very apt to remain silent for several weeks or even two or three months; but as soon as it becomes thoroughly accustomed to its new quarters it will make up for lost time with abundant melody.

The color of the Shama Thrush is unusual and distinct. The head, throat, back, and upper tail-feathers are glossy black; breast and belly chestnut red; under tail-feathers white and much shorter than the long, black upper ones.

The cage for this bird should be 20 to 24 inches in length and should be hung at least 7 or 8 feet above the floor or ground. Bright light should be avoided; a dull, two-thirds light will be the best.

MOCKING-BIRD

This is one of the few native American birds that are universally kept as cage-birds and thrive as well and are as happy in captivity as when wild.

As a songster the mocking-bird is equal to any feathered musician, and its greatest charm is in its

ability to imitate the calls of other birds and animals and intermingle them with its natural song.

The mocking-bird is not only a musician but a composer as well, and will spend hours trying new combinations of notes in a subdued voice until satisfied; whereupon it will burst forth with its new composition, often stopping in the midst of a trill or note to start all over again with new notes. Aside from its musical ability, the mocking-bird will prove interesting and entertaining for its imitations of creaking doors, barking dogs, calls of boys, and, in fact, any sound that catches its fancy.

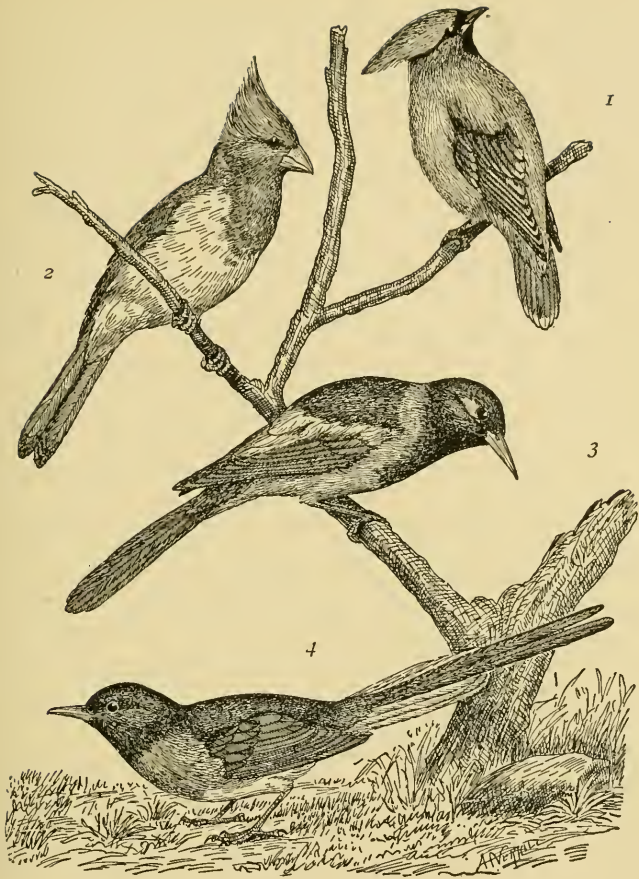
The mocking-bird is easily cared for and readily tamed. It thrives well if kept clean and in a large cage with plenty of gravel. It is particular as to regularity of feeding and bathing, and this matter should be attended to at the same hour each day.

TROOPIAL

This is a large, handsome South American Oriole of bright orange and black plumage and a rollicking, loud, sweet song. Its notes closely resemble those of a flute or flageolet, and it will readily learn a tune played to it on these instruments.

The troopial is a very active, graceful bird, and requires a large, long cage. Although the caged troopials are practically all wild birds which have been captured, yet they are always contented and thoroughly domesticated and become very tame.

With a very little trouble they can be taught to feed



SONG AND ORNAMENTAL CAGE BIRDS

1. Waxwing.
2. Brazilian Cardinal.
3. Troopial.
4. Shama Thrush.
5. How to clip wings. The dotted lines show where to cut feathers.

from the hand, to perch on one's shoulder, and to answer a call.

STARLING

In Europe tame starlings are very common, and they are often taught to whistle tunes, to imitate other birds, or even to enunciate words, but in America they are seldom kept in confinement. In most parts of the Eastern States the starlings have been introduced and are common in parks and streets, where they feed side by side with the English Sparrows. Their natural note is a soft, rather "squeaky" whistle, but they are intelligent, docile, easily taught birds with really beautiful plumage. They make very attractive pets.

WAXWING

The *European* or *Bohemian Waxwing* is a beautiful bird of a very quiet, gentle disposition and a soft, silky plumage. It is a near relation to our common "*Cherry-Birds*" or "*Cedar-Birds*," and like these has a beautiful tapered crest on its head. The general color is soft fawn and grayish, with a black throat and a black line through the eye. The wings are marked with white and yellow, the tail is yellow-tipped, and the wing-feathers are decorated with tiny, wax-like tips from which the birds receive their name.

The waxwings have no true song and are kept as cage-birds solely for their graceful form and attractive plumage. They are hardy, healthy birds and are very fond of insects, berries, and fruit.

CHAPTER XIV

PARROTS AND TALKING BIRDS

THERE are a great many species of parrots scattered over nearly all parts of the earth, and they vary in size from the diminutive paroquets to the great gaudy macaws and cockatoos.

The parrots and their relatives are mostly brilliantly or strikingly colored birds, the prevailing hue of most species being green. The African Gray Parrot is the only gray species kept in captivity, while the various Australian Cockatoos are the only white ones. The majority of the parrots seen in confinement are American; the cockatoos, cockatiels, and lorries are Australian; the paroquets are American, African, Indian, and Australian, while the macaws are all American.

Although they come from such widely separated localities, the habits, food, and nature of nearly all parrots are similar. In a wild state they live in flocks and feed upon fruit, nuts, seeds, and leaves, while the Australian "Kea" Parrot has learned to devour sheep kidneys and has proved very troublesome.

Some of the parrot family live on the ground, others in low bushes, others in grass, but the majority live in the topmost branches of tall forest trees.

While they can all fly swiftly and far, yet they spend

most of their time climbing deliberately about among the branches, using their strong curved bills like an extra foot. Although their colors are often very brilliant, yet in their native haunts parrots are not easily seen among the foliage, and have a habit of sitting motionless when one is looking for them. They are noisy, loud-voiced creatures, and when undisturbed keep up an incessant babel.

Most of the species build their nests in hollow trees or excavate holes for themselves. Parrots are very long-lived and may live for a hundred years or more, and most species are hardy. Most people consider parrots strictly tropical birds, and, as a matter of fact, the majority of the parrot family are natives of warm climates. Several species, however, dwell in high, mountainous regions, where it is very cold, and one of the most beautiful species—the Carolina Paroquet—was formerly found throughout the southern and eastern United States as far north as Ohio.

Parrots have always been noted for their ability to talk, and in this respect there is a great difference between the species of parrots and even between individuals of one species. The question as to which kind of parrot is the best talker is one which will never be settled satisfactorily.

As a rule, the African Gray learns more readily than others, but the Panama green species, the various yellow-heads, and the Cubans all learn quickly.

Paroquets of some species learn to talk, and even macaws at times are splendid talkers. I have never

seen a cockatoo that was really a good talker, but they are very intelligent and learn wonderful tricks. I have recently seen a troop of trained cockatoos that were absolutely marvellous. One of these birds played "Home Sweet Home" by pulling strings attached to bells; another danced to music, and one rang any number which was called to it on a bell. This bird could add and subtract any number or combination up to twenty-five, and after looking at a watch or clock would ring the hour and minutes on a bell.

All the parrot family are intelligent and, if taken young and reared by hand will become gentle, docile, and affectionate.

Many of the most beautiful species and the best talkers are seldom seen in captivity. The great "Imperial Parrot" of Dominica Island, in the West Indies, learns to talk within a few weeks after taken from its native forests, and even when captured fully grown he becomes perfectly gentle and affectionate within a week or two. This splendid bird is wonderfully colored with royal purple, green, blue, and red, and is the largest of the true parrots. Unfortunately, this bird has been so persistently hunted by the natives for food that the species has become rare, even in its native forests, and will probably be quite extinct before many years.

Some of the Central American Paroquets are very beautiful and are well worthy of a place in our aviaries but are seldom seen in cages outside of their native land.



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PARROTS AND TALKING BIRDS.

1. Multicolored Paroquet.

2. Leadbeater's Cockatoo.

3. Red Macaw.

CARE AND FEEDING

The food now used generally for parrots over four months old consists of a mixture of equal parts of "paddy" or unhulled rice, hemp, and sunflower seeds. Cuttlefish bone should also be furnished, and a few peanuts may be given occasionally; other nuts should be avoided except cocoanuts. Parrots are very fond of these, and a small piece may be given once a week, but not oftener. Parsley should be avoided as it poisons the birds, but lettuce, chickweed, and green or red pepper-pods are all excellent. A piece of raw onion is a good tonic, and apples, bananas, cherries, and other fruits will do no harm in reasonable quantities. Cracker, stale bread, and green corn (raw) are good for parrots, and if a piece of fresh sugar-cane or cornstalk can be obtained your pet will thoroughly enjoy it. Insects will be appreciated and are healthy, but sweetmeats, candy, cake, and meat are all objectionable.

Parrots require water, but sometimes a gray parrot cannot drink it without suffering from diarrhœa, and in such cases clear black coffee should be given. Plenty of gravel should be provided, for parrots love sand or gravel baths, and eat a great deal of gravel besides. The cage should be kept very clean and should be scrubbed with soap and water at least twice a week. Few parrots will take water baths, but many paroquets will, and until you try you cannot tell whether your pets will bathe in water or not. Use a pint or a quart of tepid water, according to the size of the bird,

and dissolve a spoonful of borax in it. If the birds will not bathe use an atomizer and spray them thoroughly two or three times a week.

Parrots may be kept either in cages or on stands, but as a rule the talking birds are kept caged and the cockatoos or macaws kept on stands. This method is almost a necessity with the macaws, for their long tails are invariably worn or broken when in cages. Moreover, their powerful bills necessitate very strong cages, and they do fully as well if not better on the stands, where their beautiful colors and long tails show to best advantage.

TRAINING

The whole secret in training parrots or other birds to speak, sing, or imitate any other sound is patience. We do not expect a child to learn to speak until several months old, and yet we often become discouraged and disgusted if a bird fails to learn to repeat a word, or even a sentence, in the same length of time, or even less.

When teaching a parrot or other talking bird, let it remain for two weeks after it is purchased or acquired without other notice aside from feeding and caring for its wants. This will make it more at home and it will be less suspicious of your approaches. Then take away the drinking water or coffee for a few hours and offer it to the bird in your hand, at the same time holding out some favorite bit of food. It will probably accept the drink and food from your hand

and very soon will learn to perch on your hand or arm and will let you stroke or scratch its head.

Parrots learn to speak more rapidly if taught during the three or four hours after sunrise or before sunset, and the same word or sentence should be repeated over and over slowly, in clear, ringing tones, using care to always accent and pronounce the words in exactly the same way.

Never try to teach a bird to talk several different words or sentences at one time; wait until it has thoroughly mastered one thing before teaching another. If the parrot pays no attention or fails to show any signs of learning its piece for several months do not despair. Sometimes a parrot may be taught for twelve months without its uttering a word, and then it will suddenly blurt out the complete sentence perfectly.

After one or two simple things are learned the rest is an easy matter, and the bird will soon learn to repeat long sentences, songs, etc. If you ever notice your parrot quietly muttering or talking in an undertone to itself do not interrupt or disturb it; it shows it is practising its lesson, and if left alone it will perfect its pronunciation until sure of itself.

After speaking any word or sentence that has been taught, the bird should be rewarded by some tidbit. Rewards are far more efficacious than punishment when training parrots, and if allowed to grow really hungry and then fed when the words are spoken to it the bird will often learn more rapidly.

DISEASES

If parrots are correctly fed, are kept clean, and are cared for properly they will have few diseases and may live as long or longer than their owners. The principal diseases and their remedies are given below, but in every case you must use judgment, and if in doubt consult some reliable bird-fancier, especially one that is accustomed to handling and keeping parrots.

Colds.—Keep the bird in a warm place and give a few red peppers. Ten drops of aconite in a glass of water, to be given a teaspoonful at a time at intervals of an hour, is a good remedy. Clean the bird's nostrils with a feather dipped in salt water and moisten them with almond-oil. Rub the throat and back with a solution of one part chlorate of kali in twenty parts of hot water. Let the bird inhale tar vapor from a bottle containing one part of tar to twenty-five parts of hot water.

Vomiting.—This may be caused by fright, anxiety, overeating, or inflammation of the stomach. The former causes are of little account and the bird will soon recover; but if caused by inflammation and accompanied by weakness, shivering, loss of appetite, and bloody discharges, it should be promptly treated in the following manner: Apply warm or nearly hot poultices of flaxseed to the stomach and belly and hold sand, as hot as you can bear in your hand, against the belly. Give teaspoonful doses of a solution of tannin

to seventy-five parts of water two or three times a day, and feed tea leaves that have been steeped, and for a day or two mix tea with the drinking water.

Indigestion.—Feed a plain, light diet of unhulled rice and a few hemp-seeds, without fruit or green food. Give some salt and tepid drinking water with a teaspoonful of lime-water in it. A teaspoonful of light Bordeaux wine may be poured down the parrot's throat.

Constipation.—Use warm castor-oil and olive-oil in equal parts as an injection, using a small syringe for the purpose. Give a dose of ten drops of castor-oil with half a teaspoonful of honey once or twice a day, and feed hemp and sunflower seeds in equal parts, and a little fresh fruit and green food.

Diarrhœa.—Keep the parrot in a warm, quiet place, feed clear, unhulled rice, and give a cracker soaked in brandy and sprinkled with Cayenne pepper. If the attack is severe, put a few drops of paregoric in a teaspoonful of boiled milk and give this every three hours. If the case is very severe and blood is passed give four drops of laudanum in the milk in place of paregoric and withhold all fruit, greens, and water until the bird recovers. Keep boiled milk with the laudanum and five to ten per cent of brandy in the cage.

Dysentery.—Treat as for the last, and give in addition one half to one teaspoonful of castor-oil with ten drops of honey. Wash the fouled, sticky feathers under the tail with warm water and a few drops of oil of eucalyptus.

Pulling Feathers.—This troublesome disease is due to improper food, such as meat, bones, too much sunflower seed, and lack of exercise. Feed only hemp and paddy, give abundant gravel and wood for the bird to gnaw, and furnish the bird with spools, small china toys, or metal rings to amuse him. A half teaspoonful of glycerine in a teacup of tepid water used as a spray each day is excellent. Apple or banana should be fed daily. A salve or ointment especially prepared for the cure of this disease may also be used, and this is excellent.

All of the above directions as to food, care, and diseases apply equally well to the various parrots, parquets, macaws, and cockatoos, and if in any case additional treatment or particular foods are required they will be mentioned under the description of the birds.

THE AFRICAN GRAY PARROT

This is the well-known "Joko" and is easily distinguished from all other parrots by its ash-gray plumage, whitish face, black bill, and red tail. For the first year the gray is quite dark and the tail is brown save close to the body, where a trace of red may usually be seen. The gray is a large bird in appearance, but the body itself is not as large as it seems, for the feathers are very thick. At times one may find a bird with a few red spots or feathers on the back, wings, or head. Such birds are called "kings," and are supposed to be better than the ordinary birds and bring a higher price. This is pure imagination, for every species of

known parrot is subject to variation in plumage, and no two individuals can be found which are absolutely alike in color. Nearly every variety—especially those which normally have red in their plumage—is subject to great variation in the amount of red, and all are liable to have red feathers appear in odd or unusual places. Such markings are purely individual variation, and the feathers frequently change their places with different moults. The presence of such “freaky” feathers has no bearing whatever upon the intelligence or talking ability of the bird. Gray parrots are natives of central and western Africa and are brought to this country via England, South America, or direct in both steamships and sailing vessels. Most of the gray parrots arrive in Boston, and those which arrive in sailing ships are the most prized, for having been longer on the trip they are more gradually accustomed to the change of climate, food, etc., and, moreover, are usually better cared for than those brought over on steamers.

THE GREEN PARROT

The commonest parrots are the various green varieties which are classed by bird dealers according to the localities from which they are brought. Some of these classifications are rather crude, and several distinct species are often found classed under one common name. Thus a “Panama” may be one of several related species, the “Yellow-Heads” belong to several species, and parrots of distinct kinds from Haiti, San Domingo, and Cuba are frequently all classed as “Cubans.”

The leading green parrot is the *Mexican* or "*Double Yellow-Head*." This parrot is a beautiful clear green, with a pale-orange or deep-yellow forehead, white feet and bill, and blue and red feathers in wings and tail. It is larger than the gray parrot and is noted for its ability to learn songs. These parrots are also excellent talkers and whistlers.

The Panama is about the size of the Mexican, with an entirely green plumage except for a small yellow spot on the nape of the neck and the usual red and blue wing and tail feathers. Many people consider this bird a superior talker to the Mexican or the Gray Parrots.

The *Carthagena* is named after the town of the same name in northern Colombia. It is a smaller bird than the Panama but is much like the Mexican in color, except that the beak is dark and the yellow forehead does not extend back over the crown in adult birds as does that of the Mexican Parrot.

The *Amazon* is a light-green bird with blue and yellow head, orange and red throat, scarlet-tipped wings, and parti-colored tail.

The *Maracaibo* is green with yellow forehead and variegated wings, and in general appearance is much like a small Mexican.

The *Blue-Fronted Parrot* is distinguished by its blue forehead, while the *Cuban* bird has a white forehead, scarlet throat, and red and blue wings.

DWARF PARROTS

Under this name we find several species of small parrots from South America, all of which are desirable cage-birds, very easily tamed and trained and most of them capable of learning to whistle and talk.

They are very affectionate, and if kept in pairs they will show every sign of affection and devotion to each other. They will eat together, share the same bath, and feed and preen each other. It is not necessary to keep them in pairs, for they live singly just as well, and their low price, intelligence, and ability to whistle or talk make them great favorites, especially with children. As a pet the dwarf parrot, or "Beebee," is excellent; it becomes greatly attached to his master or mistress and is fond of being stroked or fondled. It loves to romp and play with the children and will play hide-and-seek with delight. It is not destructive like the large parrots, and if allowed perfect freedom in a room will not get into any mischief. When kept in pairs and taught to speak the birds will often carry on a conversation in a most entertaining manner.

They should be kept in large cages and should be given a bath daily, for unlike most parrots they are fond of water. The best food for these birds is canary and hemp seeds in equal parts, with apple or other fruit daily.

If given a hollow limb or a box with a hole in one end they will breed and rear their young in confinement. The young birds up to six months old should be fed on soaked cracker.

PAROQUETS

This term is applied to various tiny parrots, some of which are gorgeously colored, and there are so many species that it is impossible to describe or mention them all. They are seldom capable of learning to talk, but many species whistle tunes, while others have a pleasing twittering song. They are also capable of learning tricks, are readily tamed, they breed freely in captivity, and are very hardy. Their food should be canary-seed, with occasional hemp and sunflower, fresh apple, and greens. They should be kept in pairs to thrive to best advantage, and are altogether very attractive and pleasing birds.

The *Grass Paroquet* is a native of Australia, and is known by its pale yellowish-green color, yellow head, dark bars on the back, and blue spots on the throat and neck. This is the paroquet most commonly kept as a cage-bird and is the most easily cared for and hardiest species, although by no means the handsomest. They breed freely in captivity.

Love-Birds are tiny parrots which are much like the paroquets and dwarf parrots in habit. They are noted for their affection and attachment to their mates, and breed readily in confinement like paroquets.

LORIES

These are gorgeously colored parrots from Australia. Their plumage is wonderfully variegated with reds, blues, greens, purples, orange, yellow, and other hues



1



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PARROTS AND TALKING BIRDS.

- 1. Cockatiel.
- 2. Red-Faced Love-Birds.
- 3. Blossom-Headed Paroquet.
- 4. Rock-Pepple Parrot.

mingled in a perfect riot of color. They are kept mainly for ornament, as they are not true talking birds and have harsh, unpleasant voices. Similar to the lories are the lorikeets, which bear the same relation to the lories that paroquets do to parrots.

COCKATOOS

These are large, handsome birds from Australia. There are numerous species, the commonest being the *Sulphur-Crested* bird, with a beautiful curved crest of delicate sulphur yellow. The *Rosy-Crested* species has a salmon-pink crest, while the *Leadbeater* is delicately shaded with pink on the body, and has a deep salmon or fiery red and yellow crest.

Cockatoos sometimes learn to talk, but they may be taught many entertaining tricks and are suitable for ornamental birds, especially when kept on stands. Just as paroquets are diminutive parrots and lorikeets are miniature lories, so the large cockatoos are reproduced in pygmy size by the charming "*cockatiels*." These are beautiful birds of handsome colors, and should be kept by every one fond of ornamental birds.

MACAWS

There are three common species of these large, gorgeously colored American birds, known as the "Red Macaw," the "Blue Macaw," and the "Military or Green Macaw." The red species is brilliant scarlet, with yellow, red, and blue wings and a long tail. The blue species is brilliant azure blue and bright yellow, while

the Military Macaw is greenish with red and blue wings. They are easily kept but are better adapted to stands than cages. Occasionally they learn to talk splendidly, but as a rule they are merely kept as ornaments. Their bills are extremely powerful and they are liable to inflict serious injuries if meddled with or handled. They are also likely to be treacherous and cannot be highly recommended as real pets. The food may be the same as for parrots, but hard nuts, corn, and other hard grains may be fed, as such things keep the birds busy and prevent the bills from becoming overgrown.

TOUCANS

Of all odd and unusual birds these uncouth creatures stand at the head. Their enormous, brilliantly colored bills, gorgeous plumage, and odd voices make them attractive, and they are capable of becoming very tame and affectionate and may be taught to whistle, imitate various sounds, or even to talk. Their natural notes sound almost human, and they are always lively, curious, interesting birds. They are most desirable pets, and whereas parrots are so common as to attract no interest or curiosity in the beholder, yet the toucans always attract attention and interest visitors.

When asleep these odd birds turn their huge bills over on their back and fold their tail, fan-like, over them, thus rolling themselves into a sort of ball. There are various species, the commonest being the "Sulphur-Breasted," which is a black bird with sulphur yellow

and orange breast, pale green and red bill, and white eyes. Other species have scarlet or white breasts; others are green with yellow throats; others are green and blue, green and red, black and orange, etc.

They may be kept in an ordinary cage or allowed considerable freedom when tame, and will thrive well on a varied diet of mocking-bird food, softened hemp and sunflower seed, fruit, greens, cooked rice or paddy, insects, and boiled potatoes. They are very clean, tidy birds and love bright sunshine, and if properly fed and cared for will live many years in captivity. Toucans are very fond of meat, and an occasional piece of fresh liver or a bit of fresh beef will not hurt them, while during the moulting season hard-boiled egg may be given. Aside from this they should be treated much like parrots, as far as food, care, and diseases are concerned.

CROWS

The common crow, ravens, European Crows, jackdaws, and others of the crow family are often kept as pets. If taken young and reared by hand they will become exceedingly tame and will learn to talk readily. The old idea that a crow's tongue must be slit to make him talk is ridiculous; the operation is as useless as it is cruel.

