









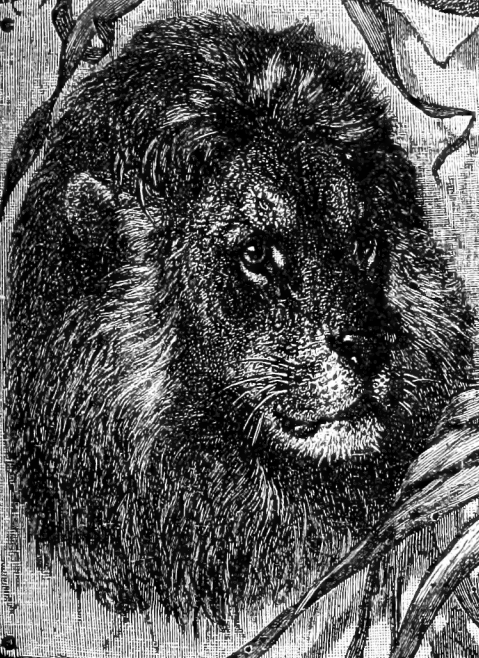
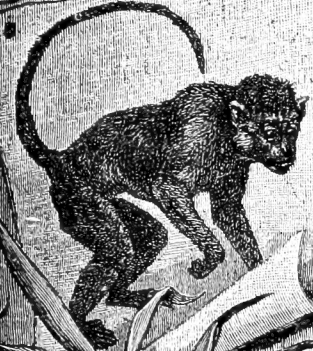
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# Animate Creation

A popular edition  
of the

Standard  
Natural  
History

Our  
Living  
World.



Selmar Hess,  
Publisher  
New York



# Animate Creation;

POPULAR EDITION OF

“OUR LIVING WORLD,”

A NATURAL HISTORY

BY

THE REV. J. G. WOOD.

REVISED AND ADAPTED TO

*AMERICAN ZOOLOGY,*

BY

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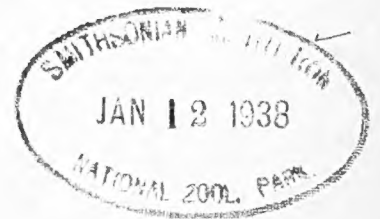
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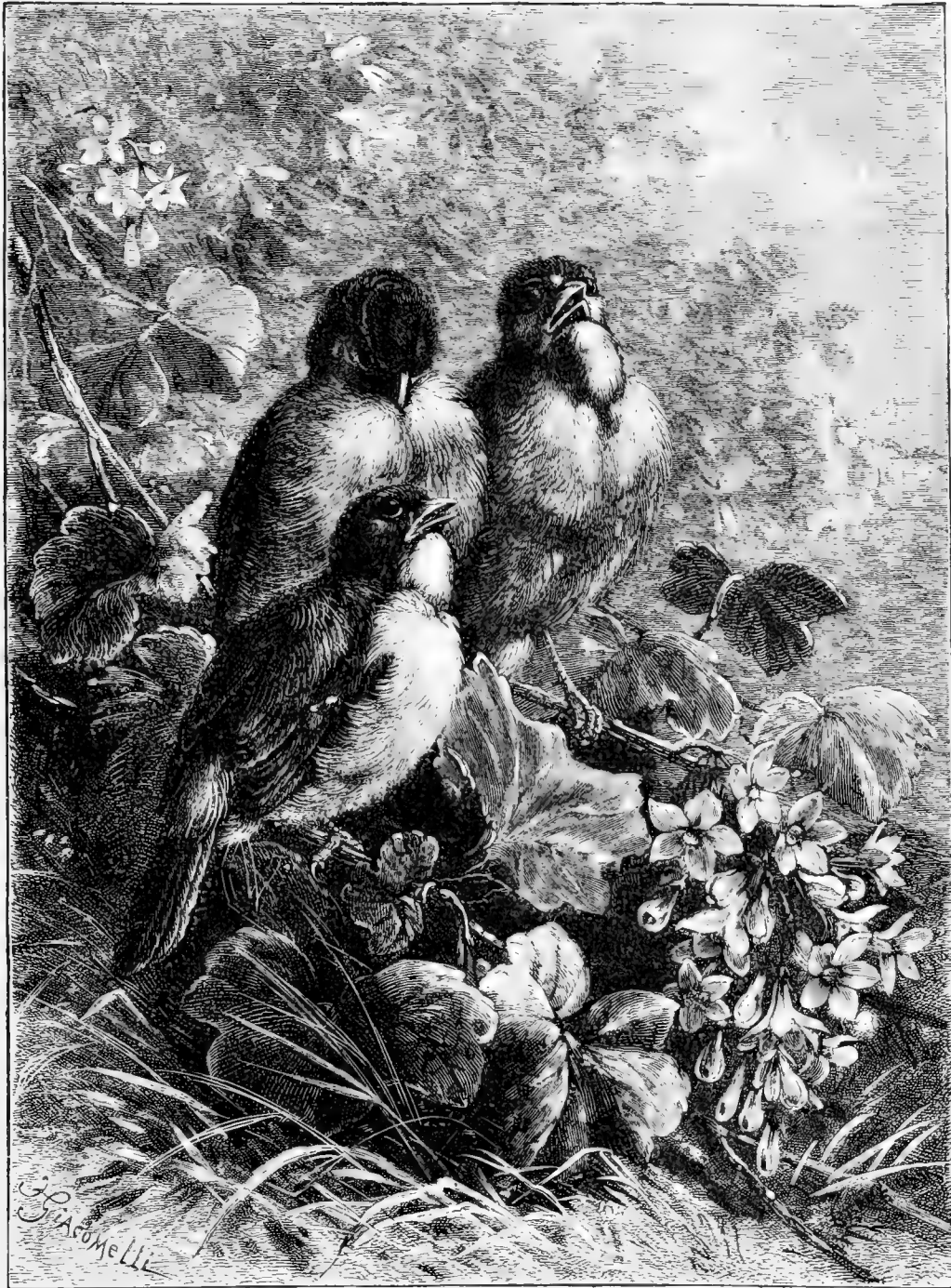
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## INTRODUCTION.



THE most conspicuous external characteristic by which the BIRDS are distinguished from all other inhabitants of earth, is the feathery robe which invests their bodies, and which serves the double purpose of clothing and progression. For the first of these two objects it is admirably adapted, as the long, slender filaments of the feathers are not only in themselves indifferent conductors of heat, but entangle among their multitudinous fibres a considerable amount of air, which resists the ingress or the egress of external or internal heat, and thus preserves the bird in a moderate temperature through the icy blasts of winter or the burning rays of the summer sun. A similar function is discharged by the furry coats of many mammalia; but the feathers serve

another office, which is not possessed by hair or fur. They aid the creature in progression, and enable it to raise and to sustain itself in the atmosphere. Towards the promotion of this latter function the entire structure of the body and limbs is obviously subservient, and even in the comparatively rare instances where the bird—such as the penguin, ostrich, or the kiwi-kiwi—is destitute of flying powers, the general idea of a flying creature is still preserved.

The fuller and more technical description of the Birds runs as follows. They are vertebrate animals, but do not suckle their young, nourishing them in most instances with food which has been partially macerated in their own digestive organs, and which they are able to disgorge at will, after a manner somewhat similar to that of the ruminating quadrupeds. The young are not produced in an actively animated state, but inclosed in the egg, from which they do not emerge until they have been warmed into independent life by the effects of constant warmth. Generally, the eggs are hatched by means of the natural warmth which proceeds from the mother bird; but in some instances, such as that of the tallegalla of Australia, the eggs are placed in a vast heap of dead leaves and grass, and developed by means of the heat which is exhaled from decaying vegetable substances, and which is generated to such an extent that in some cases, such as a wet haystack, it actually sets the seething mass on fire. Urged by a like instinct, the common species of snake deposits its eggs in secret spots, such as dunghills and hotbeds, and there leaves them to be hatched by the constantly generated warmth. An analogous process has long been in vogue among the Egyptians for the hatching of young poultry by artificial heat, and has been, in comparatively recent years, introduced into this country.