Kindness, care, and patience are the only means for teaching any bird to talk or imitate a sound, and as all the crow family are exceedingly intelligent they learn very readily.

Crows and their relations may be kept in cages, but it is best to give them as much freedom as possible. Feed them various seeds, fresh fruit, greens, plenty of insects, and a little egg in moulting season and they will thrive and live for many years. There is no bird that will thrive on a greater variety of diet and will be so free from diseases as the common crow, and none that will prove more amusing and entertaining.

When a boy, the author reared a crow from a nestling. This bird was called "Dom Pedro," after the emperor of Brazil, and was never kept confined in a cage except at night. He was full of odd tricks and kept us continually amused at his antics. He learned to talk very soon, and would come when called like a well-trained dog. On one occasion he extracted all the goldfish from an aquarium, and the fish could not be found for months until one day when an old, unused dictionary was opened we found the unfortunates pressed between its pages.

On another occasion he robbed a pet rabbit of her babies and hid the poor creatures under the shingles of an outhouse roof. He was very fond of insects, and when my father was gardening Dom Pedro would follow about in his footsteps, and as soon as a worm or bug was turned up by spade or trowel he would rush forward and gobble it instantly.

A long story might be written to relate the numberless odd traits of this pet crow, but eventually his curiosity got him into trouble, and after eating a quantity of red paint he passed away, much to the sorrow of all who had known him.



MOTMOT.

JAYS

Both the European Jay and the American Blue Jay make splendid pets, easily cared for, and capable of learning many tricks and to imitate the sounds of other birds and animals. Occasionally a jay may be taught to talk, and in my youth I owned a pet blue jay that spoke a number of words and several sentences. Feed the same as crows.

MAGPIES

Magpies are often kept as pets, and are very interesting and attractive. They are often taught to talk and will imitate various sounds and calls. They belong to the crow family and should be fed and cared for in the same way.

MOTMOTS

These are very pretty and extremely curious birds, which are natives of tropical America.

There are a number of species of motmots, but all are, more or less, alike in general appearance and in habits. They are fairly large birds, about the size of jays, and are mainly blue and green in color, with very brilliant blue and black heads and long tails. The bill of the motmot is notched or toothed, and is very sharp and powerful.

In their native state these birds perch motionless upon a branch and dart into the air to seize passing insects, much as flycatchers do. They also feed upon

fish, frogs, and other water animals, which they catch after the manner of kingfishers, and they are fond of mice, small birds, lizards, and snakes.

In captivity they will thrive on a mixed diet of meat scraps, insects, fruit, fish, and mocking-bird food.

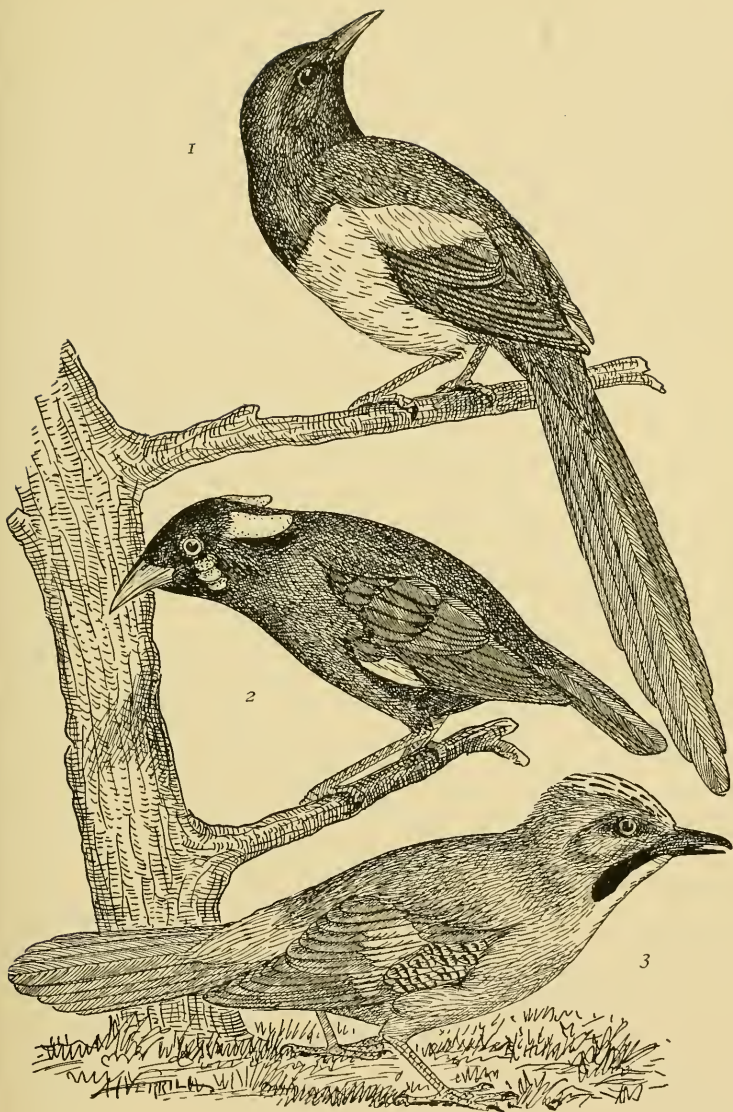
Motmots are so tame, unsuspecting, and confiding that they are called "bobos," or "fools," by the natives, and when captured and caged they seem in no wise troubled or disconcerted at the change in their life.

These birds become exceedingly tame, they learn to answer to a call or whistle, and they will readily perch on one's finger or shoulder and feed from the hand.

They have no natural song and are rather silent birds, but are well worth keeping because of their docile natures and interesting habits. The most remarkable habit of the motmot is that he actually shaves. The feathers of the tail, when they first grow out, are tapered and like any ordinary feather. For some reason the motmot thinks he can improve upon nature, and strips off the feathers on each side of the quill of the long tail-feathers, leaving the latter bare, except for a small tuft at the tip.

THE MYNAH

Parrots are world-famous as talking birds, and we usually consider them the best of talkers, but the East Indian "Mynah," or "Minor," is a far better conversationalist and a more entertaining pet. It can learn an unlimited number of words and sentences, can bark like a dog, meow like a cat, mimic odd sounds,



TALKING BIRDS.

1. Magpie.

2. Mynah.

3. European Jay.

or whistle tunes, and, best of all, it will invariably delight in showing off its attainments.

Many educated talking parrots are stubborn or bashful in the presence of strangers and utterly refuse to talk, sing, or whistle. The mynah, on the other hand, never has "stage fright" and will perform at command before a large audience. These birds seem to know by intuition when callers have come to be entertained and will do all in their power to "show off" to the best advantage.

As an example of what a really well-taught mynah can do, I cannot do better than quote the words of Mr. Holden, who owns one of the most valuable of these birds. Mr. Holden says: "My own mynah talks and spells and laughs all day long, and every hour. His cage is covered—except a 6-inch-wide space, the length of the top—at 6 P. M., but if uncovered during the evening he talks and laughs just as freely as during the day. He is wonderfully apt with his hearty laughter, followed by the remark: 'That's all right.' When he thinks it is time to sleep, he says: 'Come and kiss me good night! Come and kiss nice!' Then he gives three long smacks and says: 'Ah, that's good!' On my return from a three months' trip I took him on my finger, where he likes to perch, and his prompt words, hitherto unheard by me, were: 'Three cheers for Holden!' It was a sweet welcome."

Such a bird is valued at over one thousand dollars, but untrained mynahs may be purchased at from twelve dollars up.

The mynah is about the size of a small dove or a jay, with beak, feet, and legs orange-yellow. The plumage is mostly glossy, iridescent black, with reflections of violet, green, and bronze. The feathers, especially on the head, are very smooth and velvety, and below each eye is a small yellow naked "wattle," or membrane. Behind the ears and extending beyond the back of the neck are other bright yellow, naked membranes or "ears," which may be raised or depressed by the bird. The only other markings are patches of snow-white on the wings.

It is an easily trained and affectionate bird and is very graceful in form and movements.

All fruits, berries, and insects are suitable for the mynah, and it will readily eat prepared mocking-bird food with grated carrot and chopped hard-boiled egg. It should bathe two or three times a week and should have a cage 20 to 24 inches in length, with gravel and cuttlefish bone. The mynah is a long-lived, healthy bird, and individuals have been known to live for seventy-five years or more.

CHAPTER XV

WILD BIRDS

A GREAT many of our common American wild birds make excellent pets or cage-birds, and some of these are as happy and contented in captivity as when wild and are really far better off.

No one should ever attempt to capture or cage any of our beautiful song-birds or insectivorous birds, for these are useful and lovely creatures that are far more ornamental and admirable in their native woods and fields than when confined in cages. Sometimes, however, a helpless nestling will be found or an injured bird discovered, and these may be reared in cages until grown or recovered. If the young nestling is thus raised to maturity it will usually be unable to look out for itself if freed and will prefer the life in a cage to that of its wild relatives.

Many injured birds that are nursed into health by hand refuse to leave their new-found home, even when able to do so, and no one can complain if such birds prefer to remain with you of their own accord. Our game and bird laws protect nearly all our song and insectivorous birds, and provide penalties for trapping, shooting, or confining certain species.

If you wish to keep any native birds as pets it is wise to study these laws and confine your efforts to such species as are not protected. In this way you may be sure that you are not violating the law and may select birds to raise that are either useless, injurious, or harmful species. As most of the really interesting birds are in this class, you will find ample opportunity for securing many fine pets without decreasing the number of wild, useful, or ornamental birds.

Among the best of wild birds to rear in captivity are the crows, blue jays and other jays, nutcrackers, starlings, magpies, blackbirds, and waxwings, as well as hawks and owls.

All of these birds are easy to raise, are readily tamed, and make very interesting and attractive pets, except the hawks and owls, which seldom become very tame and are far from entertaining.

It is almost impossible to raise some species of our birds in captivity, and the flycatchers, warblers, woodpeckers, thrushes, and vireos should not be attempted. Even if they are found helpless and you wish to keep them for humanitarian reasons, you will find them very difficult subjects. If, on the other hand, you find a deserted nestling or an injured individual of the sparrow or finch family, or a catbird, bobolink, oriole, thrasher, or any seed-eating bird, you will have little trouble in rearing the young one or in keeping the injured bird happy and healthy.

All of the finches and sparrows may be fed on seed and treated like the canary and foreign finches already

described, while thrushes, blackbirds, and similar species may be treated like the soft-billed birds mentioned in a previous chapter.

Any of the young wild birds may be fed on soaked bread or cracker, hard-boiled egg, etc., just as described for the young of other cage-birds, but in each case you must use more or less judgment and have some knowledge of the natural food and habits of the bird.

CARE AND FEEDING

Wild birds in captivity require a great deal more space than those species that have been accustomed to a cage life for many generations, and even a small wild bird should have a cage as large as that required for the European Blackbird or the troopial.

Many of the larger birds thrive best when given perfect freedom, and if they have a cage the door may be left wide open during the day and only closed at night to keep out cats and other enemies. Crows, jays, magpies, etc., may be kept in this way and will come and go to their cage of their own accord. Wild birds if kept in cages should have abundant gravel, fresh water, and food daily and should be given a regular bath each day.

Most native birds are hardy and will stand a great deal of exposure and are not subject to as many diseases as domestic birds, and even when they are sick they may be doctored just as directed for regular cage-birds.

Nearly all wild birds are fond of insects, fruit, and green food, and while these are good for them, they

should not be too freely given unless the bird is allowed a good deal of freedom and has abundant exercise. Any of the standard seeds, such as canary, rape, millet, hemp, sunflower, etc., will answer for wild, seed-eating birds, and most of them will eat many common weed seeds, grains, etc. Wild birds naturally have a far greater variety of foods than true cage-birds, and hence you should endeavor to vary their diet when in captivity as much as you possibly can.

OBTAINING WILD BIRDS

There are two ways of procuring wild birds which you wish to raise in captivity. The first is to trap them; the second, to take them from the nest when young. With few exceptions the trapped adult bird is very unsatisfactory and, moreover, in nine cases out of ten a bird so captured will be unhappy and unhealthy in captivity. There is no excuse for keeping any bird or animal in a cage if the poor creature is not happy and contented, for every hour of its existence under such circumstances is torture, but many wild things seem to enjoy their new quarters from the very first, even when captured fully grown, and in such cases there is nothing cruel or inhumane about keeping them in captivity.

As a rule, it is far wiser to take young birds from the nest than to trap them, for fledglings reared by hand become very tame; they are thoroughly happy and contented in their cages, and they are far better off than when wild and exposed to the attacks of enemies

of all kinds. I have had many wild animals and birds as pets, and in every case they have been allowed perfect freedom, and I have never yet had one which did not voluntarily remain with me. In Central America I had several tame animals which spent most of their time in the woods near my house, but they always returned at night, and the same was true of many wild birds which I have raised. Under such circumstances no one can possibly argue that the creature is unhappy or longs for its freedom.

The age at which a young bird should be taken from the nest depends a great deal upon the bird. Carnivorous birds, such as hawks, owls, etc., may be taken almost as soon as hatched, for these birds are easy to feed and are strong and hardy. Small birds, on the other hand, should not be taken until they are well grown and nearly ready to leave the nest. At this time they are well feathered out, can stand on a perch, and can eat and digest many kinds of food, whereas if taken too young it will be next to impossible to feed and care for them properly. Even seed-eating birds, when very young, are fed mainly on insects, and if you once attempt to satisfy the appetite of a young bird with insects, you will have a wholesome respect for the wonderful amount of labor which the old birds perform daily in order to rear their hungry babies.

The best way to secure a young bird to rear is to find the nest and watch the young, visiting them from day to day, until you find they are able to stand upright on a perch, and can flutter their wings. In this

way you can get a good idea of their habits, of the food they are accustomed to, and, moreover, both old and young birds will become familiar with your presence and when you take one of the young the parents will hardly miss it. If on your visits you occasionally feed the young yourself, it will be far easier to rear them later on; for if the baby birds learn to associate your presence with food, they will recognize you as a friend when you carry them away with you.

REARING YOUNG BIRDS

When the birds are large enough to take away, remove the one or two you have selected as being the strongest and healthiest and place the youngsters in a covered basket with a bed of soft cloth. If the bird is unable to fly you can keep it in the basket for some time, but if it can flutter and hop about, it should be placed in a cage; but a nest of soft materials should be provided, in order that the young bird may have a soft, warm spot in which to sleep until it becomes strong enough to roost overnight.

At first you will have to feed your new pet by hand. Use a medicine dropper or a spoon for giving water, and drop it into the bird's mouth. Each time after giving the bird a drink you may hold its bill into the water cup of the cage, and very soon the little fellow will learn that he can obtain a drink in this way without waiting to have you drop it down his throat:

Feed the bird with small morsels dropped down its throat, and do not overfeed. You need have no fear

that it will not notify you when hungry, and just as soon as it closes its mouth and does not open it when touched you may be sure that its appetite is satisfied for the time being. Young birds should be fed little and often, but the amounts given and the intervals between feeding should be gradually increased.

Generally a young bird will begin to pick up food of its own accord, but it may be taught to feed earlier if you always drop a little of the food into its cup while feeding it. It requires some patience to raise a young bird by hand, but all birds grow very rapidly, and hand feeding is only required for a very short time. As soon as your bird is able to perch, take it upon your finger and gradually accustom it to take food from your hand without your help. From this it is a very easy step to feeding from the dish, and if each time you approach the cage to feed the bird you utter some call or whistle, the bird will very soon learn to respond.

If the bird is a crow, jay, magpie, or other species that is capable of learning to mimic or talk, you should commence training it just as soon as you get it from the nest. It will not, of course, learn to talk at this tender age, but if it hears the same word or sounds every day at a certain time, they will be impressed upon its mind and it will associate them with your visits.

My own crow and jay learned to speak a few words when less than two months of age, and having once mastered the rudiments of speech these birds will learn very rapidly.

These directions and suggestions are, of course, general, and each species and individual must be fed and cared for in a slightly different manner from all others. In the following descriptions of various wild birds which are recommended for pets, more specific directions for feeding and care are given.

HAWKS AND OWLS

These birds are very easy to rear in confinement, and from the very first they may be fed upon raw meat, liver, mice, small birds (such as English Sparrows), frogs, lizards, small fish, and insects of all kinds. Be careful not to feed pieces that are too large, for the young hawks and owls are very greedy and will frequently choke themselves to death in their anxiety to swallow too large a piece of meat. At first, raw meat and liver are good, but these should be varied with large insects, and now and then some finely ground bone should be sprinkled on the meat.

As soon as they show any inclination to tear or peck their food, they may be given pieces of dead mice or birds, for bone is very essential to these carnivorous birds. If fed exclusively on clear meat and insects, they will be weak and their legs will not be strong enough to support them; in other words, they will not have enough lime to form strong bones, and will suffer from the disease known as "rickets." If you cannot secure mice or other small animals, use ground bone pressed into the meat.

Most hawks and owls never become very tame, even

when raised from nestlings, but certain species and some individuals show a great deal of affection and are very docile and readily tamed. The common buzzard hawks, known as "Hen-Hawks," as well as the pretty little Sparrow-Hawks, become quite tame and will learn to come at a call or whistle, but some of the falcons are invariably wild and fierce and cannot be really tamed.

Owls are even harder to tame than hawks. The little Saw-Whet Owls, Prairie Owls, Screech-Owls, and other small species frequently become very tame, but the larger species are usually vicious, snappy, and treacherous.

Tame hawks and owls are of little interest save as curiosities, and, as they require a great deal of space and are dirty and ill-smelling, they are not to be highly recommended as pets.

CROWS, RAVENS, AND SIMILAR BIRDS

These birds are very amusing, interesting, and entertaining pets and are exceedingly intelligent. When reared from nestlings they become as tame and docile as kittens or poultry and will voluntarily remain with their owners. They are all capable of learning to pronounce English words and to talk or to mimic other sounds, and they may be taught many amusing tricks.

The young are easily reared by feeding hard-boiled eggs and raw egg for a few days and gradually adding insects, chopped meat, and ground bone until the birds

are able to feed themselves. The egg and meat may then be reduced and cooked meat, fruit, seeds, grain, green food, and insects given until no egg is fed.

By this time the young crows will be able to eat almost anything and will enjoy hopping about in the garden and foraging for themselves. If you spade or dig up the ground the crows will follow you about and seize every earthworm and bug you turn up.

A cage or refuge of some sort should be provided for sleeping quarters, but the birds may be given full liberty during the day if you wish. If they are not to be allowed to roam about, you can keep them very comfortably in a large enclosure of wire netting, with a natural earth floor and growing trees, shrubs, and plants. Crows enjoy both sand and water baths and are very clean and tidy birds. A good-sized bathtub should be furnished and a bath given daily. If kept in a netting enclosure, the birds may remain out all winter, but a shelter of some sort should be provided.

A thick mass of evergreen boughs does very well, but a water-proof box or an apartment, open at one end, fitted with perches inside is still better. In cold weather you should feed plenty of rich animal food, should give tepid water, and should be careful to see that the drinking water does not freeze so the birds cannot get at it. Do not give baths during the cold weather but furnish a box of clean, loose, dry sand.

All the crow family are born thieves and are full of mischief. Never allow your pet crow to be alone in a room or house where there are jewels, coins, or other

bright objects, for it will certainly make off with them and hide them in some out-of-the-way place where you will never find them.

Crows and their relations have powerful beaks and will kill and devour any small bird or animal they can reach, so keep kittens, rabbits, guinea-pigs, or chickens where "Jim Crow" cannot get them. A person who has never owned a pet crow, raven, or jay does not realize how much humor a bird may possess or how entertaining a pet bird can be.

BLACKBIRDS

Many of the American Blackbirds are very injurious to crops, and, as they are very abundant and are not good songsters, there is really no objection to keeping them in confinement. The handsome Red-Winged or Marsh Blackbird, the Yellow-Headed Blackbird, and the Purple Grackle are all handsome, lively birds that may be easily reared and are happy in confinement. Feed them on boiled egg and bread when young, and on a mixed diet of seeds, insects, fruit, and mocking-bird food when fully grown. Some of these birds will learn to whistle or pipe a tune, like the starling, and all are very easily tamed and become very docile and affectionate. They require daily baths, great cleanliness, and large cages.

SPARROWS

Many of the native American sparrows are beautifully colored or have charming songs, and, while I do

not advise keeping them in captivity as a rule, yet in many parts of the country certain kinds are kept largely as cage-birds. Among these are the Cardinal, or Virginia Redbird, the American Goldfinch, the Towhee, the Nonpareil, the Indigo-Bunting, etc.

Formerly these species were sold by all dealers in birds, but under modern laws they are mostly protected and are not offered for sale.

These sparrows all require the same food and treatment as similar birds already described, and most of them thrive very well in cages.

Do *not* capture any of these species with the intention of keeping them in confinement, but if you find an injured or helpless bird or one that is already caged and is badly treated or improperly cared for, you are justified in caring for it properly and keeping it as a pet.

CHAPTER XVI

GAME-BIRDS AND WILD FOWL

RAISING GAME-BIRDS AS PETS

A GREAT number of our common wild game-birds, as well as many foreign game-birds and wild fowl, may be raised easily in captivity.

Many of these birds, although naturally very wild, become as tame and friendly as ordinary barnyard fowl. Birds are very intelligent creatures, and the gallinaceous or scratching birds in particular soon learn to discriminate between those who protect and those who persecute them. In many places wild game-birds, when protected from hunters, feed regularly in the barnyards with the poultry and show no fear of man.

In Bermuda "bob-white," or quail, are protected, and they are often seen feeding among the chickens in dooryards or in the roadways. Nearly all wild game-birds or gallinaceous birds when in captivity may be fed on practically the same food and may be given almost the same treatment as poultry.

This is particularly true of native game-birds, for many of the foreign species will not stand our severe winters and require special foods.

Not only are wild fowl and game-birds interesting to keep, and desirable as pets, but, if raised systematically on a large scale, they are very profitable. In

many places there is a steady and growing demand for partridges, quails, pheasants, and similar birds for stocking game-preserves and parks, and, as nearly all of these birds lay a great number of eggs and increase rapidly, a large number may be obtained, even if you start with but a few birds.

The subject of breeding and rearing game-birds for sale is a very broad one and to go into its details would require a special work. In a general way, however, the care and feeding of game-birds raised for profit is very similar to that required when the birds are raised for pleasure; but larger houses, runs, and enclosures must be used, and it is a waste of time to try to raise game-birds for profit unless you have abundance of room and lots of time to devote to the business.

Aside from their desirable qualities as pets or for profit, many game-birds are to be highly recommended for ornamental purposes. Many of them are beautifully colored and have elegant forms, and a few of the handsomer pheasants, a peacock, or a curassow will be a great addition to well-kept grounds and will always prove attractive to visitors.

Many boys and girls now raise chickens and other fowl, but they will find a great deal more pleasure and entertainment in turning their attention to pheasants or similar birds. Any unusual or uncommon thing is attractive, and doubly so when it is beautiful, and we can scarcely find any birds more beautiful and unusual than some of the pheasants and other game-birds.

There are so many varieties of these birds that it is impossible to mention them all, but I will describe some of the more desirable and beautiful kinds, especially those which are easily raised and cared for and are suitable for amateurs to keep.

PHEASANTS

This term is applied to a number of species of gallinaceous birds, most of which are natives of the East Indies and the Orient, but as a matter of fact the common barnyard fowl, the peacock, and the guinea-fowl are all pheasants. The wild ancestor of our common poultry was the Jungle Fowl of India, which resembles very closely some of our domestic bantams and gamecocks. There are a great many species of pheasants, and many of these have been crossed so that among the commoner domesticated pheasants we find a great deal of confusion in regard to names and distinctions.

The majority of the so-called pheasants are very hardy birds and naturally inhabit the high table-lands and mountains of Asia, and many of them do perfectly well out-of-doors during the winter, even in our Northern States.

In a general way, pheasants may be grouped into two classes known as "Game Pheasants" and "Aviary Pheasants." The former are those species that are suitable for stocking game-preserves and parks and which readily take care of themselves and become naturalized, while the aviary birds include the species raised mainly for ornamental purposes, and which are

too valuable, too tender, or too tame to be easily naturalized, or to raise their young and increase under natural conditions. The two classes, however, grade from one into the other, and, moreover, while many of the aviary species are not suitable for game-preserves, yet practically all the game pheasants will do perfectly well for aviaries or for pets.

Some species of pheasants make excellent pets and will learn to come at a call, to eat from the hand, or to stay at home just as readily as common chickens. Other species are wild and untamable and will take to the woods and fields if given an opportunity.

Pheasants have been raised in captivity for a great many centuries in Asia and were introduced into Europe and England by the early Greeks and Romans.

In many parts of Europe, and especially in England, the pheasants are the commonest game-birds, and thousands are annually killed and sold in the markets. Most of these birds are the *English Pheasant* and the *English Ring-Necked Pheasant*, but on some estates *Golden Pheasants*, *Reeves's Pheasants*, and *Mongolian Pheasants* are well established.

In America numerous attempts were made to introduce pheasants at intervals for over one hundred years; but all of these proved unsuccessful until 1882, when about fifty Chinese Ring-Necked Pheasants were shipped from Shanghai by Hon. O. N. Denny, the United States consul-general there.

These birds were liberated near Portland and were strictly protected by game-laws for ten years. At the

end of that time a shooting season of two and one half months was opened, and over fifty thousand pheasants were killed during the first open season; and at this time it was estimated that there were more pheasants in the State of Oregon than in the whole of China. So wonderfully well had the birds become acclimated and so rapidly had they increased that in 1896 over ten thousand were marketed in a single month, and over one hundred thousand were killed.

This serves to illustrate the wonderful rapidity with which pheasants increase under favorable conditions, and their success in Oregon was so great that almost all other States have now introduced pheasants, and in many places they are very abundant.

GENERAL CARE

In breeding or rearing pheasants each person must act more or less for himself and must be governed by surroundings, locality, and other circumstances; but some general rules are suitable for all conditions.

It must always be remembered that pheasants are not truly domesticated birds and that many species thrive best when their natural tendencies are catered to. Many of the pheasants prefer to sleep in the open rather than in houses or under cover, and some species which will seek the shelter of a shed in the daytime in stormy weather will, when night comes, seek their exposed roosting place, no matter how cold or stormy it may be.

If both open and protected roosts are available, you

can trust to the birds to select the place best suited to them, and you need have no fear that they will suffer from exposure, as they are perfectly well able to look out for themselves.

PENS AND RUNS

Any sort of a place will do for the pheasant house and enclosures as long as it is well drained and somewhat hilly or sloping.

A light, sandy loam soil is the best, and a clayey soil is the poorest, for it is very likely to induce disease. The pens should face the south or southwest, should have both sunshine and shade, and should extend east and west. The size of the pens will depend upon the number of birds. For a cock and three to five hens a good size is 6 feet high, 6 feet deep, and 8 feet wide. This will be large enough for the number of birds mentioned during the breeding months, and will accommodate twenty to thirty birds during cold weather. If your flocks increase it is better to add more pens and runs rather than to make each one larger.

The pens should be open on the southern side, with windows or doors hinged at their tops to serve as protection from cold and driving storms, and the roof should be water-tight and sloped enough to shed rain well. Pheasants require protection from wet and dampness more than from cold weather, and a dry spot for them to run in and roost under in bad weather is the main object of the roofed shed.

The floor of the pen should be the natural earth, and it should be slightly higher than the ground around it to insure drainage. This will keep the floor dry and furnish the birds with a dust bath, which is very essential, as pheasants depend upon it to keep free from lice and to clean their plumage. A box of old mortar, cinders, and gravel should be kept in the shed, and it should be provided with good-sized perches placed well up toward the top.

Each pen should have a run or enclosure from 20 to 50 feet or more in length and the same width as the pen. This should be made of 1-inch-mesh wire netting, sunk 18 inches in the ground as a protection against rats, weasels, etc.

The top of the runs should be covered with netting, and a few inches below this top cord-netting or fish-net should be stretched to prevent the birds from injuring themselves against the wire netting if they attempt to fly out. The cover is just as necessary to keep hawks, owls, and cats out as to keep the pheasants in.

Each end of the run should have a door, and if it is possible several trees, shrubs, or bushes should be enclosed within the run, for the birds will like these much better than regular perches. If no trees or shrubs are available, place plenty of perches in the run, and have them slightly lower than those in the shed in order to induce the birds to sleep under cover as much as possible.

In cold weather the floor of the run may be covered with dead branches, pine or fir needles, and straw,

which will protect the birds' feet, while in warm weather the chips and litter will attract numerous insects, which are splendid food for the birds and will keep them busy scratching. The sides of the run may be boarded up part way if dogs or children are likely to disturb the birds, but most fanciers prefer no boarding at all.

If you keep many birds you should have enough runs so that the birds may be shut out of one and allowed in another from time to time. This will afford an opportunity to spade up the ground in the old run and to start grass, clover, or plants within it. The change from one run to another will often add to the health of the birds, and hens that have stopped laying will often start again when placed in a new run or pen. The runs and pens should be side by side, with communicating doors so that the birds may be transferred without handling, and all doors to the runs and pens should be arranged to close automatically with weights or springs.

All runs and pens should be kept scrupulously clean, for unclean quarters cause more diseases among pheasants than anything else. Each should be well spaded up and limed at least once a year, and at this time the runs should be planted with clover, vetch, alfalfa, timothy, or other rapid-growing, hardy vegetation to afford cover to the birds.

If the growing grass is worn or destroyed, or you cannot have it conveniently, you should place freshly cut sods or turf in the run every few days. The birds

thoroughly enjoy tearing these to pieces in search of the insects they contain.

If hawks or owls are common in the neighborhood they should be destroyed, for, while these birds may eat a great many mice and other vermin and cannot reach the birds through the netting, yet they frighten them and keep them disturbed and nervous. Rats and mice may be trapped, or a dog may be fastened to a ring which runs on a wire all along the run on the outside, and he will thus be able to guard the birds. Minks, weasels, and other animals are at times troublesome, and to keep these out of the runs a layer of fine netting should be sunk horizontally a few inches beneath the surface of the earth outside of the run. All burrowing animals will attempt to dig close to the walls of the run, and the horizontal strip need not be over a foot wide.

HANDLING NEW BIRDS

When your pheasants first arrive they will be timid and nervous from their trip in small crates, and every effort should be made not to frighten them.

Have the crate placed in the run with a supply of water and food near at hand, and toward evening open the crate so that the birds may readily emerge. Then leave them and keep away from the run for a few days, only approaching when it is necessary to furnish food or water. At first the birds will feel strange in their new quarters, and will try to escape at your approach, and if not treated carefully they may kill or injure themselves by dashing against the netting.

It is a good plan to place the food and water in the cage after dark for the first few days, so as not to disturb the birds, and after a short time you will find that they become accustomed to your approach. As they gain confidence visit the run more and more often, and when you find that they are not at all nervous in your presence enter the run to place the food and water in the enclosure. At first you should barely step inside and should increase the distance you enter very gradually until the birds will permit you to walk and work within the run without showing any nervousness or fear.

If you wish to keep the birds tame, always feed and care for them personally and try to wear the same clothes each time you enter the run. Pheasants apparently judge a person mainly by his clothing, and any great change in costume will usually startle them as much as the entrance of a complete stranger.

In the breeding-season it is particularly important not to frighten the birds, and strange people, dogs, and cats should not be permitted to approach them.

You will probably find that some individuals are tamer than others, and by separating these you may be able to make them into perfect pets. Whenever it is necessary to handle or catch a pheasant, be very careful not to grasp it by the legs, as they are very slender and easily broken. A large crotched stick with netting of string between the forks should be placed over the bird, which may be thus held down while you catch it with your hands over the wings.

Of course, this applies only to wild or nervous birds; those which are really tame and will allow you to touch them may be carefully but firmly grasped over the wings, using care not to startle or hurt them, in which case all your trouble in taming may go for naught.

BREEDING

The mating season of pheasants varies more or less with the species and with the locality, but as a rule it commences in February and lasts into June.

Always keep each variety of pheasant in a separate pen and run; and in the breeding-season a single cock should be in a pen with three or more hens of the same species. If more than one cock is in a run they will fight and kill one another.

Pheasants that are thoroughly at home in their pens and are accustomed to their surroundings will prove better breeders than new arrivals. It is not essential to give the birds nests for laying, for a corner filled with brush or corn-stalks will serve just as well. Unless some arrangement of this sort is made, the eggs will be dropped anywhere and will be broken or eaten by the cocks.

Egg eating is a serious trouble with many pheasants, and while the males are usually the worst offenders, the hens soon acquire the habit; but the birds seldom touch eggs that are not on open ground. The best way to prevent this practice is to remove the bird that eats the eggs; but china eggs, or egg-shells filled with Cayenne pepper, soft soap, etc., placed in the run will

often cure the birds of this troublesome habit. If the eggs are laid in cover or brush and are collected promptly there will be little danger of egg eating.

Collect the eggs every day, and if not to be set at once, they should be placed end up in a covered box containing bran and should be kept in a dry, cool place and turned over once each day. It is advisable to set the eggs just as soon as a sufficient number are obtained, but they may be kept up to ten days or two weeks before setting if necessary.

During the laying period the birds should be well supplied with fresh gravel, old mortar, cinders, and ashes, and a rusty nail or piece of iron should be kept in the drinking water.

HATCHING

Pheasant's eggs should be hatched under common hens, and a good mother and setter of lively habits and fairly light weight should be selected for the foster-parent. Cochin Bantams are the very best fowls for the purpose, and most dealers in pheasants can supply hens of this breed, especially reared for hatching pheasants' eggs. Some fanciers prefer turkey-hens for rearing the young pheasants, but, as a rule, light-weight fowl are better. Wyandottes, Rhode Island Reds, and other breeds all do well. You should always use great care to be sure that the hen does not suffer from "scaly-leg," "roup," lice, or other diseases.

Dipping the hen's legs in a 5-per-cent-carbolic-acid solution before allowing her to set, repeating the

treatment from time to time, is a wise precaution against scaly-leg.

Lice are often fatal to young pheasants, and the hen should be well dusted with insect-powder before she is allowed to set, and once each week afterward until three or four days before the time the eggs should hatch. A good-sized dust bath should also be convenient for the hen's use.

The exact size and arrangement of the hatchery may vary a good deal, but the simpler it is the better. It may consist of several separate boxes or coops, or of a number built together in a row. The hatching coops do not require floors, but the tops should be waterproof and should slant enough to shed water readily.

Good ventilation is important, for a stuffy hatchery will become infested with lice and fleas. A 1-inch-mesh wire netting or a board should extend in front of the coop for 2 or 3 feet so that the hen may eat, drink, exercise, and dust herself; and in this enclosure the chicks can run until removed to larger quarters.

The run containing the hatchery should be covered and enclosed with ordinary poultry netting to keep out animals and other enemies. A good size for the hatching-box is 14 inches square at the base, 18 inches high in front, and 14 inches high at the back. Across the front side, at the bottom, a board 3 inches wide may be nailed with a similar strip 2 inches wide at the top. This will leave an open space about 12 inches wide, and into this space a board should be fitted and hinged to the 3-inch bottom strip, so it can open down-

ward and outward, and a fastening should be attached to the top strip to keep the door closed when necessary.

If several boxes are used in a row, the tops, bottoms, and backs may be formed of long pieces extending the entire length of the boxes. The top of the box should project at front and back to shed rain, and if it is hinged so it can be opened it will often be found convenient.

The nest should consist of a sod, turned grass downward, with the earth side slightly hollowed out and with a little grass or short straw placed in it. If preferred, the soft earth of the box may be hollowed out and lined with soft, dry grass.

Food and water should be placed near the nest each day, and when the hen first commences to set and shape the nest, it is a good plan to use a few common hens' eggs or artificial eggs, as otherwise she may break the pheasants' eggs before she really gets comfortably settled.

Give the hen from nine to twelve eggs, according to the number she can cover, and leave her alone as much as possible. At a certain hour each day, place food and water in front of the coop and open the doors so the hen can come out. Within twenty or twenty-five minutes she should return to her nest and may be locked up until the next day. Nests should be kept very clean; all broken eggs and other refuse should be removed, and the remaining eggs washed in tepid water if soiled. The eggs should hatch in from twenty-one to twenty-four days.

If an egg has been chipped by the chick but the latter is unable to get out in eight hours it may be assisted by placing the egg in a shallow pan of warm water for a minute or two, with the chipped portion uppermost and out of water.

Never attempt to drag or pull a chick out of the shell; let it emerge slowly of its own accord. Let the young chicks remain in the nest for at least a day after the last egg has hatched and have the coops for the chicks ready for them.

These coops should be 2 feet square, 18 inches high in front, and 14 in the rear, with a runway 4 to 6 feet long, and the width of the coop with sides made of 1-inch-mesh wire netting, or of boards a foot in height.

REARING THE CHICKS

This is the most critical point of the young pheasants' lives, and they will require two or three weeks of unremitting care and watchfulness and attention to detail.

Extreme cleanliness is necessary, and all drinking and feeding receptacles should be washed and scalded daily. Weather conditions must be noted, and precautions taken not to expose the chicks to dampness or direct and excessive sunshine, and in very dry weather the grass near the coop should be sprinkled and a leafy branch should be placed near by to furnish shade for the chicks. Place the coop on a freshly cut grass or clover plot, and move it to a new location each day. The tender grass shoots with the insects among the roots provide a large part of the food of the chicks.

Always keep a shallow dish of water within their reach and place a few small stones in it. When they have learned the call of their foster-mother and answer it, the chicks may be allowed at large.

At first the hen may be given her freedom with the chicks, but if they show any tendency to stray away they should be confined in larger runs. Dust baths should always be furnished to the young birds, and the coops should have hinged doors like those of the hatchery boxes, so that the birds may be locked in during bad weather.

The foster-mother and the young chicks should always be given separate food. It is not necessary to feed the chicks at all until they are twenty-four hours old, but they should be given fresh, clean sand or grit to pick at during the first day. They will develop an appetite by the second day and should be fed every two hours on this and the next two days, after which the number of feedings may be gradually reduced, until at the end of three weeks the youngsters are being fed but three times a day.

Opinions vary as regards the best pheasant food for the chicks, but many of the methods used by large breeders—such as keeping a supply of fly-blown, rotten meat on hand to produce maggots—are so disagreeable and objectionable as to be unworthy of consideration. The best and cleanest foods for young pheasants are boiled eggs cut fine, custards, and the prepared game-bird foods. To make a custard, beat ten eggs thoroughly, add a quart of milk, and bake

until dry and free from whey and do *not* add seasoning or sugar. Set the dish with the custard in a pan of water when baking to prevent scorching. A mixture of milk, eggs, and Indian or oat meal, just damp enough to be crumbly, is a very good food. Ants' eggs and meal-worms are excellent, and grasshoppers, small crickets, and other insects are all good.

If you rear only a few chicks you can easily raise enough meal-worms for them, and can obtain a vast number of insects by "beating" the long grass and weeds of fields and meadows. To do this, have a strong, stout net of unbleached cotton on a stout handle, and have the bag of the net at least 2 feet deep and 10 inches in diameter. Provide several large, stout paper bags to hold the insects, and proceed to "swish" the net back and forth through the grass and weeds as you walk along. After travelling for two or three dozen yards in this way, look into the net, and if you have found a good hunting-ground you will be surprised at the vast number and variety of insects you have caught. Place a paper bag against the opening of the net and turn the net down into it. Grasp the neck of the paper bag over the net, and withdraw the latter slowly, gradually pressing the bag together as you withdraw the net, and thus scraping off the insects and preventing them from crawling or hopping out. As soon as the net is fully withdrawn tie up the bag and proceed to secure more insects to fill the next bag.

After all the bags are filled they may be taken home and emptied one at a time onto the ground where the

young pheasants are feeding. You will have a lot of fun watching the little fellows rushing about to capture the released insects, and the chicks will be benefited by the exercise as well.

Another good plan is to hang the bags of insects in a dry place and use the dried and dead insects to mix with the eggs, custard, and mush with which you feed the chicks.

Another excellent food is made of boiled potatoes mashed and mixed with finely chopped boiled eggs, corn-meal, bran, and chopped meat scraps. Still another desirable mixture consists of one quart corn-meal, one quart wheat middlings, one pint bone-meal, one pint beef scraps, and one pint of milk thoroughly mixed.

Feed greens, such as finely cut fresh grass, clover, lettuce, chickweed, etc., in abundance.

After the first few days commence feeding whole seeds such as millet, hemp, canary seeds, etc., gradually increasing the quantity of seed and decreasing that of soft food until the diet consists entirely of seed and grain.

Be careful not to overfeed; pheasants, both young and old, are light eaters and are easily overfed. Just as soon as the birds lose interest in the food stop feeding.

FEEDING

As pheasants are light feeders, fifty cents a year should be ample to pay for one pheasant's meals. Vary

the food as much as possible and feed morning and evening at regular times, and do not feed any more than the birds will eat. If any feed is left over decrease the next meal by that amount.

When coming to feed the birds give a whistle or call or tap the sides or edge of the dish, and the birds will soon learn to recognize the sound and run toward you. Always serve the food in clean tin, enamelled, or glazed dishes, as porous earthenware is hard to keep clean.

Never scatter food on the earth or ground, as it soon spoils and is trampled into the earth. Clean up all wilted green food and scraps after each meal and keep the pens, runs, perches, and dishes as clean and neat as your own kitchen or dining-room.

Pheasants like an abundance of green food and grass, cabbage, lettuce, clover, alfalfa, apples, beets, turnips, and, in fact, any kind of fresh green growth or vegetable will be good for them.

When feeding grass dig up big pieces of coarse turf and place these in the run; these sods contain lots of insects and the birds love to tear them to pieces. Never feed long grass blades, as these catch in the birds' crops and produce a serious condition known as "crop bound," which is often fatal.

Feed plenty of grain, meat scraps, insects, corn-meal, wheat bran, and finely chopped raw or boiled beef. If you feed a mash of bran, meal, etc., never make it wet enough to be "sloppy."

Among the best grains are Kaffir-corn, paddy, oats,

buckwheat, millet, and canary seed. Indian corn should be fed only in cold weather and in very small quantities, as it is very heating. Always keep a supply of charcoal, broken oyster and clam shells, old lobster or crab shells, and gravel in the run, and invariably have a dish of clean, fresh water where the birds can drink whenever they wish.

DISEASES

Pheasants are not subject to a very great number of diseases, but as they are not so long accustomed to domestication as ordinary fowl, they are more susceptible to the various ailments. Cleanliness, proper feeding, and good care do much to prevent disease; but even under the most favorable circumstances diseases will now and then trouble the birds.

Disinfection is of great importance, for many of the diseases of these birds are due to minute parasites, and are easily transmitted from one bird to another. Disinfection is of importance not only as a means of checking the spread of a disease but also as a means of preventing it; and the buildings should be occasionally disinfected as a regular matter of routine. Buildings may be disinfected by burning sulphur, or formaldehyde fumes may be used, and the woodwork may be painted with carbolic-acid solution.

The earth in the runs and pens may be well disinfected by spading it up after top-dressing it with lime, after which cow-peas or oats or some similar quick-growing plants may be sown and the run left idle for

a few months. When using carbolic-acid solution add whitewash or color to it so that you may see where it has been used and will not overlook any corners or crevices.

Lice.—Lice cause the greatest annoyance to the pheasant breeder. Great care must always be used to see that the foster-mother is not infected and, as already directed, she should be treated with insect-powder to make sure. If the chicks should show signs of lice, apply vaseline or olive-oil on the top of the heads, on the throat, around the ears, and under the wings.

Feather Pulling.—This is often a serious trouble among pheasants. This affection or habit should be checked at once, and the best way to stop it is to remove the offending bird and any badly plucked birds and keep them separated from the others. An abundance of room is a good preventive, and sometimes if plenty of cover is furnished the hens will be able to hold their own against the attacks of the cocks.

Another method is to clip the wings of the cocks and place a partition in the pen too high for them to flutter over. The hens may then escape readily to the other parts of the run or can take refuge on a high perch. If the cock's wings are clipped, low perches must be provided for their use, as they cannot fly to the high perches.

Pasting.—Pasting occurs usually during the first week of life. The chick loses its vivacity, sits with eyes closed and its downy coat fluffed until it appears

like a ball. Examination reveals the vent plugged or covered by a whitish, chalky, or pasty substance. This stoppage of the vent frequently leads to death in a day or two as the result of the absorption of putrefactive poisons due to retention of the fæces. Treatment consists in the immediate gentle removal of this chalky plug and the application of a few drops of sweet-oil or a bit of petrolatum.

Diarrhœa.—*Whitish* diarrhœa may be caused in very young chicks by cold, by overheating, by overfeeding, or by too little or too much water. The observant fancier will come to recognize these conditions almost instinctively and will relieve them by at once altering the régime. This should be all that is necessary. If more is required it is evident that either the case has been permitted to run so long that the chick is too weak to recuperate or infection is operating.

White diarrhœa of chicks, so dreaded by the poultry man, is an affection of pheasant chicks as well. The diarrhœa is merely a symptom of a severe infection of the intestines, especially of the blind pouches, or cæca, by a low form of animal life known as *Coccidium tenellum*, and we therefore speak of the disease as an intestinal coccidiosis. The white coloration of the fæcal discharge, as in the two previous diseases, is due to excretions from the kidneys. In certain virulent forms of the disease the minute blood-vessels on the inner portion of the intestinal wall burst, and the bleeding gives rise to a dark-brown or even blackish coloration, which obscures the white effect of the uric acid.

Treatment should begin with the administration of Epsom salts, mixing them in a mash and estimating from eight to fifteen chicks to one teaspoonful of the salts, according to age, size, and previous thriftiness. The drinking water should contain sulphate of iron (copperas) in the proportion of ten grains of the copperas to one gallon of water, or enough permanganate of potash may be added to the drinking water to give the water a claret-red color. The coops, feeding utensils, drinking vessels, and runs should be disinfected as previously directed. As a preventive measure, incubators and brooders should be cleansed and disinfected, and, prior to incubation, whether natural or artificial, the eggs should be dipped in 95-per-cent alcohol, or in a 4-per-cent solution of some good coal-tar disinfectant.

Gapes or Gape Disease.—The disease known as gapes is particularly fatal to young pheasants. The two names given above are derived from its chief symptom. It is caused by a worm called *Syngamus trachealis*, the generic name, *Syngamus*, recognizing the permanent sexual union that exists between the male and female. For this reason the worm is also called the branched worm, forked worm, and Y worm. From its color it is known as the red worm. Attached to the wall of the chick's windpipe by means of the sucker on the head end of both male and female portions, it is only with great difficulty loosened by sneezing and coughed up. Death usually results from suffocation due to obstruction of the windpipe by the large, well-fed worm

distended with blood drawn from its host, or to the presence of a few worms and excessive mucus combined, or, again, to the presence of a large number of worms.

In addition to the symptom of gaping, there is a peculiar stretching out of the neck, with an actual gasping for breath. Many claim to be able to diagnose the disease by a characteristic sudden, whistling cough, somewhat like a sneeze. However, as these symptoms might be easily counterfeited by bronchitis, pneumonia, so-called brooder pneumonia, which is really a mould infection of the lung, and roup disease of the larynx and windpipe, the only sure means of demonstrating the disease is to find the worm.

The usual method of treatment is to take a horse-hair formed into a loop, a small feather from which have been removed all barbs save those at the tip, a timothy head treated in the same manner as the feather, or even (if great care is exercised) a very thin wire twisted into a loop, pass it gently down into the windpipe, and, after making a few turns, carefully withdraw it. Sometimes these instruments, before being used, are dipped in sweet-oil, or sweet-oil containing a few drops of turpentine. In this way the worms are either withdrawn or loosened from their attachment to the windpipe, so that the chick can cough them up. Garlic in the drinking water or mixed with the food has often proved efficacious.

Since the disease is spread by the young birds taking in with their food the worms and their eggs that have been coughed up by infected birds, one of the

first steps in treatment is to remove all the birds from the infected ground and to separate the sick from the well. The infected ground should be immediately treated so as to destroy the gape worms and their eggs. As the earthworm has been shown to be not an intermediate host, but a carrier of the gape worm or its ova, the surest way of raising the young chicks where the ground has probably been infected is to rear them on board floors.

Another method of treatment is fumigation. A smudge may be made from tobacco; tar or sulphur may be vaporized; or carbolic-acid fumes may be produced by pouring a small quantity into boiling water. Caution must be used in the application of this method, as there is great danger of suffocating the birds or of their being overcome by the drug effect of the substances volatilized.

Cramps.—Under the name of cramps, used by the keepers of pheasants, Doctor E. Klein, of England, has described a disease which causes great mortality among birds during the second and third weeks of life. It begins with lameness in one leg, followed the next day by lameness in the other. Death occurs, as a rule, on the third day. Post-mortem reveals softening and fracture of the thigh-bone and of the bone of the leg, associated with the presence of considerable blood in the surrounding tissues. The only treatment is to destroy the bird, burn the carcass, and disinfect the grounds and houses.

DISEASES AFFECTING MAINLY ADULT PHEASANTS

Roup.—Certain affections known as contagious catarrh, diphtheria, and roup, if, indeed, they be distinct diseases, generally group themselves in the fancier's mind under the one name, roup. The term diphtheria should not be used, because it belongs properly to that disease in the human family which is caused by a special bacillus which does not cause disease in birds. The other two names may represent two different stages of the same disease, a contagious inflammation of the mucous membranes of the eyes, nose, mouth, throat, gullet, or windpipe, which may express itself by a watery, sticky, bad-smelling secretion or by the development of yellowish patches.

In the treatment of these affections the first thing is to recognize the contagiousness and to isolate the sick birds. Disinfect houses and grounds. Make a mixture of peroxide of hydrogen and boiled water, equal parts; into this plunge the head of the affected bird. By means of a slender wire covered with a little absorbent cotton and dipped in this mixture clean out of the eye or scrape off the tongue and sides of the mouth all yellowish matter and apply a 4-per-cent solution of borax or boracic acid or the peroxide solution named above. Give all birds, sick and well, a dose of Epsom salts. Keep iron sulphate or permanganate of potash in the drinking water.

Pneumonia.—Pneumonia as a popular term in bird diseases probably often includes inflammation of the

windpipe, inflammation of the bronchial tubes (bronchitis), and inflammation of the lungs. Difficult breathing, wheezing, coughing, and shaking the head, associated with the usual symptoms of feverishness, weakness, and loss of appetite, call for treatment. A purgative, such as Epsom salts or a teaspoonful of castor-oil, should be given first. Keep the bird in a dry place. From time to time allow it to inhale the fumes of burning sulphur or tar, or the vapors arising from carbolic acid in boiling water. Do not allow the fumes to become too dense.

Enteritis.—Enteritis, as used in bird medicine, means inflammation of the intestines. While it may originate from cold, improper feeding, and the like, it is usually an infectious disease and calls for prompt cleansing of the digestive tract, which is best accomplished by Epsom salts or a teaspoonful of castor-oil containing about fifteen drops of turpentine. Add iron sulphate or permanganate of potash to the water; isolate the affected birds. Disinfect thoroughly the houses, utensils, and grounds, and sprinkle lime everywhere. The causes may be coccidia, such as we find in white diarrhoea of chicks; flagellates, as in the canker of pigeons; or bacteria, as in Klein's infectious enteritis.

Cholera.—Cholera would really come under the third class just mentioned. The organism causing it is frequently so virulent that death comes within a few hours, even before the diarrhoeal symptoms have had time to manifest themselves. The treatment would be practically that outlined under enteritis, although treatment

is usually of no avail. Kill the very sick and treat only the apparently healthy, thus anticipating and preventing the disease. Necessary in all the other diseases, it is of supreme importance in cholera to burn quickly all dead birds, after saturating them with coal-oil. Burying deep and covering with lime may have to do, but it is not so good a method. In killing the sick birds do not use the axe, and thus spatter everything with the infective blood.

Scurfy Legs.—The affection known as scurfy legs, scaly-legs, scabies, or mange of the legs and feet is caused by a parasitic mite *Sarcoptes mutans*, which burrows under the scales and by its presence sets up an irritation which causes a rapid increase in production of cells, together with a secretion resulting in a gradual thickening and elevation of the scales. Being a parasitic disease, scaly-legs is transmissible from one bird to another and from infested houses, perches, nests, etc. Treatment must begin with isolation of the patient and the thorough application to the coops and fixtures of boiling soapy water, then kerosene, and finally a coat of 5-per-cent carbolic acid, to which has been added enough lime to make a whitewash. The affected bird should have its legs soaked in warm soap-suds, this part of the treatment being completed by a good scrubbing with a small hand scrub. This alone has cured the disease. However, it is best to follow this with a good rubbing of sulphur ointment (one part flowers of sulphur to nine parts of lard, sweet-oil, or petrolatum).

Scab.—Body mange or scab is caused by a sarcoptic mite, to which some authors have given the name *Sarcoptes lævis*. Loss of feathers at various points of the body calls for examination, which shows the skin apparently normal but the feathers broken off at the surface. If the rest of the feather be pulled out, the roots will be seen to be covered with a dry, powdery mass made up of dead cells and parasites. Treatment calls for isolation of diseased stock, disinfection of coop and fixtures, and application to the skin of flowers of sulphur in the form of either a dusting powder or an ointment. The application of sweet-oil containing a small quantity of kerosene or carbolic acid, carbolated petrolatum, or even lard with carbolic acid, will be found to give good results.

Air-Sac Mite.—Serious disease is frequently caused in a flock by the presence of the air-sac mite. This mite, *Cytodites nudus*, inhabits the air-sacs of birds, chiefly those of chickens and pheasants. Often its presence in large numbers causes congestion and inflammation of the lining membrane of the air-sacs. Sometimes the bronchi become plugged with them, sometimes a pneumonia is set up, sometimes the irritation opens the way for the entrance of bacteria which cause secondary disease and death. Treatment is very difficult and unsatisfactory. Sulphur mixed in the food has been recommended. The inhalations and garlic treatment suggested under gape disease might be beneficial.

White Comb.—White comb or favus is a fungous or mould disease of the comb, head, and neck. It is

caused by the *Achorion schönleinii*. In general appearance favus resembles mange. There is the development of white, powdery scales upon the comb, and the feathers of the head and neck become brittle and break off at the surface of the skin. The affected parts should be anointed with some oily substance like lard or petrolatum. After a few hours, or the next morning, scrub the parts with soap and water, rinse, dry, and apply ichthyol ointment (one part ichthyol to nine parts of petrolatum). In very stubborn cases tincture of iodine may be applied.

Intestinal Worms.—Pheasants frequently harbor considerable numbers of intestinal parasites. It has generally been considered that no harm results to the bird from the presence of worms in the intestinal tract. Nevertheless, it must be recognized that the plugging of a part of the intestine by a ball of these worms or a long knotted rope composed of them must seriously derange the intestinal functions. Serious inflammation of the intestines is often caused by some of these worms. Where it is evident that a flock is thus infested, Epsom salts should be administered at least once a month. Birds that appear markedly affected may be given one teaspoonful of castor-oil containing fifteen drops of turpentine. Since the disease is spread by birds taking up with their food the eggs that were in the droppings of diseased birds, the ground thus contaminated should be thoroughly disinfected.

Tuberculosis.—Tuberculosis is not a subject for treatment but for eradication and prevention. It is fairly common among domesticated pheasants and is often

spoken of as "going light." However, not all cases of "going light" are cases of tuberculosis. When a bird dies of tuberculosis a post-mortem examination will reveal the liver, spleen, and intestines more or less filled with yellowish, cheesy lumps, ranging in size from that of a pin-head to that of a walnut. Under microscopic examination these nodules or tubercles must always show the bacillus of tuberculosis, or the disease should not be called tuberculosis. There are other diseases characterized by lumps in the liver, spleen, and intestines. For this reason the first pheasant that upon post-mortem exhibits a nodular condition of the organs should be wrapped in rags previously soaked in 5-per-cent carbolic acid, and shipped to the laboratory of the Bureau of Animal Industry, Washington, D. C., or to the State Experiment Station, for diagnosis by microscopic examination.

When the disease is discovered, isolate all "going-light" birds; disinfect their droppings; if they persist in their pallor and emaciation, destroy them; disinfect all grounds and buildings; keep lime sprinkled among the droppings. If hens are affected, but are still laying, cleanse the eggs in 95-per-cent alcohol, hatch in a previously disinfected incubator, rear in sterilized brooders, and keep the chicks absolutely apart from all other stock. In this way a new flock completely free from tuberculosis can be developed.

VARIETIES OF PHEASANTS

The commonest of pheasants used either as game-birds or for aviaries is the *Chinese* or *English Ring-*

Necked Pheasant. In reality the two birds are distinct, the "Chinese" or true "Ring-Necked Pheasant" being a natural species, while the "English Ringneck" is a cross between the Chinese Ringneck and the old-fashioned English Pheasant, known also as the "Dark-Necked," or "Hungarian Pheasant."

When Ring-Necked Pheasants are imported from China or Oregon, they are usually fairly pure and have a distinct white ring around the neck with a purple-green neck and head. The body-color is brilliant, reddish-golden brown, beautifully marked and variegated with brown, green, and buff. The tail is long and gracefully tapered and variegated and barred with various shades of brown and copper. These colors refer to the male or cock bird, for the females or hens of all the pheasants are comparatively dull-colored with variegated brown, buff, and grayish colors.

The true *English Pheasant* is much like the Chinese but has no ring about the neck and is darker-colored; but every gradation and variation may be found between the two extremes.

The *Mongolian Pheasant* is larger than the Chinese and has a broad, white ring around the neck. The entire wing-coverts and shoulders are white, while the brown or red of the body is rich orange-red, or nearly scarlet. It is a rare bird in confinement.

The *Green Pheasant* or *Japanese Pheasant* is smaller than the Chinese and, instead of being brown or reddish, this bird is glossy, changeable blue-green below, with a green neck and breast, green and buffy back, and

with wings and tail variegated with browns, buff, and green.

The *Copper Pheasant* is very different from any of the above and is entirely splendid copper-brown, which gleams like burnished metal, the only ornamentation being delicate lacings of white and gray.

All of these birds were introduced into Oregon and other Pacific coast states, as well as in other localities, and as they interbreed and mix freely there are a great many variations and gradations of plumage among them.

The *Reeves's Pheasant* is another magnificent bird, mainly golden-yellow in color, with black and white markings and an enormously long, graceful tail, which sometimes reaches a length of 7 feet. This bird is a very hardy species and is considered a splendid game-bird in Europe, where it is found wild on a good many estates. It is an excellent aviary bird, and makes a handsome and attractive pet.

The *Prince of Wales Pheasant* is not often seen and resembles the Chinese species in a general way but lacks the white ring on the neck and has white wing-coverts.

Elliot's Pheasant is a still more beautiful species, wonderfully shaded, mottled, and variegated with white, browns, and grays. It is a desirable bird and very attractive in aviaries or with other pheasants.

Of all the pheasant family none are more brilliant or beautiful than the *Golden Pheasant* and the *Lady Amherst Pheasant*. Both of these birds are easily

reared, become very tame, and make excellent pets; the golden is one of the most easily tamed of all pheasants and has a natural fondness for being petted and caressed. Its small size, neat form, and magnificent coloring make it the most desirable of the pheasants where pet birds are desired.

The colors of the golden pheasant must be seen to be appreciated. Scarlet, blue, gold, and green are the most prominent tints, while the cape or "tippet" on the neck and the graceful, amber-colored crest add greatly to its beauty. The tail is about $2\frac{1}{2}$ feet in length and is reticulated or mottled with red, brown, and white.

The *Lady Amherst Pheasant* somewhat resembles the last species and is a member of the same genus, but it differs in the arrangement of the colors and markings. The "tippet" of this beautiful bird is 3 inches deep, and composed of white and green bands, while the crest is crimson and the 3-foot tail is banded instead of being mottled as in the last species.

Another splendid species is the *Silver Pheasant*, a large, handsome bird mainly pure white in color, pencilled with delicate lines of black, and with a graceful long tail.

This species becomes so tame that it feeds and runs with the poultry; it is very hardy and is as easy to raise as an ordinary fowl. Unfortunately, it is rather a quarrelsome and overbearing bird and should not be kept with other pheasants or small fowl.

Such are the commoner and more desirable pheas-



PHEASANTS.

1. Lady Amherst Pheasant.

2. Reeve's Pheasant.

3. Copper Pheasant.

4. Prince of Wales Pheasant.

5. Elliott's Pheasant.

ants for amateurs to keep as pets or for ornament; but the *Swinhoe Pheasant* with its deep-blue plumage and odd white back, the gorgeous *Fiery Tragopan*, the magnificent *Peacock Pheasant* with peacock-like eyes on tail and wings as well, are all splendid species to keep; and the big *Manchurian Eared Pheasant* should not be overlooked. This peculiar bird has a queer band of white around the throat which ends in a pair of tufts or "ears," from which the bird derives its name. The plumage is more like fur or hair than feathers, and the tail is hidden beneath great, waving, magnificent, drooping plumes. Although so handsome and unusual in appearance, the greatest value of this bird lies in the fact that it may be allowed to run at large as freely as ordinary fowls, for it is the tamest of all pheasants and never attempts or desires to return to its wild life.

OTHER GAME-BIRDS

The above directions as to feeding, care, and breeding apply equally well to almost any of the wild game-birds or gallinaceous birds when in captivity; but in every case you must use judgment and common sense and change the details of food and care more or less in accordance with the special habits, peculiarities, or natural food of the birds you keep. It would be a waste of time and money to build large runs and pens for one or two small game-birds, while hardy, native species, such as the quail, partridges, etc., do not require such painstaking care, when young, as do pheasants.

Always strive to learn all you can in regard to the habits, food, and peculiarities of any bird you attempt to keep, and find out as much about its natural home and food as you possibly can.

Peafowl

Peafowl are very easy to raise, for they have been long domesticated and are hardy and well able to take care of themselves. Although they are very handsome birds, yet their raucous voices and overbearing natures render them less desirable than many other ornamental birds. Peahens will rear their own young, but as a rule they are stronger and more satisfactory when hatched and cared for by a turkey-hen or a good Brahma, Cochin, or other common fowl.

Guinea-Fowl

These are well-known birds that are natives of Africa. There are a number of species, some of them very beautifully colored. The *Vulturine Guinea-Fowl*, for example, is a magnificent bird and is frequently known as the *Royal Guinea-Fowl*. This species has the head and upper part of throat bare of feathers, and the nape of the neck is covered with a short, velvety down. The lower parts of the neck are covered with long, slender, flowing feathers, with a broad stripe of white in the centre of each feather. This white stripe is bordered by black, dotted with white spots, and edged with blue. The breast and sides are beautiful metallic blue, the middle of abdomen black, the flanks



PHEASANTS.

1. Golden Pheasant.

2. Peacock Pheasant.

3. Eared Pheasant.

pink, spotted with white dots encircled with black, the bill is brown, and the feet and legs brown. This is a bird that is easily reared and is a striking addition to an aviary or to a collection of ornamental wild fowl. The ordinary Guinea-Fowl is descended from the wild bird known as the *Common Guinea-Fowl*, and although domesticated for many generations it has never become really tame and has altered but slightly in appearance from its wild ancestor.

The commonest variety is the *Pearl Guinea*. It has purplish or steel-gray plumage, dotted with white, and has coral-red wattles. The ears and sides of head are white and resemble white kid. Some varieties have a peculiar bony helmet on the top of the head, while others have a crest of feathers. Pure white guineas are not rare and are usually merely albinos of the common variety. Other varieties are found which are white, dotted with black, and by crossing these and the white ones with ordinary birds a great number of color varieties have been produced. Guinea-fowl will cross with ordinary poultry and with turkeys, but these hybrids will not breed.

The calls of the male and female Guinea-Fowl are very distinct, that of the male being a loud shriek, while that of the female resembles the words "buckwheat!" "buckwheat!" repeated shrilly over and over again.

Young guinea chicks are very pretty little creatures, much resembling young quail, and are quite hardy until about two months old, when the regular plumage

begins to appear and the wattles on the head commence to form. At this time the birds are very delicate and difficult to raise.

Guinea-Fowl still retain many of their wild habits, and if allowed perfect freedom they will wander for long distances, will fly as well as wild birds, and will roost out-of-doors in trees. They make their nests in secluded spots, away from houses, and desert them if any one approaches or disturbs the nests or eggs. If guineas are kept in runs or enclosures with high perches and are fed regularly at night, they will become very tame and will soon learn to come at a call.

Guinea-hens make poor setters, and the eggs should be given to a good, motherly hen or to a turkey-hen for hatching and rearing; from fifteen to eighteen eggs should be given her. Eggs hatch in about twenty-eight to thirty days, and the young birds should be kept in covered runs until a week or two of age, after which they may be allowed to run with their foster-mother in good weather.

Young guinea chicks should be fed almost as soon as hatched. They require feeding oftener than ordinary chickens, as their crops are much smaller. Indeed, a fast of several hours may often prove fatal to them. The food may be the same as that of young pheasants, and the same care should be taken to protect them from cold and dampness.

Guinea-fowl do not make very good pets, but they are useful in giving warning of strangers, enemies, hawks, etc., and are profitable when raised in large



ORNAMENTAL QUAIL, OR PARTRIDGE.

1. Red-Legged Partridge.
2. Gambel's Partridge.

3. Massena Partridge.
4. Scaled Partridge.

numbers for the market. In Europe they are much used for the table, but in America they are only beginning to be appreciated. The guinea's eggs are considered better flavored and more desirable than hens' eggs, and as the birds are rather prolific layers the eggs may be used for table purposes and should prove profitable. When allowed freedom the guinea-hens will hide their nests away, and a number of hens will lay in one nest, often filling it with thirty or more eggs. If kept in runs or enclosures and furnished with secluded places for their nests the eggs may be gathered daily, but three to five eggs should always be left in the nest. These may be marked so as to be distinguishable. It is a good plan to use a long-handled spoon in taking the eggs from the nest, for, if much handled, the birds may refuse to lay any more eggs there.

Quail

Many of our native quail are easily reared in captivity and become very tame. The Californian Quail, Gambel's Quail, Messina Quail, and other species are very beautiful, are easily tamed, and soon learn to eat from the hand and to come at a call. The eggs should be hatched by bantam hens, and a large amount of insect food should be fed to the chicks.

Grouse

Many species of grouse, including the European Black Grouse and the big Capercaillie may be raised in confinement, but they seldom or never become really

tame or domesticated. They are mainly of interest for collections of live birds or for use in game preserves or parks.

Guans

The guans, known also as *Chachalacas* or *Mexican Pheasants*, are handsome, pheasant-like birds, found in Mexico and tropical America. They are very easily tamed and do well in captivity but seldom breed well, although they frequently lay eggs. The eggs are beautiful blue-green in color, like the eggs of a catbird or robin. They are tender birds and must be protected and kept warm in cold weather.

Tinamous

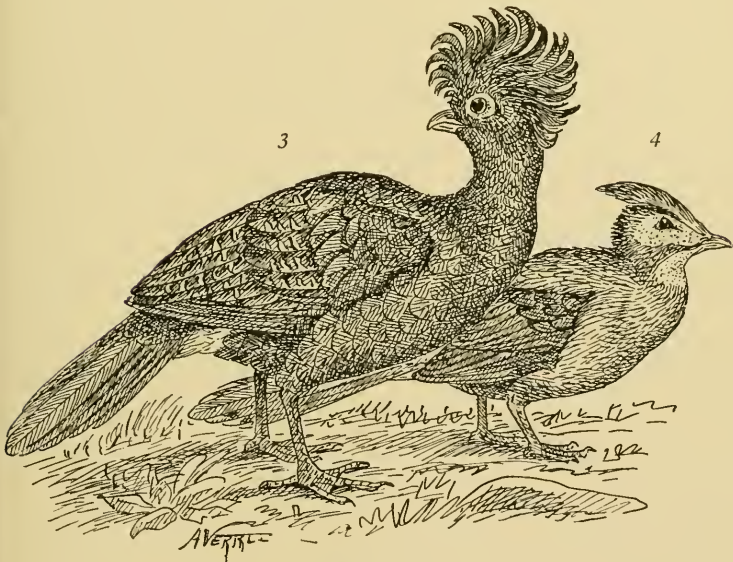
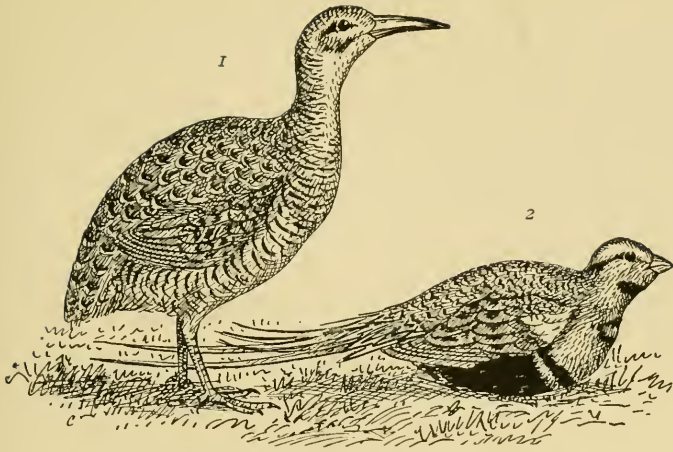
These are delicately and beautifully colored birds much like quails in habit and food. They require practically the same care as pheasants. They are quite hardy, but most varieties require protection in winter.

Sand Grouse

These are very attractive birds with pointed tails and soft, blended colors. They live naturally in barren, sandy places and are easily reared in captivity. Some varieties are quite hardy, while others must be kept in heated apartments in cold weather. Dampness and cold are fatal to these birds.

Curassows

These are large and magnificent birds about the size of a small turkey and mainly glossy, metallic black in



GAME BIRDS.

1. Tinamou.

2. Sand Grouse.

3. Curassow.

4. Chachalaca.

color, often with white bellies and markings of yellow or scarlet on the rump. They have beautiful, gracefully curved crests, which are barred or mottled with white in the female birds.

In their wild state the curassows live mostly in high trees, but they will do well in runs or enclosures in captivity. They become remarkably tame and docile and make very attractive pets. They are all natives of tropical America and must be well protected from frost and cold during our northern winters.

Under favorable conditions they breed in captivity, and in the Southern States they might be bred for market or game purposes.

CHAPTER XVII
WATER-FOWL AND WADING-BIRDS

HABITS AND CARE

AMONG the various water-fowl of America and other countries there are a great many that are exceedingly beautiful and become very tame and make most interesting pets.

Ordinary ducks and geese are all very well to raise for the market, but they have little to recommend them. They are usually ungainly, overfed, clumsy, unpleasant in voice, with little wit and less affection. Many varieties of ducks and geese, however, are very neat and handsome in form, beautiful in plumage, and graceful in their movements. Many of these are quite silent, or have pleasing, whistling notes, and in their habits they exhibit many attractive and interesting traits. Moreover, a large number of these water-fowl are very intelligent and may be taught to come at a call and to feed from the hand.

The wading-birds also include among their number many odd and beautiful species, and as some of these become exceedingly tame and are just as easy to rear and care for as chickens or domestic ducks, they are desirable additions to one's collection of pets. Even those which are too large or too shy to be kept for pets

are very ornamental and striking in appearance and add greatly to the charm of grounds or small parks.

A great many of the wild ducks and geese, as well as gulls and other water-birds, will thrive very well in captivity without any water in which to swim; but all water-birds do better if they have water, and unless you can arrange to furnish the birds with a pool of some sort, it is not advisable to attempt to keep many water and wading birds.

Nearly all the wild ducks and geese, and many other water-birds as well as quite a number of wading-birds, will succeed on a diet of grain, corn, and vegetables; but other species must have animal food, such as meat, fish, frogs, insects, etc.

If you live near the seashore or a large lake or river or where there are large fish markets, you will be able to find plenty of food for this class of birds, but otherwise it is best to confine yourself to such species as will thrive on a vegetable diet. Moreover, most of the birds that require animal food are dirty and rather disagreeable creatures to rear in a limited space and are far less desirable than the vegetable feeders.

Water and wading birds may be kept in cages or in runs or they may have their wings clipped and be permitted to roam about the grounds at will as soon as they become thoroughly tame and accustomed to their surroundings.

Where a small pond or a brook is available it may be wholly or partially enclosed in a fence of wire netting, 6 or 8 feet high. If the birds' wings are clipped this

will prevent their flying out and they will be perfectly content and thoroughly at home. Small sheds or pens should be built on the land near the water, and shrubbery, small trees, and other vegetation should be planted in the enclosure.

If native American birds, or birds that live naturally in a similar climate to ours, are kept exclusively, the pens may be merely open sheds with tight roofs, for birds of this sort will stand our coldest winters. On the other hand, if you keep southern or tropical species, you must provide warm winter quarters in which to keep the birds.

Many of our wild ducks, geese, gulls, and wading-birds will breed readily in confinement if given plenty of room and suitable surroundings and will rear their young year after year. The young birds thus raised are usually very tame and show little disposition to escape.

Many wild birds, especially ducks and geese, will drop into your pond, attracted by the captives, and if undisturbed and fed they will often remain voluntarily and become willing captives. In the spring and fall, when the wild birds migrate north and south, your pets may show an inclination to join their wild relatives, and it is a good plan to keep their wings clipped for this reason. No matter how content and tame the birds are, they may find the temptation to join the migrating flocks too strong to resist, and the only way to be sure that they do not leave you is to clip their wings.

My grandfather had a number of captive Canada Geese which were perfectly tame and thoroughly domesticated, but each fall they would leave the barnyard and join some passing flock on its journey to the south. They would remain away all winter, but in the spring, when the geese winged their way northward, the tame birds would drop into the yard again and would frequently bring their mates or friends with them.

This continued for several years, and gradually the little family of geese was increased until a large flock spent the summer on the farm.

Many species of water-fowl and waders may be kept together, and if a large flying-cage can be provided you may have a very interesting and attractive "happy family."

In planning a flying-cage, try to arrange it so as to include a brook or small pond. This need not be very large—a pond or pool 10 feet square is large enough—and if you have an old fountain on the premises the cage may be constructed around this. Build the cage of coarse-meshed wire netting, and carry it up to at least 25 feet in height. Have it roofed with netting, and if possible have some trees inside of the cage. Live trees are not necessary—old, dead, scraggly trees are as good as any—and if they have hollow limbs or branches, so much the better. By placing trees in the cage you can utilize them as supports for the netting roof, and the birds will love to perch on them and to build their nests among the branches or in the holes.

Plant the ground inside of the cage with rank, rapid-

growing grass and weeds, and a few strong, hardy shrubs. Have a portion of the floor of the cage dug out for a depth of 6 or 8 inches and filled with coarse pebbles or gravel, and place a number of large stones, some fallen trees or logs, and some loose brush in the cage. Be sure that the cage is built where the drainage is good, and have the door large enough for you to enter easily.

In such a cage a number of ornamental ducks, herons, egrets, cranes, a pelican or two, gulls and terns, gallinules, grebes, ibis, and similar birds will thrive and be happy, and many of them will breed and rear their young.

The birds may be fed by throwing the grain, etc., broadcast in the cage, or food dishes may be placed inside. The latter is the best method, for the birds learn to recognize their master in this way, and become much tamer than when the food is thrown into the cage. Fish, frogs, and other live things may be placed in the pool or brook, and the birds will enjoy diving for them and capturing them in their natural manner.

A fine screen of copper or brass netting should be placed at each end of the brook or pool where it leaves and enters the cage, to prevent the escape of fish and young birds.

Where a few ornamental water-fowl or waders are to be kept such an elaborate cage is not necessary. You can rear quite a number of beautiful ducks, cranes, herons, geese, or other birds in open runs with pens much like those described for pheasant raising.

Such are the general directions for the care and housing of this class of birds, but as each species or family require special arrangements and food, more detailed directions will be given in the following paragraphs.

WILD DUCKS

Nearly all wild ducks may be easily kept and successfully bred in captivity. Some of these are excellent for pets and become exceedingly tame, while others never quite overcome their natural fear of man. Some of the species are very handsome, especially in the breeding-season, and few people realize how neat, trim, and beautiful a duck can be until they have observed wild ducks at close range.

All of the wild ducks require about the same care and food as domestic ducks, but care should be taken not to overfeed them. Tame or domestic ducks that are raised solely for the table can be as fat and overfed as desired, but wild ducks, if kept for their beauty or for ornament, should be maintained in a natural condition; a wild duck is never pot-bellied or too fat to walk readily.

The *Mallards* and *Black-Ducks* are so well known and so similar to our domestic ducks that it hardly pays to bother with them, but the dainty *Teals*, the *Pintail*, *Widgeon*, *Shoveller*, *Redheads*, and other species are very attractive and cheap, and may be easily reared on cracked corn and wheat fed twice a day, with broken clams, meat scraps, and chopped vegetables twice a week.

The most beautiful of all ducks are the *Mandarin* and the *Wood-Duck*. The former, a Chinese and Japanese bird, is very dainty; the drake is brilliantly clothed in purple, green, red-brown, and buff, the head is decorated by a long, soft, iridescent green crest, which is raised when the bird whistles its call, and each wing is ornamented by a peculiar upright feather of rich golden-brown that gives a very odd appearance.

It is a hardy, easily reared species and should be the first choice of every one fond of ornamental water-birds.

The American *Wood-Duck*, or *Summer Duck*, is a native of our own country, and the male is fully as beautiful in its plumage as the Oriental Mandarin. The back and head are beautifully colored with golden, metallic green, purple, and blue; the breast is rich chestnut spotted with white; the throat, sides of head, belly, and a stripe over the eyes are snowy white, while the sides are buff, beautifully pencilled with black. A broad white and black bar on the shoulder and numerous white and black bars on the flanks add a finishing touch to the magnificent plumage.

The *Wood-Duck* is very easily tamed, it is well adapted to captivity, and breeds freely if given a hollow tree in which to make its nest. This species and the last do not require water except to drink, and in their wild state live a great deal of the time in trees a long distance from water. They may be fed on corn, wheat, vegetables, fruit, etc., and are very fond of acorns.

Wood-Ducks, although formerly abundant in many



WOOD-DUCK.

parts of the country, are now rare in most places, and every effort should be made to protect and encourage them.

TREE-DUCKS

The Tree-Ducks are natives of warm America, seldom wandering farther north than our most southern States. They are of dull but attractive shades of soft browns, grays, and buffs, and are easily reared in captivity. The neck is long, and the legs also are much longer than is the case with other ducks, so that they look very different from our ordinary species.

In their wild state the Tree-Ducks live in woods and in trees, where they feed upon fruits, berries, and seeds, but they swim and dive readily, and spend a good deal of their time on the water. They nest in hollow trees and have a melodious whistling note.

These birds are easily tamed, they are quite hardy, and may be fed on grain, corn, etc., like domestic poultry. They must be given protection and fairly warm quarters in winter, but do not require ponds or pools of water.

ORNAMENTAL AND WILD GEESE

A great many species of wild geese may be reared successfully in captivity, but all geese require considerable room and water to do well, and they seldom become tame enough to be considered pets. They may be fed on grain, corn, and meat scraps and require little care. If allowed considerable freedom and kept in a large

enclosure most of the species will breed readily. In fact, the Canada Goose is as easy to rear as the common domestic goose, and is widely kept for market purposes.

The most desirable species are the *Canada Goose*, the *Brant*, *Snow Geese*, *Hutchins's Goose*, and *White-Fronted Goose*. These are all hardy northern birds, and do not require protection in winter.

The *Egyptian* or *Nile Goose* is a handsome, rather slender bird, and is far more desirable than any other species where there is a limited amount of space and really tame birds are desired. The colors of this bird are quite unusual for a goose, consisting of various shades of metallic brown, buff, green, and black combined with pure white.

The bird is hardy but should be afforded some protection in cold weather and is easily tamed and shows more intelligence and affection than any other species of its family.

SWANS

These graceful and attractive birds are too well-known to require any description. They are suitable for parks and large estates but require fairly large bodies of water. The *Black Swan*, *Black-Necked Swan*, and the *White Swan* are all domesticated and do well in captivity.

GULLS AND TERNS

These beautiful birds are often seen in parks and zoological gardens, and nearly all the varieties are easy

to keep in captivity; but many of the varieties are very quarrelsome and cannot be safely kept with other birds, and others must be given meat and fish each day if they are to thrive.

Most of the gulls and terns will eat any sort of offal, table scraps, and meat; and some varieties will live perfectly well on a vegetarian diet of bread, vegetables, and grain.

The smaller varieties are the most desirable, and the *Laughing Gull*, the *Franklin's Gull*, and the *Bonaparte's Gull* are all very handsome and elegant, with white and gray bodies and black heads. These varieties do not require water and will eat grain as well as insects, scraps, etc. They also devour birds' eggs and should not be permitted in cages where other birds are breeding. They are all hardy and will stand our northern winters but should be provided with shelters which they can enter if they so desire.

The terns are related to the gulls but are almost helpless on the ground and, while they are very handsome and attractive birds, they cannot be recommended as pets or for rearing in captivity.

HERONS

Hérons and egrets live very well in captivity if they have plenty of space and some water, and they can get along without any water at all save what they require for drinking.

Although some herons will live without live or fresh fish, yet they will all do better on a fish and animal

diet; and as they seldom become tame and cannot be properly classed as pets, they are mainly valuable in parks or large flying-cages or enclosures, where they are very ornamental.

CRANES

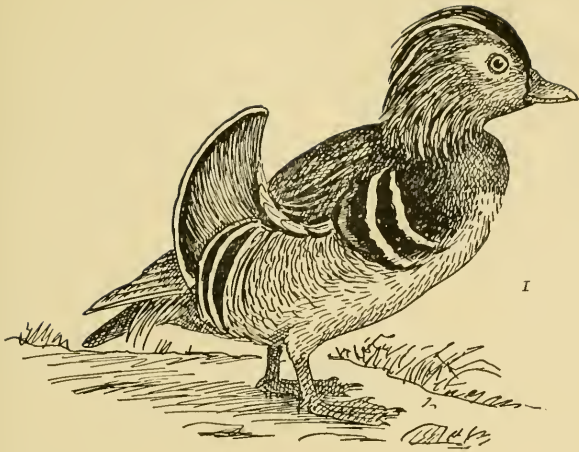
Unlike the herons, with which they are often confused, the cranes are most desirable birds to rear in captivity. Nearly all the cranes are hardy and are easy to feed and care for.

The best variety to keep is the *Demoiselle Crane*, a rather small bird which stands about 2 feet high. This bird is elegantly gowned in a delicate shade of gray and has a long, flowing crest, a tassel of soft feathers on the breast, and a drooping bunch of plumes on the lower back.

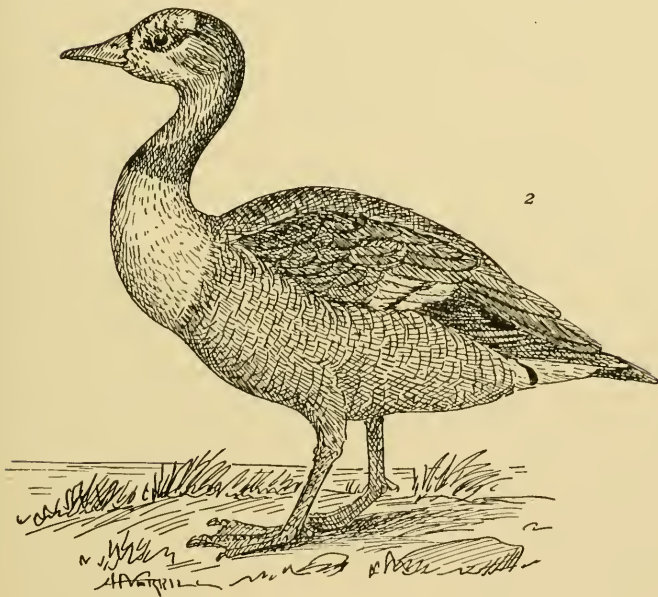
The *Demoiselle* may be fed on the same food as recommended for pheasants, and becomes a perfect pet, following its owner about, eating from the hand, and learning to come at a call. It does not require water and may be kept in a run or enclosure or may be given the freedom of the yard or grounds, where it will prove very useful in devouring grubs, caterpillars, and insects.

STORKS

These well-known birds are easily kept; they are very hardy, do not require water, and will thrive on meat and waste scraps from the table. Sometimes a stork will become very tame and a good pet, but as a rule they can scarcely be placed in the pet class.



1



2

WATER-FOWL.

1. Mandarin Duck.

2. Egyptian Goose.

FLAMINGOES

These grotesque pink birds always attract attention. Although a native of warm climates, the flamingo will stand a great deal of cold weather, and unless the winters are severe a well-protected tight shed or house is all that is necessary for acclimated European birds. It is wisest to give them a fairly warm house during cold weather, however, for they are expensive birds, and you should not run any risk of their dying from exposure.

Flamingoes seldom become really tame, but they are striking and interesting specimens for parks or estates and are easy to keep. They should be kept in runs or enclosures with water and may be fed on soaked rice, chopped meat, fish, and table scraps.

PELICANS

Both the *Brown Pelican* and the *White Pelican* may be reared in captivity, but the European white variety is the one ordinarily seen.

This is a hardy variety and will thrive almost anywhere. It is very easy to keep and will devour meat, fish, table scraps, mice, rats, frogs, or any small creature with equal relish.

Pelicans seldom become tame enough to be classed as pets, but they are interesting in their habits and are good birds to keep in a large flying-cage or enclosure with other water-fowl.

SPOONBILLS

These odd, heron-like birds with their white or rosy plumage and peculiar spoon-shaped bills are often kept in parks, but they are delicate and require water and animal food. They cannot be recommended as pets. The same is true of the *boatbill*, another heron-like bird with a remarkable beak, which is shaped like a round-bottomed boat.

CORMORANTS

Many of the cormorants thrive in confinement, but they require a diet of fish and are very dirty birds. In China and other Oriental countries the natives make tame cormorants catch fish for their owners. Rings are placed around the birds' necks, so they cannot swallow the fish, and the cormorants are then placed in the water. Their natural instinct causes them to dive and catch fish, which they bring to the surface to swallow. The ring around the neck prevents this, and their master takes the finny prey for his own use and rewards the birds with small bits of fish. The birds are fairly tame and are taught to perch on the rails of the fishing-boat or on a rod carried by the fisherman. I have seen pelicans tamed and used in the same manner.

IBIS

The various kinds of ibis are readily domesticated, and they sometimes become very tame, indeed. Al-

though related to the heron, they are more like storks in habits and in respect to their diet and do as well without water and a fish diet as with them.

In a wild state the ibis will eat almost anything in the way of insects, frogs, lizards, fish, and snails, and is very fond of crabs, shrimp, etc.

In confinement the ibis will eat meat scraps, broken clams, shrimp, fish, table scraps, and even softened rice, grain, fruit, and bread.

The *Wood Ibis* is a large and unattractive variety, and is not truly an ibis but a stork. The *White Ibis* is an elegant bird found wild in our Southern States and tropical America. It is mostly pure white in color, with a slight rosy bloom on the breast, and has pure blue-black tips to the wings. The young and immature birds are brown.

They are hardy birds and will stand a good deal of cold weather and are easily tamed and become quite attached to their owners.

The *Glossy Ibis* is another American species, but a nearly related species is found in Europe. These birds have a brilliant, glossy-brown plumage and are very docile and easily tamed.

The most beautiful and attractive of all the ibis family is the magnificent *Scarlet Ibis* of South America. This bird is entirely rich scarlet, with blue-black tips to the wings and looks as if dipped in scarlet dye.

The *Scarlet Ibis* is very rare in collections, but is common in many of the less-settled portions of tropical America. If given warm quarters in winter the *Scarlet*

Ibis may be easily kept in confinement, and it becomes very tame.

After being kept for some time the bird loses the brilliant hues of its plumage and becomes rosy or pinkish or even dirty white. In some places in Europe specialists in wild birds and animals can recolor these birds, as well as flamingoes and spoonbills, by feeding certain kinds of food.

To keep the color bright and the plumage in good condition fresh shrimp, crawfish, and crabs should be fed twice a week.

SHORE-BIRDS

The birds included under this head are the various plovers, snipe, sandpipers, etc. Most of these birds are difficult to keep in confinement unless provided with open ground, growing plants, and natural conditions, and as they are not particularly attractive and do not become very tame they are not suitable for pets.

Many of the plover, however, are very easy to keep and become quite tame. The natives of Haiti and San Domingo domesticate a large plover which is common in San Domingo and is known as the "boukaroo." This bird becomes very tame and is allowed to roam at large about the premises and proves very useful by devouring mice, roaches, and vermin of all kinds.

GALLINULES

If you have a pond or other water a few of the *gallinules*, *mud-hens*, and *coots* will be good birds to keep. Most of these birds are dull-colored, but the *Purple*

Gallinule is a brilliant creature with green, blue, and purple plumage. Most of the gallinules are fairly hardy, but they will not stand the winter without protection. They feed upon all sorts of water creatures, insects, etc., when wild, but in confinement will eat soaked rice, table scraps, and mocking-bird food.

The gallinules are remarkable for their huge, slender feet which enable the birds to walk over soft mud without sinking in. The *mud-hen* or *coot* has feet with odd, rounded webs on each toe, and the bird swims and dives readily.

The oddest of all this class of birds is the *jacana*, a small, handsome species, found in Mexico and tropical America. The jacana is about the size of a robin and is richly colored, with a black head and neck and reddish-brown body and yellow wings. On each shoulder there is a sharp spur, and the forehead is ornamented with a leaf-like, horny growth. The most remarkable feature of this bird is the extreme length of the toes, which seem out of all proportion to the rest of the bird. These long toes enable the jacana to run over the lily-pads and water-plants of its native ponds and lakes without sinking into the water.

When wild, the jacana eats insects and small aquatic creatures, and in captivity it will thrive on insects, chopped meat, small shrimp, and bread, while fresh-water snails and tadpoles are greatly relished.

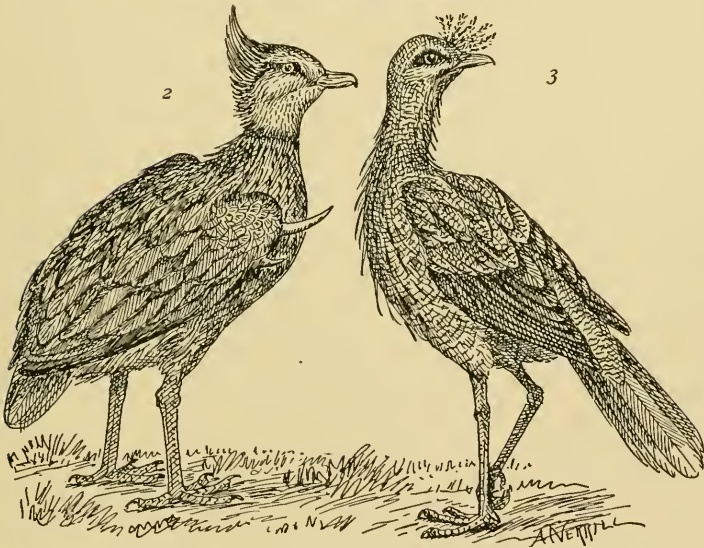
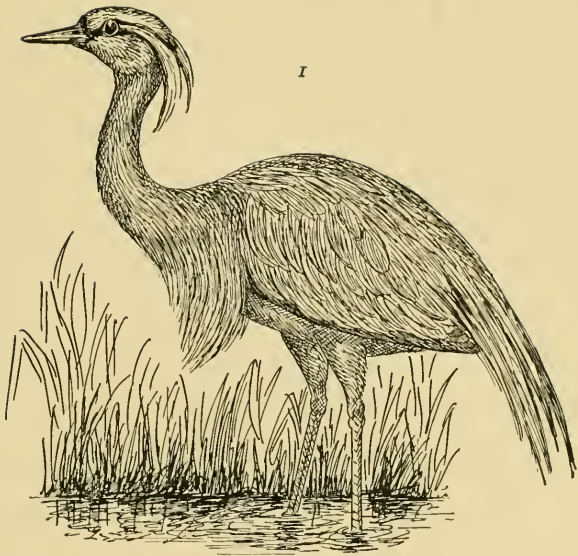
These are interesting birds but are difficult to tame and to care for; they are so curious that they are well worth keeping if you have an opportunity of securing one.

SCREAMERS

These are handsome South American birds, beautifully colored with metallic green and brown, and with delicate reticulations and stripes of white and black. They are quite large, often as large as a small turkey or a large rooster, and have rather long legs like those of a crane but much stouter. The head is usually decorated with a tuft of feathers or an odd, fleshy growth, and the bill is powerful and hooked at the tip. The forward edge of the wing bears two sharp, bony spurs, with which the owner can inflict serious wounds on other birds. In South America the screamers, as well as a similar bird, known as the "*Seriema*," are kept by the natives as guardians of their fowls, and these queer birds take as much care of the poultry intrusted to them as shepherd-dogs with flocks of sheep. Screamers are easily tamed and seem to have a natural instinct to guard other birds. They are brave and splendid fighters and do not hesitate to attack birds or animals much larger than themselves. Seldom, indeed, does a hawk, cat, dog, or fox escape from an encounter with these doughty birds without receiving severe wounds inflicted by their sharp spurs and powerful bills.

Not only does the screamer warn the poultry of hawks and other enemies, but it keeps them from straying, finds them food, and leads them from and to their roosts with wonderful care and intelligence.

The screamer is a sort of bird-puzzle, for while in



WADING BIRDS.

1. Demoiselle Crane.

2. Screamer.

3. Seriama.

many respects it seems to belong among the wading-birds, yet in habits and other characters it appears more like a gallinaceous or scratching bird. For our purposes it really makes very little difference whether we include the screamer among the waders or the game-birds. It is of much greater interest to know that it is easily kept in captivity, is very affectionate and easily tamed, and may be allowed the freedom of the premises without danger of its attempting to escape.

It will find a good portion of its food of its own accord, but in addition it should be fed with fruit, vegetables, grain, and soaked rice, with table scraps and a little meat now and then. In winter the screamer must be kept in a warm building, and if meal-worms, ants' eggs, and insects are given it they will be greatly relished.

If you keep pheasants or other game-birds or even common poultry, and have a tame screamer, you will be greatly entertained by watching the manner in which the little South American takes possession of the flock.

It is a born leader, and like other Latin-American rulers it is bound to be in authority whether its subjects like it or not. Let any rooster challenge the screamer, or question its ability to hold its own, and the valiant creature will administer a beating to the imprudent cock that will teach it never again to interfere with the new dictator.

CHAPTER XVIII

DOVES AND PIGEONS

COMMON PIGEONS

IN many ways pigeons make very desirable pets. In the first place, they may be kept either for pleasure or profit or for both purposes combined, and a well-conducted pigeon farm is a really profitable affair, for squabs invariably command good prices.

As pets pigeons may be kept in a comparatively small space, they are easily cared for and fed, are hardy, and live out-of-doors all winter. They are easily tamed and become very affectionate, and learn to recognize their owner very soon.

Many of the domestic pigeons are very handsome; others are noted for their odd forms, plumage, or habits. Such breeds as Fantails, Capuchins, Pouters, etc., are interesting and attractive, and any boy will find a lot of fun and interest in keeping a few "Homers," or "Carrier-Pigeons."

In raising fancy pigeons care should be taken to keep each breed in a separate loft or they will cross and the young will soon be like ordinary pigeons or mixed breeds of no real value. Many of these fancy doves are poor parents, and a few good, healthy, strong

pairs of common pigeons should be kept for use as foster-parents. By taking the eggs away from these birds and substituting the eggs of the fancy breeds, the young will be stronger and better.

Correctly cared for and housed, pigeons are not either dirty or offensive, but they should have proper accommodations and plenty of room. Domestic pigeons breed readily and increase rapidly, and if you wish to keep your flock within bounds, you will have to dispose of the surplus young or else sell or trade off the old ones and keep the young for your flock. If you keep fancy stock you will have no trouble in disposing of the surplus, while even ordinary pigeons are always salable to marketmen, either when squabs or fully grown.

Pigeons' eggs, although small, are excellent for the table and are frequently in demand for invalids, and most people who keep pigeons for pets will find it easier to dispose of the eggs than to kill or sell the doves after they are hatched and reared. It is a great mistake to crowd pigeons, and you should decide beforehand how many birds you expect to keep and arrange the houses or cotes accordingly; and if you decide to increase the number of your pets the accommodations must be enlarged to correspond. One or two pairs of pigeons may be kept in a very small space, and the method of housing them and the arrangement of the cote will depend largely upon whether the birds are to be allowed to fly at large or are to be kept in confinement.

Usually it is just about as easy to keep half a dozen pairs of birds as one pair, however. For six pairs of birds you should have a loft 5 or 6 feet high by 6 feet square, and unless the birds are to be permitted to fly about as they please, this loft or house should be connected with a large, roomy, flying-cage, 12 by 6 by 10 feet. This may be constructed of scantling covered with wire netting, and if kept in this way the birds will be much tamer than if allowed to roam all about.

If your pets are really fine birds of pure-bred stock they should be kept in this manner, for if allowed their freedom some one will be sure to steal or trap them.

CAGE AND BREEDING LOFT

The flying-cage should have a 4-inch shelf at each end, about 4 feet from the ground, and separated a few inches from the netting. These shelves will serve as perches for the birds, and the pigeons will get plenty of exercise by flying back and forth from one to the other. The floor of the flying-cage should be raised a few inches from the earth and covered with a layer of sand or cement.

Within the cage you should have tins or dishes for water and grain and a large vessel for the birds to bathe in. The bathtub should be 3 or 4 inches deep and 2 feet square, and should be filled with fresh, clean water every morning in warm weather, and in cold weather it should be filled with tepid water and placed in the cage once or twice a week in the warmest part of the day.

The breeding loft is the true home of the doves and may be constructed specially for the purpose in the form of a small building, or it may be fitted up within the loft of a barn or outhouse.

Across the back wall shelves should be placed, each being a foot wide and spaced 14 or 15 inches apart. Place an upright partition in the middle of these shelves so that they are divided into two sets, each 3 feet long. Then nail four boards, 9 to 12 inches wide, over the ends of the shelves, leaving a space open in the middle as shown in the illustration. Leave the space below the lowest shelf open and place the food and water dishes here where they will be protected by the shelves above.

Along the sides of the loft a number of perches with shelves should be arranged as shown in the accompanying cut. The perches consist of round pieces of wood driven into holes or screwed to boards fastened to the walls so they can be easily removed, and below the perches removable shelves are placed. This makes cleaning very easy, for when the shelves and perches are dirty they may be taken down, new ones hung in their place, and the dirty ones washed off with a hose, scrubbed with soap and water, and put away for use when the next set requires cleaning.

The doors to the loft and flying-cage should be large enough to allow you to pass in and out readily, and the entire inside of the loft should be painted or white-washed. If paint is used it should be scrubbed with weak carbolic-acid solution every three or four months;

if whitewash is used it may be given a fresh coat once in three months to keep it properly clean.

The floor may be sprinkled with pitch-pine sawdust an inch deep, but as this is inflammable and dangerous a layer of sand sprinkled with "Sanitas" powder will be better. This will prevent any bad odor and will keep out lice and other vermin. Whether sand or sawdust is used, it should be swept out and replaced with fresh every week. At the same time all droppings should be scraped and brushed from walls, shelves, boxes, etc., and the woodwork should be brushed over with weak carbolic acid or some similar disinfectant, and any bare spots of wood should be whitewashed.

FEEDING

The food should consist principally of small dried peas and grain, such as rice, cracked corn, oats, barley, wheat, and an occasional handful of millet, hemp, rape, and canary seed.

During cold weather feed mostly hard grain, peas, and beans, and during the breeding-season soft grain with boiled potatoes, grubs, worms, a little chopped meat and fat, and lettuce, clover, and grass.

Make a change from one food to another gradual, leaving off one thing and substituting another, a little at a time. Also keep a salt-cake in the loft at all times. Salt-cakes may be bought already prepared, but they are easily made as follows: pound up equal parts of old mortar, sand, loam, and earth, and add to this mixture one half pint of coarse salt. Mix into a stiff

paste with salt water and place in a box with an opening in the top large enough for the birds to get their heads through but too small for them to get into themselves, as otherwise they will tread the mixture into a solid, hard mass. This salt-cake box should be kept always filled and placed where it is protected from rain and the birds' droppings.

NESTS ·

Place earthenware nest-pans on the shelves, and in these sprinkle a little sawdust and "Sanitas" powder, covering this with some hay, fine twigs, and straw. As the first egg is laid about two days before the other, it often hatches first and the young squab is fed and reared at the expense of the second, which frequently becomes weak and sickly and dies in consequence. Remove the first egg, therefore, as soon as laid, substitute a nest-egg, and replace the real egg as soon as the second one is deposited. In this way both the young will hatch at about the same time and will be equally fed and cared for.

Always allow your pigeons to set and hatch their eggs wherever laid, but if deposited on the floor place them in a nest-pan in the same spot.

If you are raising delicate fancy pigeons you will have better success if after the first ten days you give the young to a pair of some common pigeons, substituting them for the young of the latter, which may be sold or dressed for squabs. Be careful to choose foster-parents whose young are of practically the same age as the ones

given them, or your fancy young will be unsuitably cared for and will be sickly or die.

Sometimes you may be compelled to rear squabs by hand, and while it is occasionally difficult to make them eat in this way, yet it may be done by chewing up bread or crackers and feeding from your own mouth. If you do not care to do this—and I confess it is not very pleasant—you may be able to feed them by soaking peas or grain in hot water until thoroughly softened and then pushing the material down their throats with your finger; but, of course, you should not do this until the food has cooled off. To feed in this way, hold the bill of the squab in the left hand, open it gently and squeeze a little of the softened food down the bill with the fingers of your right hand. Birds raised in this way have one great merit—they are very tame and make splendid, affectionate pets.

Always move slowly and quietly when in the loft or cage among the birds and avoid any sudden or violent motions, and your pigeons will soon learn not to fear you and will be tame and confiding.

The greatest enemies of tame pigeons are rats and mice. Keep a sharp lookout for these pests, and if there are any holes through which they can enter stop them up with cement or tin. You can scarcely keep them from entering the flying-cage at night, but if the loft or cote is so arranged that the rodents cannot reach it they will do no harm in the cage beyond devouring the food. Placing the food dishes on smooth iron uprights stuck in the ground will prevent the rats

reaching the food, and a projecting ledge or shelf of tin nailed across the wall of the loft on the outside and below the entrance will prevent the pests from climbing up and entering.

Pigeons are not subject to many diseases if kept clean and given plenty of exercise, but they are sometimes troubled with lice. Frequent whitewashing and liberal use of disinfectants will usually prevent vermin from attacking the birds, but if they do get a foothold they should be destroyed by the use of Persian Insect-Powder rubbed into the feathers of the birds. After this is applied to the pigeons and has remained on them a few hours, wash over all the wooden parts of the cage and loft with carbolic-acid solution and rewhitewash.

If you have a large loft and many pigeons, it is a good plan to fumigate their quarters once a month by burning a sulphur candle inside the place after shutting all doors and openings. Of course, the pigeons must all be outside while this is going on, and after fumigating, the doors and other entrances should be left open for an hour or two before the birds are allowed to re-enter the loft.

WILD DOVES AND PIGEONS

The common domestic pigeon or dove is well known to every one and is justly admired for its gentle ways, soft voice, and handsome appearance; but many other species of the pigeon family are far more beautiful and are just as easy to keep as the common dove.

There are a great number of varieties of pigeon

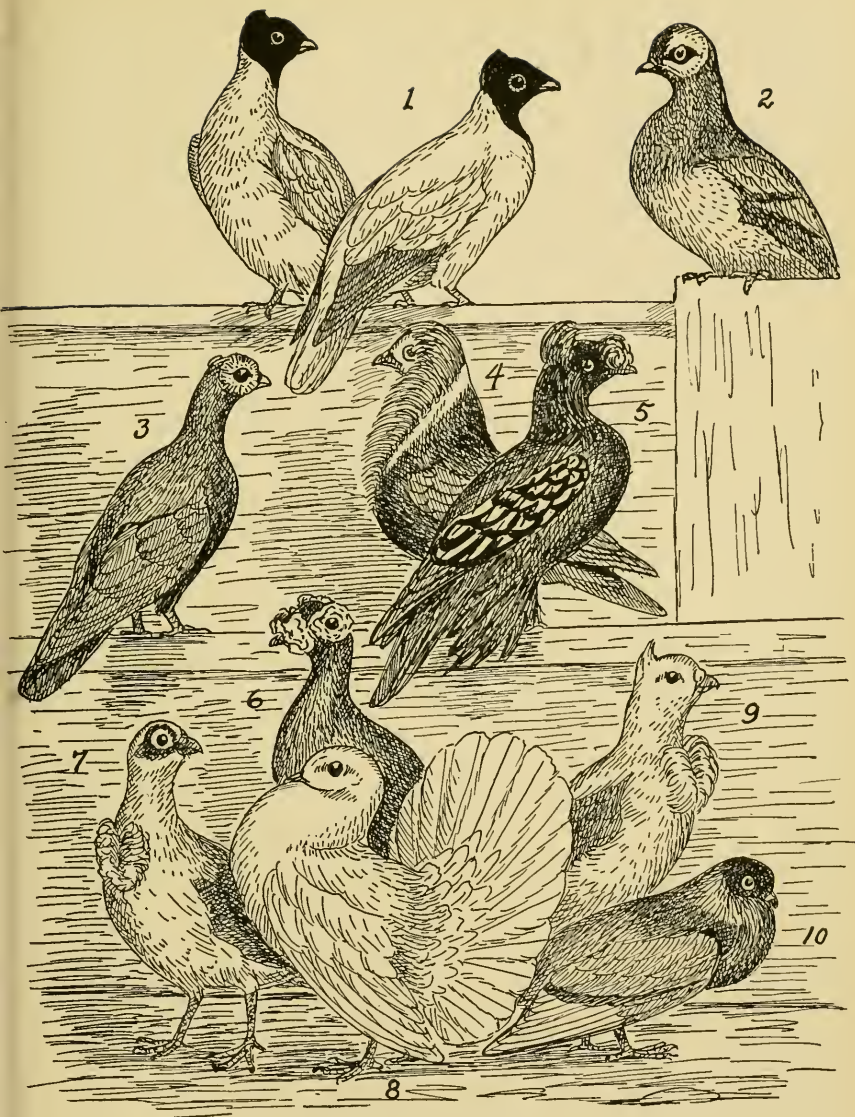
found in various parts of the world, and nearly every one of these may be tamed and kept successfully in captivity. Some of these are wonderfully brilliant in plumage or striking in form, or are so unlike ordinary doves that one would never recognize them as belonging to the same family as ordinary pigeons. Others are so tiny that they are veritable pygmies, while others are true giants of their tribe.

The various American wild pigeons and doves are nearly all protected by law and cannot legally be kept in captivity, but most of them are easily tamed and breed when domesticated.

In Europe the wild "turtle-doves" and "ring-doves" are great favorites, and they are often sold by bird dealers in this country. They are much smaller than the common pigeon, being about the size of our American "mourning-dove." In color they are a soft pinkish fawn-gray, or "dove color," with a ring of white and dark feathers around the neck. They are very affectionate, docile birds, and may be kept in cages or allowed the liberty of the house and grounds like the common dove. They breed in captivity and are easily cared for and fed, the treatment being similar to that for ordinary pigeons.

Ground-Doves

These are the smallest of the pigeon family, being scarcely larger than sparrows, and are very attractive and cunning birds. They are found in the southern United States, the West Indies, and tropical America



BREEDS OF PIGEONS.

- | | | | | |
|--------------|-------------|---------------|-------------|--------------|
| 1. Nuns. | 3. Owl. | 5. Trumpeter. | 7. Barb. | 9. Turbit. |
| 2. Baldhead. | 4. Jacobin. | 6. Carrier. | 8. Fantail. | 10. Tumbler. |

and will not stand northern winters out-of-doors. Ground-doves feed and live upon or near the ground and nest in bushes or low trees. There are several varieties, but they are all more or less alike in color, usually being grayish, reddish, or brownish above and pinkish or barred below.

These birds thrive very well in confinement and live contentedly in cages. They require plenty of gravel and sand and will eat all sorts of seeds, insects, and mocking-bird food as well as bread, meal, and other vegetable food. Ground-doves are very affectionate, and thrive best when kept in pairs. Their note is wonderfully loud for the size of the bird and consists of the usual dove "coo."

Quail-Doves

These are plump, short-tailed, ground-loving doves found in tropical America and the West Indies. They resemble quails more than pigeons in form, and their habits are so much like quails or partridges that the natives, where these birds occur, always call them "partridges" or its equivalent in their own language.

There are several varieties of these birds, but they are all very beautiful in plumage. The Ruddy Quail-Dove is brilliant coppery-brown above, with golden and purple reflections and pink or salmon below. The Key West Quail-Dove is reddish-purple above, with bronze-green head and wine-pink belly and with a white stripe below the eye. The Blue-Headed Quail-Dove is olive above, with a beautiful blue head bordered

with black and separated from the black throat and chest by a white band. The lower parts are rusty brown and the black chest is edged with white. This is a magnificent bird and is found in Cuba and the Florida Keys.

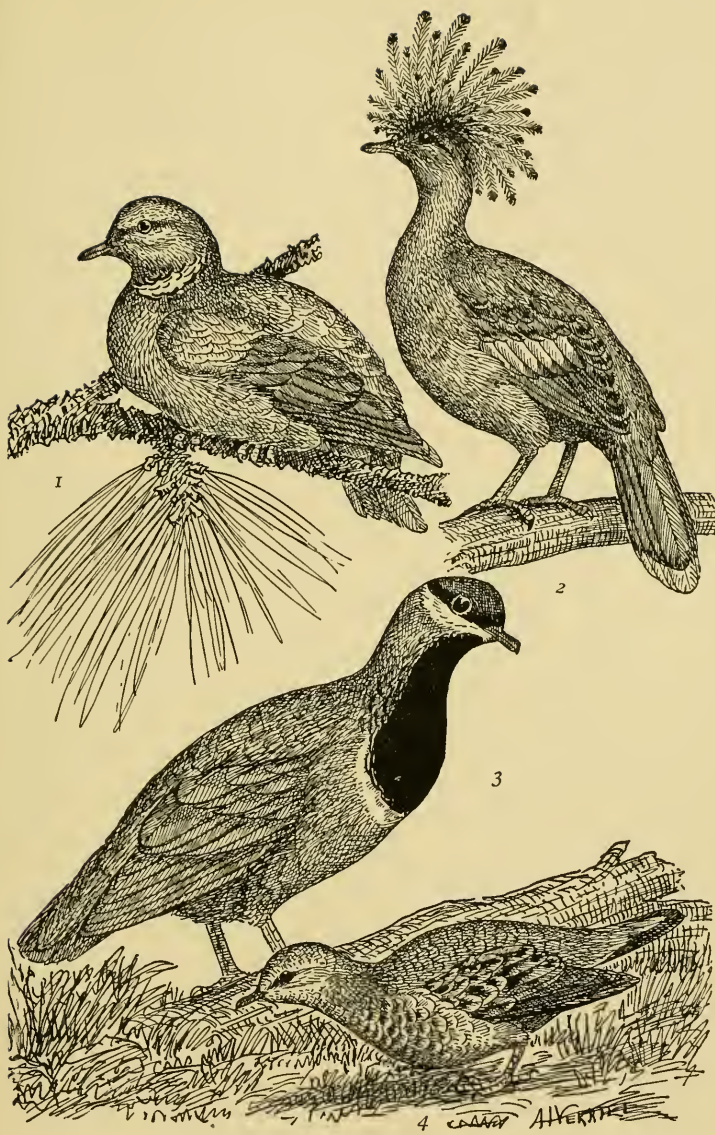
Although seldom seen in captivity in the North, these quail-doves are favorites as pets in the West Indies, and in the countries where they occur they are often seen for sale at a few cents each. Any boy who visits the West Indies and has an opportunity to acquire any of these lovely birds should certainly do so. They are easily kept and become very tame and affectionate and will thrive in a small cage or enclosure.

Quail-doves eat various soft seeds, fruit, insects, and young buds, and will live on grain softened in water, mocking-bird food, bread-crumbs, etc. They dislike strong sunlight and should be kept in a shady situation. Their feathers, like those of most doves, come away very easily, and great care should be used in moving or handling them. If startled so they flutter about they will lose a great many feathers. Quail-doves love sand-baths and delight to snuggle down in a bed of soft earth.

Australian Pigeons

The doves and pigeons of Australia and the neighboring islands are very beautiful, and many of them are of great size.

The numerous "fruit-pigeons" of these islands are often brilliantly colored in green, yellow, blue, etc.,



DOVES AND PIGEONS.

1. Turtle-Dove. 2. Crowned Pigeon. 3. Quail Dove. 4. Ground Dove.

and are frequently brought home in confinement by sailors and sea-captains. The largest of all these East Indian doves is the giant "Victoria," or "crowned-pigeon," of New Guinea. This splendid bird is now kept for sale by many dealers in fancy birds and is so handsome and striking that it is always in demand by bird lovers who have large aviaries or a collection of ornamental birds.

The crowned-pigeon is as large as a common fowl, and is a beautiful slate-blue in color, with black and red-brown markings and large areas of white on wings and tail. The chief beauty of the bird is in the crest, which is formed of long, soft, graceful, upright feathers, unlike the head ornament of any other bird.

These birds are easily domesticated, are fairly hardy, and will thrive on grain, fruit, and similar things.

They are too large to be kept in a cage but may be kept in a wire-netting house or enclosure or in a large aviary with success.

All of the larger species of these unusual pigeons and doves may be kept in a loft and flying-cage like common pigeons, or even in company with the latter during the summer, but in cold weather they should be kept in a warm house or building. The same food that serves for ordinary doves will usually answer equally well for the wild species in captivity, but, as a rule, they all require more green food, fruit, and insects than the domestic pigeons.

If any of these foreign or wild species lay eggs in captivity it will be better to give the eggs to a pair of

common pigeons than trust to the real parents, for these are often so easily disturbed that they will desert or neglect their eggs or young. If they show signs of being troubled when their eggs are taken away, some ordinary pigeon's eggs may be given them. If they hatch these out, well and good, and if they do not it will be no great loss.

PART III—AQUARIUMS AND REPTILES

CHAPTER XIX

FRESH-WATER AQUARIUMS

PREPARATION

A WELL-KEPT and well-stocked aquarium is a very attractive object. Even a small globe with a goldfish or two is an addition to a room, and comparatively stupid goldfish are far better than no pets at all.

An aquarium affords an opportunity for keeping a number of very interesting pets without any muss and with very little trouble; and even the tiny inhabitants of an aquarium will learn to recognize the person who cares for them.

Before planning an aquarium you should decide just how large and how complete you wish to have it. It is very disappointing to find your aquarium far too small to hold all the interesting creatures that you want to keep. An aquarium should never be overcrowded; it is better to have a large aquarium with few, than a small aquarium with too many, forms of animal life.

If you merely wish to keep goldfish or other fish, turtles, tadpoles, or newts, you can use a bowl or even

a glass jar, and if the water is kept clean and the creatures are properly fed they will live and thrive for a long time. Such an affair is not really an aquarium, however, for a true aquarium must contain a number of different forms of animal life and must have enough vegetable life to balance the animals and keep the water fresh and pure. If an aquarium is properly made and the right proportions of plants and animals are kept in it, the water will remain clear and will not require replenishing, except to replace that portion lost by evaporation.

The best form for an aquarium is rectangular and deeper than wide, and the all-glass aquariums are far better than those composed of a frame of iron or metal bottom and uprights and panes of glass.

Aquariums may be constructed at home from wood or metal and glass, but they are never satisfactory, and any person who can afford to own pets or keep an aquarium can afford to purchase one ready-made. They are far from expensive, and a small, ready-made aquarium is far better than a large, home-made affair.

If you have a pond or fountain in the yard you may convert this into an outdoor aquarium, but it will not be as interesting as the glass indoor affair, for you can only observe a very small portion of the water life.

ANIMALS AND PLANTS

There are a certain number of species of aquatic animals which will live peaceably together in an aquarium, but many other species are rude disturbers of the

peace or are cannibalistic creatures and cannot be permitted in the same aquarium with more peaceable creatures. Goldfish, carp, small fish of any sort, very small turtles, medium-sized water insects, and tadpoles will all get on together, and fresh-water snails of various kinds should be added. Newts or salamanders are also very interesting additions and agree well with most other inhabitants. Avoid frogs unless they are very small; even a medium-sized frog will devour other creatures of large size. Large turtles should also be kept in a separate aquarium, and carnivorous fishes, such as pickerel, pike, and eels, should not be kept with other forms of life.

Many of our native fish are very handsome and interesting. The pretty *sticklebacks* build neat nests of aquatic grass and weeds within which they rest and rear their young, while the beautiful *sunfish* known also as *roach* and *pumpkinseeds* build nests of pebbles on the bottom of ponds and lakes. Your aquarium should always have the bottom covered with an inch or so of washed bird gravel, for many aquatic creatures require sand, while others burrow in it.

The various kinds of *dace* are very attractive fish, but for all-around beauty and satisfaction you cannot find anything better than goldfish. The ordinary, old-fashioned red or silver varieties are pretty and graceful, but some of the fancy breeds are more interesting and attractive. Some of these have long, trailing, veil-like tails; others have double or treble tails; others have elongated fins; while still others have great, goggle eyes

and curious, stub noses. In Japan goldfish have been bred for odd forms and striking peculiarities for centuries, and there are over one hundred named varieties known.

A few tadpoles are always interesting, and whether these are the young of frogs or of salamanders you may watch them develop into the adults and find a great deal of interest while doing so. If the tadpoles are those of frogs the hind legs will sprout first, whereas if they are the young of salamanders the front feet will first appear.

Many water insects are suitable for the aquarium, and the funny *water boatmen* that skim about on the surface of pools and ponds should find a place in every home aquarium. The shining, black *water-beetles* are also good, and it is great fun to watch these fellows dive to the bottom of the water with their air supply in the form of glistening, silvery bubbles. The odd *caddice-fly* larvæ are also droll and interesting creatures. These are caterpillar-like larvæ that make odd little homes of tiny pebbles, sticks, or shells and live on the bottoms of brooks and ponds. They retreat within their little houses when disturbed, and crawl around on the bottom with only their head and front legs protruding from their cells when feeding. The adults are pretty moth-like flies. Young dragon-flies, May-flies, and, in fact, any small or medium-sized water insect, may be kept in the aquarium, but a netting or gauze cover should be placed over it or the insects may take wing and fly away at night.

For plants you may use watercress, duckweed, and, in fact, any sort of water-plant that you find growing in ponds, lakes, or brooks, with the exception of the slimy, soft growth, commonly called "*frog-spittle*," which should always be avoided.

If you have a fairly large aquarium you may add a great deal to its beauty and to the health and happiness of its inmates by placing some growing potted water-plants in it. Pickerel-weed, arrowhead, sweet-flag, and pond-lilies may be planted in pots filled with peat and sand and lowered into the aquarium so that the leaves and flowers are above the surface. Stones should then be piled around the pots on the bottom of the aquarium so as to hold the pots firmly in position and also to serve as a hiding-place for various forms of animal life.

Always have your aquarium filled with water and the plants in position before collecting the animals and insects for it.

Never place the grotesque, ugly, lava castles sold by dealers in an aquarium; they are incongruous, ridiculous things and are neither artistic, ornamental, nor useful. A few rough stones are far better and more satisfactory. When the aquarium is all prepared and the plants in place you may start to hunt up the animals to inhabit it.

COLLECTING THE SPECIMENS

The goldfish may, of course, be purchased of the nearest dealer, and small turtles, newts, and a few other

creatures may at times be obtained from the same source. The majority of your aquatic creatures must, however, be sought in their native haunts—in brooks, ponds, and lakes; and more than half the fun in having an aquarium consists in going out in the country and catching specimens to live in it.

The best place in which to collect is an old mill-pond or a small lake. Before starting out, however, you must have certain tools and implements for the work. These consist of a dip-net, a scoop, and several wide-mouthed glass jars which may be carried in a pail or basket.

The dip-net should be about 10 inches in diameter, and 15 inches deep, and may be constructed from an old fish-net sewed onto a stout metal ring on a wooden handle at least 6 feet in length. The scoop is a most important and essential implement. It consists of an old saucepan with the bottom punched full of holes, one side flattened out as shown in the cut, and a long wooden handle fastened firmly to it.

The dip-net is useful in capturing fish, turtles, frogs, and other lively creatures; but with the scoop you can dig and scrape up the sand and mud at the bottom of the pond, and in this way you will obtain a great many things which would otherwise escape you.

Snails, insects, crustaceans, small fish, tadpoles, frogs, and turtles may all be caught in the scoop, and it is by far the most useful device you can find for pond collecting.

A small iron rake with a long handle is also very use-



FANCY GOLDFISH.

ful. With this you can rake aquatic weeds onto the shore, and by looking in this material you will find many live creatures. The rake will also enable you to get fresh-water clams or mussels.

As soon as your animals are caught, place them in jars of fresh, clean water, and keep them covered or protected from direct sunshine. Water-plants may also be placed in the jars, and if a few plants are put in each jar they will prevent the captives from being shaken about and frightened or injured.

The best season for collecting is early in the spring. At this time a great many aquatic creatures are breeding and are far easier to catch than they will be later in the summer, while many other species are sluggish and burrow in the mud until warm weather sets in.

You will be mightily surprised at the great variety of animal life that you will find in a small mill-pond and you will have no difficulty in collecting enough specimens to fill half a dozen aquariums. If you are interested in raising this class of animals I advise you to have several aquariums and to keep certain forms of animal life in each. One may contain turtles and frogs with snails and plants; another herbivorous fish with newts or salamanders, tadpoles, water insects, snails, and plants; and a third may be devoted to carnivorous fish, such as bass, pickerel, eels, etc., with snails and plants.

Some people would not consider these aquatic creatures worthy of the name of pets, but they make a great mistake. Many of our turtles, fishes, newts, and

even frogs are capable of being tamed and will feed from the hand or will learn to recognize people at sight. I have known country boys who have tamed wild fish in ponds and lakes merely by feeding them regularly, so that the trout, bass, perch, etc., would swim to their feeding spot when the boys approached and would take food from their fingers and even allow the youngsters to stroke them gently. I have repeatedly kept water-salamanders that were so tame as to crawl up on one's finger if it was held out to them and, moreover, these newts would recognize a person at some distance and would show every sign of pleasure at one's approach.

Turtles, although possessing but little intelligence, will learn to recognize their master and will allow him to scratch or stroke their heads and will take food from his hand although they may be thrown into a perfect frenzy of fear at the approach of any one else. Many frogs will learn to eat from the hand and will be very tame in the presence of their owners, and I have even known water insects to become so thoroughly accustomed to human beings as to feed from one's fingers. In fact, about the only aquatic animal that cannot be considered as a pet is the snail. I have never yet seen a trained snail or a tame fresh-water clam.

CARE AND FEEDING

A great many water animals and plants will thrive in very dirty, foul water, but a dirty aquarium is an eyesore and a disgrace. Keep your aquarium clear as

crystal, have the water fresh and pure at all times, and never feed more food than your pets will eat. Where you have running water in the house, either from the city water-supply or from a tank or well, you may easily arrange your aquarium so that the water may be changed without disturbing the inmates. This is by far the best method, for even if your aquarium is arranged with plant and animal life so balanced that the water is kept fresh, yet more or less sediment will accumulate and the water will become foggy or semi-opaque unless renewed with fresh water occasionally.

To arrange an aquarium so it may be emptied and filled automatically you should equip it with an overflow pipe opening into it at the height at which you wish to maintain the water. This should be covered with fine wire or cloth gauze, and to replenish the water all you need to do is to insert a rubber tube from the nearest faucet down to within an inch or two of the bottom of the aquarium and turn on the water so it flows gently. The fresh water coming in at the bottom will force the old water out at the top, and if the water is allowed to run for some time the aquarium will be completely filled with fresh, clean water.

When the aquarium has a metal or wooden bottom the overflow pipe is easily arranged; but if it is an all-glass aquarium you must arrange a siphon to draw the water off. To do this bend a piece of glass or metal tube—the glass is the better, as you can see the water through it—and bend it around at an angle. If you

use a metal tube, fill it with damp sand and plug the ends before bending; if a glass tube, heat it at the point where the bend is to be made in the flame of a Bunsen burner or gas-stove until it is bright red; it will then bend easily.

After the bent tube is prepared fill it with water, hold the two ends closed with your fingers, and without allowing the water to escape place the tube over one edge of the aquarium, with one end of the tube in the water and the other over a tub or other receptacle. Then remove your fingers from the ends of the tube, and if you have accomplished the matter properly a steady stream of water will flow from the aquarium through the siphon. If water fails to flow you may try over again, but it is quicker and easier to suck on the end of the siphon until the water is drawn up into the tube. If care is used there is no necessity of getting any water into your mouth, and if the tube is of glass you can always avoid this by watching the water as you suck and taking your mouth away as soon as the water begins to rise over the edge of the aquarium in the tube. If a hose or tube is slipped over the outer end of the siphon the old water may be led directly into a sink or outside of the house. When using a siphon be sure and place fine gauze over the inner end or some of your animals may be drawn up through it.

As soon as the siphon commences to flow you may turn on the supply of fresh water, leading it to the bottom of the aquarium as already described.

If, while changing the water in this way, you scrub

the glass inside with a long-handled brush, the vegetable growth on the glass may be easily removed and the dirt will be carried off in the overflow. This is a rather important matter, for vegetable growths on the glass give the aquarium a neglected, dirty appearance. Fresh-water snails will eat this growth, but it will require a great many snails to keep it under control and, moreover, the snails themselves leave tracks on the glass.

Most water contains various chemical and mineral compounds in solution and, after standing awhile in an aquarium, these are deposited on the glass in the form of brownish, yellowish, or whitish films that must be scrubbed off as directed.

It is a mistake to remove all the inmates of an aquarium and scrub out the glass and then replace them. After an aquarium is once established, the animals and plants should be left undisturbed as much as possible. Emptying the contents and scrubbing the glass is a method which may be followed with goldfish globes containing a few live creatures, but it is not a suitable method to follow in the case of a real aquarium.

Never use soap, washing-powder, or other compounds in an aquarium; they are all injurious or fatal to the aquatic life.

Aside from renewing the water from time to time and scrubbing off any mineral or vegetable deposits on the glass, aquariums require very little care. If any animal appears to be sick or dies, it should be removed at once by means of a long-handled net, and any food

that remains after the inmates have been fed should also be removed. Decaying animal or vegetable matter soon renders the water foul, and it smells unpleasantly besides.

The inmates of an aquarium should be fed regularly and at stated times, and the proper food should be given according to the various forms of animal life. The chances are that some of your aquarium pets will be carnivorous and others herbivorous, and you will be compelled to feed both animal and vegetable substances to satisfy them all.

Ordinary goldfish food is very good for many fish; for turtles, for newts or salamanders, and for many other forms of aquatic life; but some species will not touch this, and other kinds of vegetable food must be fed.

Bread-crumbs, grated carrot, bits of lettuce leaves, finely cut or grated apple, and soaked rice may be tried, and if you see any creature eat any of the substances you put in the aquarium, make a note of it and feed it regularly; you can always trust an aquatic animal to know what is best adapted to its digestive apparatus.

For the carnivorous animals—fish and insects—you can feed finely chopped lean beef or liver, earthworms cut into one-inch lengths, flies, crickets, other insects, and hard-boiled eggs. Some aquatic creatures will eat one thing and some another, and some will decline all of those mentioned and must be tempted with bits of raw fish or fresh-water clams cut into small pieces.

Aim to determine just what your pets do and do not eat, and in a short time you will be able to furnish a bill of fare that will be suited to all the denizens of the aquarium.

CHAPTER XX

SALT-WATER AQUARIUMS

PREPARATION

IF you live near the sea or where salt water is easily obtained, you will find a salt-water aquarium even more fascinating than a fresh-water one. The variety of salt-water animals is very great, and a large proportion of them are extremely interesting in their lives and habits. Nearly all of the common salt-water creatures thrive well in an aquarium and are easily cared for and fed.

If you live close to the salt water, you can replenish the water in your aquarium frequently, but if you are at some distance from the sea the salt-water aquarium may be arranged in such a way that it will not require attention for some time.

As the water evaporates, you should add *fresh* water, for if salt water is added it will soon become too salt and the animals will die. An important matter in maintaining any aquarium in good condition is "aeration" or, in other words, mixing the water with air. This may be accomplished by pouring water from one receptacle to another or by agitating it or splashing it about, or air may be forced through the water by means of a submerged tube connected to an air-pump.

An ordinary bicycle or automobile-tire pump is excellent for this purpose, and if a tube is led from such a pump and so placed that it rests on the bottom of the aquarium, and if air is then pumped through it for a few minutes each day, the water will be kept in good condition for a long time.

There are marine water-plants in abundance and these should always be kept in the aquarium to balance the animal life, just as fresh-water plants are kept in the fresh-water aquarium.

In selecting a salt-water aquarium, you must use either an all-glass affair or one in which the metal parts are protected from corrosion. Iron will soon rust away and go to pieces when exposed to the action of salt water, and if this metal is used in the aquarium it must be enamelled with several coats of water-proof paint. Even then iron is not very satisfactory, and the aquariums constructed entirely of glass are far better.

Cover the bottom of the aquarium with an inch or two of seashore sand, with a few empty shells of various sizes, and place a number of rounded, water-worn pebbles or rocks in it. Then fill the aquarium with clear salt water, and place a good number of handsome seaweeds and marine plants in it. Avoid all soft, sloppy, or slimy weeds, and if possible use weeds that are already attached to small pebbles, old shells, etc. Some of the marine plants are very beautifully colored and elegant in form. The common "Irish moss" is very attractive and gleams with metallic reflections

when under water. Other weeds are red, brown, black, green, or yellow, and the common *rockweed*, with its bladder-like leaves, should not be overlooked.

The plants and water should be ready before placing animals in the aquarium, but the chances are that you will find that you have unwittingly introduced quite a family of live things with the plants and stones. Many of these are interesting and curious, and some will serve as food for other creatures.

COLLECTING THE SPECIMENS

You will find collecting specimens of marine animals a most absorbing occupation. Few people realize the abundance and variety of marine life that exists everywhere along our shores. In the sand and mud, among weeds, under stones, and clinging to piles, driftwood, and other objects are hundreds of odd and interesting creatures, many of which are absolutely unknown to the majority of people.

For marine collecting put on your oldest clothes and a pair of stout rubber boots or old shoes that cannot be injured by salt water. Have a good assortment of bottles, jars, and a pail, and for tools have a dip-net, a trowel, a pair of forceps, and a hammer. These are all the really essential implements, but a small spade and a hoe will be found useful as well as a short iron bar.

Start on the collecting trip as the tide begins to fall, and, if possible, select a day when the tide will be very low.

There are two kinds of marine collecting. One consists in collecting the things that live between high and low water marks; the other in hunting for species that live below low-water mark. The first is the easiest, but a great many of the most interesting specimens must be collected below low-water mark by means of a boat and dredges or trawls.

Armed with the instruments mentioned and clad in your old clothes, you may commence to collect between tides, and later on may secure the deeper-water species.

As the tide falls, look carefully along the beach or rocks, and if the shore is sandy or muddy dig into it here and there and carefully examine the material you dig up. Many marine animals live buried in sand or mud and only come forth when covered with water. Some of these betray their hiding-places by little mounds of sand, holes, or tiny tubes sticking above the surface, while others may be located by tiny spurts of water issuing from the beach as you walk along.

The majority of these animals are very lively and retreat to the depths of their burrows at the least indication of danger, and you must catch them quickly by one stroke of the trowel or spade.

In this way you can obtain *razor-clams*, *sea-cucumbers*, numerous crustaceans, and a great variety of beautifully colored marine worms.

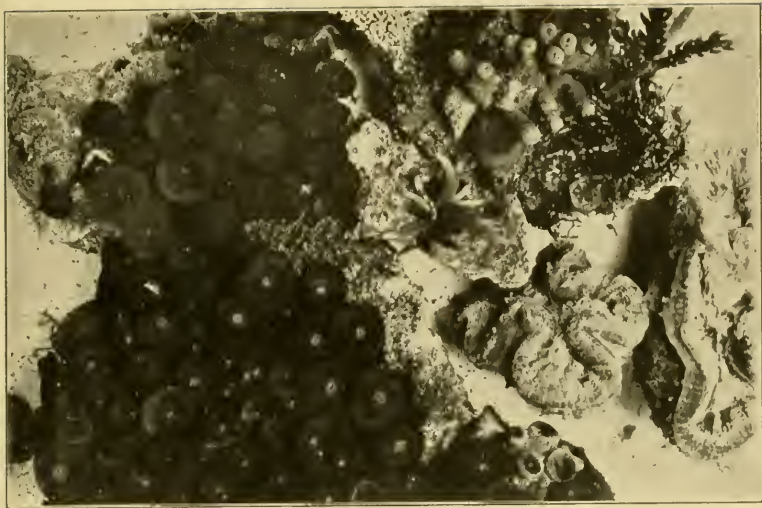
A great many of the underground inhabitants are slow or sluggish and may be readily dug out with an old hoe or rake. Among these are numerous pretty shells, *sand-dollars*, starfishes, and small crabs. The

best way to obtain a good assortment of these things is to dig up the moist sand and mud and sift it through a wire sieve in the water. A mass of apparently clear sand treated in this manner will reveal a great variety of marine worms, shells, crustaceans, and other forms of life, all of which will do nicely in the aquarium.

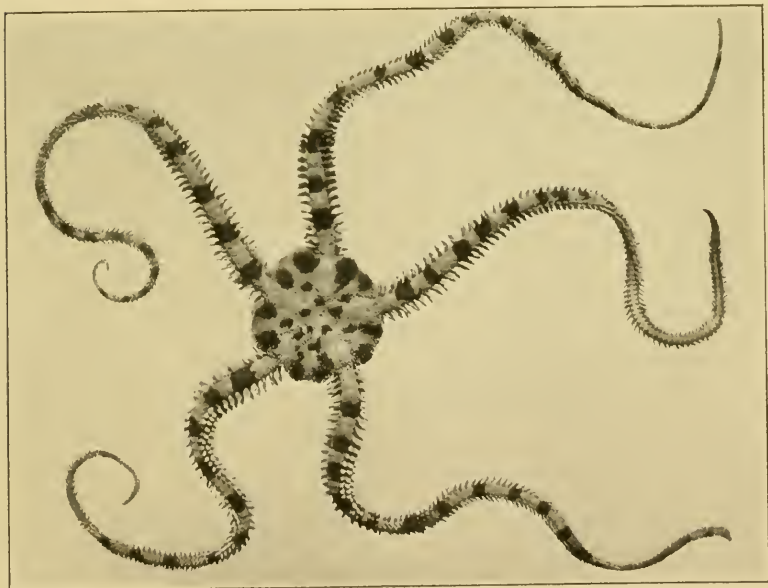
On rocky shores you will find an even larger store of marine life. Under the loose stones, in crevices of the rocks, and in little pools of water left by the receding tide there is a wonderful world of bright-colored, peculiarly formed, or interesting creatures. Here you will find the handsome *starfishes* crawling slowly about in shady spots, or clinging to the under-side of stones; *hermit-crabs* will be seen scuttling about carrying their shell houses on their backs; rock-crabs and other crabs will be found swarming under loose stones or among the rockweed, and various delicately colored snails will be found everywhere.

In the pools you will probably find groups of flower-like *sea-anemones* and possibly fragile "*serpent-starfish*."

All such creatures should be carefully transferred to jars and bottles filled with clear water, and a cloth or piece of carpet should be thrown over them to protect the contents from the hot sun. Do not collect too much; try to get as large a variety as you can with comparatively few individuals of each kind, and when placing them in the jars be sure and keep the different groups separated. Place all soft, delicate things such as sea-anemones in one jar, crabs and crustaceans in



CORALS AND SEA-ANEMONES.



SERPENT STARFISH.

another, marine worms in another, and snails in still another jar.

When you have collected as many things as you require, carry them home and empty the contents of the jars into large, white, porcelain dishes—old wash-bowls are excellent—with plenty of clean salt water. From the bowls you may select such things as you wish, discarding all injured, dead, or sickly specimens and dirt.

Lift the creatures gently by forceps and drop them into the aquarium, and if it has been prepared properly beforehand each of the new arrivals will soon find quarters adapted to its needs and will seek here and there until it feels perfectly at home.

It is very interesting and instructive to watch the various creatures as they are placed in their new home. The snails, after remaining quiet a few moments, will start off slowly, crawling about and feeding as unconcernedly as though still in their natural haunts. The crabs and crustaceans will scuttle here and there, exploring every nook and corner, trying first one place and then another until a satisfactory spot is discovered into which they will slide and settle down perfectly at home. The worms will move slowly about and when they are satisfied will spread out their magnificent tentacles or will burrow into the sand at the bottom and keep themselves well out of sight most of the time.

The sea-anemones will soon overcome their uneasiness and bloom like some new and beautiful flowers; the starfishes will crawl slowly here and there, never

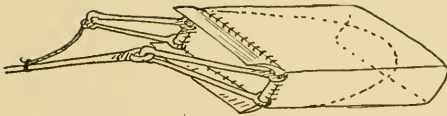
remaining long in one spot but continually seeking for food.

Having introduced the animals you have captured along the shore, you may turn your attention to forms of life found in deeper water. Many of these may be obtained from fishermen by visiting their nets and placing the freshly captured fish, etc., in pails of clean water, while many other interesting things can be procured from lobstermen, who find quantities of crabs, fish, shells, etc., in their pots.

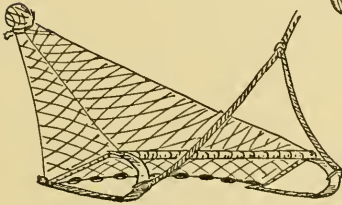
The best method, however, is to capture the creatures yourself, and you will find this the most fascinating and attractive work connected with salt-water aquariums.

When dredging or trawling from a boat in deep water you are working on ground never seen by man, and with every haul you will find some new and strange creature of whose existence you were entirely ignorant. In collecting deep-water animals you will require a boat, a trawl, a dredge, tangles, and the jars, forceps, pail, sieve, etc., that you used in shore collecting.

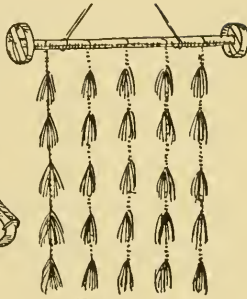
The dredge consists of an iron frame of metal covered with a coarse, strong net; and outside of the net an open bag of canvas should be placed to protect the net from injury. Any blacksmith can make the frame for the dredge, which for your use should be about 15 to 18 inches long, and 6 to 10 inches wide. Fasten the tow-rope to the dredge as shown in the cut, and in this way the dredge will be released automatically by the breaking of the small line if it gets caught on a rough



Dredge



Trawl



Tangles

IMPLEMENTS FOR COLLECTING AQUATIC LIFE.



RAZOR CLAM.

ledge or other object. It is a good plan to have the dredge net open at the end and tied together with a cord, as this saves lots of time and trouble in emptying it.

A short distance from the dredge a weight should be attached to the draw rope to keep the strain from lifting the dredge from the bottom.

The trawl is an iron frame, a wooden or iron beam, and a net with one edge weighted with lead. The frame proper may be constructed of light, flat iron with a length of iron pipe for the beam. The cut shows very plainly how it is made and how the drag-rope is attached to it.

The tangles are very useful and are so simple that any boy can make them. They consist merely of bunches of ravelled rope or bundles of twine fastened to chains so they may be dragged over the bottom; the chains are fastened to a wooden or iron beam or bar, with hoops or wheels at either end so that the ends of the bar will not catch on rocks or other objects.

The dredge, trawl, and tangles must be drawn over the bottom from a boat. If the water is not too deep or the dredge or trawl too large, you can use a row-boat, but a sailboat is better, and a small power-boat is the best of all. Never attempt to drag these things rapidly—three or four miles an hour is fast enough—and if you use a sailboat, reef the sail and keep the dredge or trawl rope over the windward after rail; otherwise if it catches on a rock the boat may be upset,

but if kept as directed the boat may be quickly brought into the wind if anything happens.

The dredge is for use on muddy or sandy bottoms, the trawl on bottoms of any kind, and the tangles are preferable on rough or rocky bottoms.

With these implements you will be able to obtain many fish, lots of starfish, sponges, crustaceans, shells, ascidiaceans, sea-anemones, naked mollusks, squids, and, in fact, nearly every form of marine life that occurs on your particular part of the coast.

In taking the various specimens from the trawl or dredge, use care not to injure them and transfer them to jars or pails of clean water just as quickly as you can. A few moments' exposure to the air will kill or injure many of the deep-water specimens.

CARE AND FEEDING

First of all, keep your aquarium clean. A salt-water aquarium may be kept as clean and neat as a fresh-water one, and it is in many ways easier to care for.

Nearly all the salt-water animals are carnivorous, and sick or injured creatures are quickly devoured by their companions. The snails will do much toward keeping the glass clean, but it should be scrubbed from time to time, as already directed, and the water should be aerated daily and replenished at least once every two weeks. If you can possibly obtain clean salt water each day you will have far better success, but if the plant and animal life is properly proportioned the

water will remain good for a week or two unless it is overcrowded.

Do not overstock the aquarium. Remember that the ocean is very large, and while the animals in their native state appear crowded and very numerous in a small space, yet they are surrounded by countless gallons of water, and that in proportion to the ocean itself their numbers are insignificant.

It is a very good plan to have several aquariums and to confine certain forms of life to each. Fish, with a few snails, crabs, and plants may be kept in one, crustaceans in another, and sea-anemones, sea-urchins, starfish, and a few others in a third.

Some forms of marine animals cannot be kept in the same aquarium with others. Large crabs or lobsters will attack and destroy fish, shells, worms, and other forms of life, and will fight among themselves.

Many fish will devour worms, shells, crustaceans, and other creatures, while starfish are inveterate destroyers of all sorts of shell-fish.

Some practice and experience will be necessary in order to determine what species get along well together; but even if a few specimens are destroyed at first it will be no great loss, for others can easily be obtained to take their place.

Practically all of your marine specimens will thrive on the same sort of food, and this simplifies matters greatly. Chopped clams is a splendid food for salt-water animals, and chopped fish, chopped shrimp or crawfish, broken snails, finely chopped raw meat, and

similar substances are all good. "Watching the animals feed" is always an attraction at a menagerie or zoological garden, but until you have watched your marine animals feed you will not realize what an interesting process it is.

The only drawback to the salt-water aquarium is that its inmates never become tame or sociable. A few of the fish and some of the crabs may learn that your approach is associated with a good meal, but the majority of marine creatures have their brains too fully occupied in keeping out of reach of their companions to think of anything else. The life of marine animals is a constant struggle for existence and food; but although we cannot consider these creatures as pets, yet we shall find them far more instructive and interesting than many real pets possessing a great deal more intelligence.

SPECIMENS OF PECULIAR INTEREST

Although all marine animals have interesting habits and are well worthy of study, yet certain forms are particularly fascinating. A great many marine animals form very remarkable partnerships with other creatures belonging to very different families. Sometimes these chums associate for the purpose of mutual protection, and sometimes because they can obtain a better food supply in this way.

Many spider-crabs regularly transplant marine plants, sponges, and other growths from their natural homes to their own backs. The spider-crab looks after these



MARINE SPECIMENS FOR THE SALT-WATER AQUARIUM.

1. Sea-Cucumber.

2. Hermit-Crab.

3. Sea-Urchin.

4. Hermit-Crab and Sea-Anemone.

things with a great deal of care, and when he changes his shell he transplants the growths to his new covering. In this case the miniature forest of marine things on the crab's back serves to protect him from his enemies. Hermit-crabs—which are always droll and interesting creatures—often cultivate sea-anemones on their shell house. Indeed, some species of hermits cannot exist without these companions, while certain sea-anemones must be placed on a crab's house in order to thrive.

The bits of food dropped by the crab undoubtedly furnish most of the diet for the anemones, while the latter are poisonous to fishes and thus protect the hermit from his natural foes.

If you live in the South or visit tropical waters for a few weeks in the winter, you should certainly have an aquarium, for in tropic seas the forms of marine life are very beautiful and wonderful.

Live corals, for example, are easily kept in an aquarium, and when expanded they appear like great clusters of gorgeous flowers. Corals, as we ordinarily see them, are merely the dead and bleached skeletons, and look hardly more like the living corals than a bird's skeleton looks like a live bird. When alive the coral is covered with a great number of sea-anemone-like animals, each of which occupies one of the openings that we see in dried coral. They are usually most brilliantly colored and beautiful in form.

The tropical fishes are also magnificent creatures. Many of them are colored with hues of red, green, blue, yellow, purple, and gold, and look more like brilliant

birds than like the fishes that we know in the North. Such species as the angel-fish, parrot-fish, coral-fish, etc., are graceful in form as well as gorgeous in color, and are very easy to keep in an aquarium in the South. Even in the North these exotic species may be successfully kept, but the water must be maintained at a very even temperature and must be very clean and fresh.

Not only are aquariums very ornamental and interesting, but they are very instructive, and by their use we have gained a very large part of our knowledge of the lives and habits of the myriad denizens of the sea.

CHAPTER XXI

REPTILES

REPTILES AS PETS

ONCE our natural aversion to reptiles is overcome, we find that many of them are very interesting creatures, beautiful in color and docile and confiding in disposition.

The commonly accepted idea that all reptiles are slimy, clammy, cold creatures is entirely wrong. A great many of the lizards and snakes are as smooth and soft as satin or silk. No true reptiles are slimy or clammy, and, as a rule, their bodies are so warmed by the sun that they are far from being cold to the touch.

Only a very small proportion of reptiles are poisonous, and the majority are perfectly harmless, many species being incapable of inflicting a wound or injury of any sort.

Scarcely any one who has examined lizards, snakes, and similar creatures in museums or menageries will deny that they are beautiful. Their colors are often brilliant, they are handsomely blended or arranged in pleasing patterns, and when healthy and clean they shimmer and glisten with a myriad of iridescent tints.

Even the supposition that all reptiles are stupid, ill-tempered, or untamable is far from correct, for many

snakes, lizards, and turtles are susceptible to kind treatment and learn to recognize their masters and to respond to a call or name. Thus we have disposed of all the objections to reptiles as pets and may consider how they should be cared for and fed and what species are adapted to captivity.

The majority of reptiles are very easily housed and cared for and require very little attention. If given food and water and plenty of space and warmth, reptiles will be perfectly content, for their sole occupation in life consists in taking things easy, eating, and basking in the sun.

Some reptiles require dampness, and others require a very dry atmosphere, according to whether they are woodland denizens or inhabitants of sandy, desert wastes, and you must know to which class your reptiles belong before arranging their cages.

Our common snakes and many foreign species love a damp atmosphere, and to be happy they should have numerous plants, grass, etc., in their cages. Other species are fond of water and must be provided with receptacles in which to bathe and swim. Still others live naturally in trees and bushes, and should be furnished with them; and many kinds of reptiles naturally living in crevices and crannies of rocks should be furnished a pile of stones in confinement.

Lizards, as a rule, are lovers of dry air and brilliant sunshine and will thrive best in a cage provided with dry sand, a few rocks, and a tree or bush on which to climb.

A very satisfactory reptile house can be constructed of wood and glass, especially if the inmates are snakes. The cage may be merely a deep, roomy box with a glass top and small openings for ventilation, or it may be constructed with glass sides and ends like a huge aquarium. Where native species are kept, a cage made of wood, with a hinged netting-covered top and wire-netting sides, will answer; and for lizards the netting is preferable to glass. Indeed, almost any sort of a box or cage will serve for keeping reptiles, the only essentials being that it must be accessible so as to be easily cleaned and arranged so that food may be introduced or specimens removed without danger of the inmates escaping.

The size of the cage or house must be governed by the number and size of the reptiles. A number of small snakes or a whole colony of the small tropical lizards commonly called "chameleons" will thrive in a box or cage 2 feet long, 2 feet high, and 18 inches wide, whereas a large python or boa or several large blacksnakes or iguanas will require more room. A great deal of space is not, however, necessary for reptiles, since they usually get along well together and will sleep and rest coiled or nestled together in a very sociable manner. The main object in having plenty of room is to afford exercise and make it easier to keep the quarters clean.

Many so-called reptiles are really amphibians. Such are the frogs, toads, and salamanders, and these should not be confounded with true reptiles, for their habits

are very different, and they require different cages, treatment, and food. The various salamanders are frequently called "lizards," but they are not at all like real lizards save in form. The skins of all reptiles are covered with scales, and they are never slimy, whereas amphibians have no scales and are usually slimy or exude some sort of liquid from pores in their body. The western "Horned Toad" is a true lizard, but the common toad is an amphibian.

Nearly all reptiles, with the exception of a few lizards and turtles, feed upon live animals or insects, and they will seldom eat dead animals or raw meat. For this reason it is at times difficult to feed reptiles, and one must keep a supply of live food on hand for the larger species. But reptiles can go a long time without food with little discomfort, and you must not expect them to eat daily.

LIZARDS

Nearly every species of lizard may be kept in captivity. The little Blue-Tailed Lizards of the Southern and Eastern States are pretty and attractive creatures and become very tame. The West Indian House Lizards, popularly called "chameleons," are frequently kept as pets by ladies, and these little fellows are always lively, interesting, and docile. These West Indian lizards become very tame and will soon learn to recognize their master or mistress and to answer to a call or whistle. They are very fond of music and will sit motionless for hours listening to a piano or other

musical instrument. While doing this they have an odd habit of elevating the head, swelling out the throat and moving up and down on their legs.

In the West Indies they are exceedingly abundant everywhere and run in and out of houses and buildings when and where they please. They are not molested for they are inveterate destroyers of flies, mosquitoes, and ants and help a great deal in keeping these pests under control. It is not at all unusual for one or more of these little lizards to jump onto the table during meals and make himself perfectly at home, picking up a crumb here and there and gobbling up any unwary fly that is attracted to the table.

If grasped by the tail these creatures break away and escape, leaving their tails behind them. This does not inconvenience them in the least, for the tail soon grows again, and one may frequently see lizards without tails, with tails just sprouting, or with tails half grown. This is a wise provision of nature, for the natural enemies of the lizards are more apt to grasp them by the tail than elsewhere, but you should bear this fact in mind and not hold your pets by their tails unless you want a collection of bobtailed lizards.

Lizards change their skins quite frequently, and after the process is over they come forth in a very shiny, bright coat and with a very healthy appetite. Before changing their skin they become dull-colored, thin, and lazy, and at this time they should not be handled or disturbed.

These little lizards feed mainly on flies and other

small insects, but they will also eat crumbs, bits of raw meat, fruit, earthworms, and boiled egg. Meal-worms and ants' eggs are good for them, and if a bit of decaying fruit is placed in their cage it will attract flies in warm weather. If the netting of the cage has mesh coarse enough to admit flies but not large enough to allow the lizards to escape, they will secure a good many insects attracted by fruit in this way. If you wish to give your pet lizards a real treat, place them in a sunny window where there are flies. You will be greatly interested and amused to see how easily the little fellows catch the lively insects and how lightning-like are their motions.

Some species of the small lizards have suckers on their toes and can climb upside down on glass or other smooth surfaces, but the majority of the species depend upon clinging with their delicate, sharp toes.

The West Indian lizards possess the power of changing color and will assume a tint corresponding fairly closely to that of their surroundings. Certain species have this power developed more than others and can change from bright green to gray, brown, or yellow very quickly. This habit has led to their being called "chameleons," but in reality the true chameleon is another species of lizard found in Africa and southern Europe.

The real chameleon is an exceedingly ugly-looking creature, with great, staring eyes, an uncouth head and body, and queer toes that resemble the feet of a parrot. Whereas the American lizards are very lively and active

and capture their insect prey by leaping upon it, the true chameleon is slow and deliberate in its actions and captures insects by darting out its long, sticky tongue, to which the insects adhere. Chameleons are very tender and are not easy to rear in captivity, but they are very odd and interesting creatures. They are not half as desirable as the West Indian lizards, however, and are merely desirable as curiosities.

HORNED TOADS

These are broad, flat, curious lizards found on the sandy plains and deserts of our Western and Southwestern States. They are very quiet, docile creatures, become very tame, and learn to answer to a call.

They require a sunny, warm spot, and love to bask in sand or on exposed rocks. They feed upon insects but will eat crumbs, earthworms, fruit, and ants' eggs when kept in captivity. They cannot jump or climb to any extent, but when they wish to do so they can run with remarkable speed. They are exceedingly easy to keep in confinement, requiring little care or attention.

The Horned Toads have for many years been credited with the power of "shooting" blood from their eyes when disturbed. This was formerly considered a superstition of ignorant people, but quite recently well-known scientists have proved that this queer creature actually can squirt little drops of blood, or blood-colored liquid, from special pores near the eyes.

The Horned Toad has a third eye in the top of its

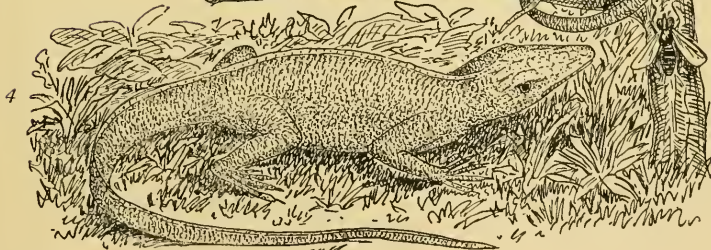
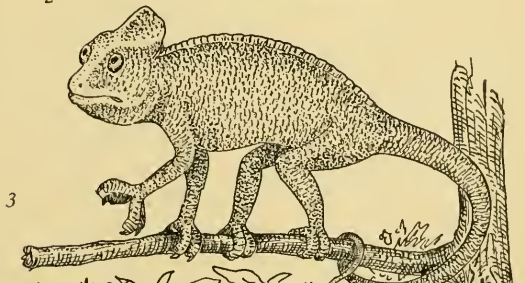
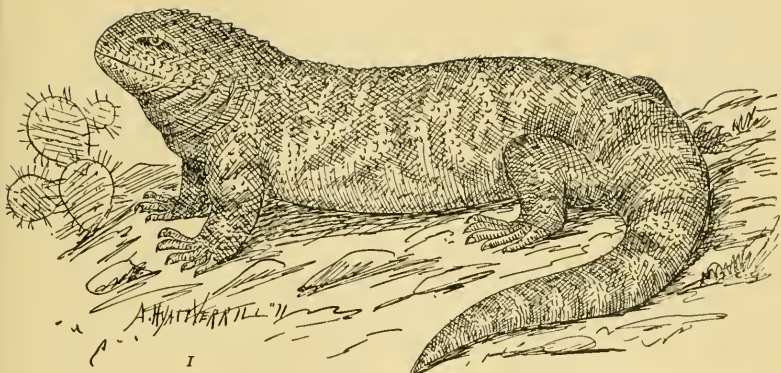
head, between the other eyes. This peculiarity is common to many other species of lizards, but the third eye is covered with skin and does not have any power of sight. It merely indicates the presence of a true third eye, which was a feature of some of the giant lizards of prehistoric times.

GILA MONSTERS

These large orange and black lizards are frequently seen in menageries and zoological parks. They are natives of the Southwest and are ugly, ill-tempered beasts only suitable for curiosities. They are poisonous but have never been known to cause serious injury or death to human beings when in captivity. In a natural state the Gila Monster feeds upon small birds, animals, insects, and birds' eggs. In captivity it will devour eggs, and will eat mice, frogs, or other live things.

ALLIGATORS

These animals, as well as crocodiles, are very stupid. Travellers frequently bring them home from Florida, and they are also sold by pet dealers, but they are so far lacking in intelligence as to be most uninteresting. They are very easily kept and should be placed in a box or cage with a pan of water embedded in the floor or earth of the cage. They love warmth and sunshine and may be fed upon flies, worms, small toads and frogs, mice, fish, and raw meat. Even a comparatively small alligator can bite viciously, and alligators can



REPTILES.

1. Gila Monster. 2. Horned Toad. 3. True Chameleon. 4. West Indian Lizard.

never be trusted. It is said that they may be tamed and trained, but I have never actually seen an educated or really tame alligator or crocodile.

IGUANAS

The iguanas are giant tree-lizards of the American tropics and are often very beautifully colored with blue and green. They grow to very large size, often 6 to 8 feet in length, and are much prized for food by the people who live in the countries where they are found. They are really excellent eating and taste much like young chicken.

The iguanas spend most of their time in the trees, but they can swim readily and do not hesitate to enter lakes or rivers to escape their enemies.

When wild, iguanas are quite ferocious and if captured or wounded will bite viciously and will hold onto any object they seize with the tenacity of a bulldog.

They become very tame in captivity and love to be petted and scratched and are very fond of music, especially whistling. They are very easy to keep if given plenty of room, branches to crawl on, and considerable warmth.

They live mainly on fruit, young leaves, and tender shoots and in captivity will thrive on bananas, apples, lettuce, clover, etc. They will also eat raw meat, eggs, and insects. Iguanas enjoy an occasional bath, and a large dish of water should be furnished for bathing once a week.

TURTLES

Any of the turtles may be kept in captivity. Land-tortoises require some sort of an enclosure, and a large box with a bottom of coarse wire netting is an excellent cage. The land-tortoises eat earthworms, insects, and vegetables, and if the box is moved from place to place occasionally, the turtles will find a great deal of sustenance in the form of grass, clover, etc. Fresh pieces of apples, cabbage, and lettuce leaves, raw sweet potatoes, broken squash or pumpkin, green corn, and various other vegetables are relished by these creatures, and earthworms should also be given. Land-turtles become more or less tame but have little intelligence. If your tame land-turtle does not show signs of fright when you approach and will allow you to handle him without drawing into his shell and hissing, you should be satisfied.

Water-turtles are far more intelligent than land-tortoises, but even these creatures seldom learn more than to recognize their owners and to take food from the hand. The only care required for water-turtles is to provide clean water, rocks, or logs for them to crawl upon and to give the proper food. They may be kept in an aquarium with a block of wood floating on the water, or they may have a special cage consisting of an open box with a tub or pan of water inside. The bottom of the box should be covered with clean sand, and the pan of water arranged so that the turtles may climb in and out readily.

Water-turtles may be fed on meal-worms, earth-worms, raw meat, bits of fish, insects of all kinds, and goldfish food.

Turtles lay their eggs in sand near ponds or other bodies of water, and when kept in captivity they frequently lay a number of their white, leathery-shelled eggs. If not broken or injured the eggs will usually hatch, and the young turtles are very odd and interesting. Some species have a queer little horn on the nose and suggest some pygmy rhinoceros. The horn is to enable the young turtles to break the egg-shells, and it soon drops off after they hatch.

Turtles hibernate in cold weather in the North and should either be taken indoors in winter or provided with facilities for hibernating. Water-turtles bury themselves in the mud for the winter, while land-turtles dig into the earth under dead leaves, brush, etc.

SNAKES

There is a fascination about snakes which causes persons who are deathly afraid of them to watch them intently and to return again and again to their cage. Many people have an idea that this is because of some occult power the snake has to "charm" human beings, but this is not the case. It is doubtful if any snake can "charm" even a small bird or animal, and the reason people are attracted or fascinated by these reptiles lies in the human brain. Some persons are morbidly curious, and any grewsome or frightful sight will attract them, and the fact that they fear snakes

arouses this morbid curiosity and causes them to gaze at a reptile in much the same way that some people will gaze at a murderer or other criminal.

To one who is not thus affected snakes are very graceful, handsome, and interesting creatures. They are not particularly intelligent, but they may be tamed until very docile. The snakes handled by so-called "snake-charmers" are gentle and quiet merely because they are tame and accustomed to handling and not because of any ability to charm residing in the human performer. Any boy or girl in the audience could handle the snake-charmer's pets just as freely as the professional.

Snakes are easily kept and require little attention. Warmth, cleanliness, and food are the only essentials. The majority of snakes require live animals for food, and the kind of animals to be given will depend upon the size of the snake. Small garter-snakes, black-snakes, and similar species will thrive upon crickets, beetles, small frogs, mice, etc. Bull-snakes, pine-snakes, puffing adders, and other large-sized American species should have toads, frogs, mice, and insects; pythons, boas, anacondas, and very large snakes must be fed on rats, guinea-pigs, rabbits, or other fairly good-sized animals.

This is the greatest objection to raising snakes, for a great many people consider it very cruel to feed a live animal to a snake. As a matter of fact, it is not half as cruel to give a rat or mouse to a snake as to a cat or dog. The snake makes a lightning-like dart at

the animal and kills it instantly, whereas the cat or dog worries it, mangles it, and rejoices in its suffering.

The argument is sometimes advanced that birds and animals are in deadly fear of snakes and suffer great mental torture when placed in their cage. This is pure sentimental nonsense in most cases. I have often seen rats, guinea-pigs, and rabbits in a cage with large boas, and they did not exhibit the slightest sign of fear. On the contrary, they ran here and there, over and among the snakes, and even ate contentedly while in the same cage.

As curiosities snakes are excellent, and if a boy is fond of such things he can find considerable amusement and interest with tame snakes, but they can scarcely be considered desirable household pets or companions.

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