When the egg is first produced, the future chicken is merely indicated by a little germ-spot, barely the size of a single oat-grain, and does not attain the power of breathing atmospheric air, and receiving nourishment into its mouth, until a period of many days has elapsed. To watch the gradual development of the young chick is a most interesting experiment, and one which is full of suggestive instruction. There is but little difficulty in the matter, even in the very earliest stages of incubation, for the structure of the egg is so wonderfully balanced, that in order to view the little germ-spot it is only necessary to lay the egg on its side and remove a portion of the shell, when the germ will be seen lying immediately under the aperture. In whatever way an egg may be turned, the germ-spot invariably presents itself at the highest point, provided only that the egg be laid on its side, and that the living principle has not been extinguished, for life, however undeveloped, seems always to aspire. As the chick increases in size, the manipulation becomes easier, but it is always better to immerse the egg in water or other transparent liquid before removing the shell, and to keep it submerged during examination.

There are few objects which will better repay investigation than the young bird in its various stages of development. It is wonderful to see the manner in which a living creature is gradually evolved from the apparently lifeless substances that are contained within an egg. The being seems to grow under our very gaze, and we arise from the wondrous spectacle with an involuntary feeling that we have been present at a veritable act of creation. To describe fully the beautiful process in which a chick is elaborated out of the germ-spot would occupy very many pages, and cannot be attempted within the compass of the present work. Briefly, however, the order of events is as follows:

When a newly laid egg is opened, it is found to contain a mass of substance which is popularly divided simply into "white" and "yolk," but when examined more closely, by placing it under water and carefully removing the shell, its contents are found to be very elaborately disposed, so as to meet the object for which it was formed. Immediately within the shell lies a semi-transparent and tolerably strong membrane, composed of two distinct layers, pressed closely to each other for the greater portion of its extent, but separated at the widest end of the egg, and containing between the layers a supply of atmospheric air to satisfy the requirements of the young chick. This space gradually increases as the young bird becomes more developed. Within this membrane lies the "white," a liquid albuminous substance, which is also disposed in two distinct layers, that which is nearest to the shell being rather thin and fluid, while the inner layer is comparatively thick, tenacious, and very

transparent. Within the white lies the yolk, surrounded by a slight membrane, which serves to guard it from mixing with the white. In order to prevent the yolk from shifting its place at every change of position in the egg, it is anchored, so to speak, in its proper place by two curious ligaments fastened to the yolk membrane. Upon the yolk, and immediately under the membrane, lies the little germ which in the space of three weeks will be developed into a bird.

After a few hours of warmth, the first idea of the chick is seen in a little whitish streak, barely one-tenth of an inch long, rather wider at one end, and always lying *across* the egg. By degrees, this streak enlarges, and forms a groove between two little ridges, and in a few hours later, a delicate thread is seen lying in the groove, being the first indication of the spinal cord. Presently a number of the tiniest imaginable square white plates make their appearance on each side of the thread, and are the commencement of the vertebræ. It is most curious to see these gradual changes, for the different parts come into view as though they were crystallized from the substance of the egg. By the end of the first day the germ takes a curve, and looks something like a little maggot as it lies in the yolk. The little heart is just perceptible on the second day, and on the third a series of blood-vessels have been formed, and are supplied with blood by a very curious system of arteries and veins. By similar processes the various organs of the body are built up, the feathers beginning to make their appearance about the twelfth day, and on the nineteenth or twentieth day the chick pierces with its beak the air-sac which lies at the blunt end of the egg, and by means of the air which it thus obtains is often able to chirp before it chips the shell.

During this period of its existence the young bird is nourished by the yolk, which is connected with its abdomen, and which is not separated from the body until the chick has broken the shell, and is able to respire freely. When leaving the egg-shell, the chicken pecks in a circle, which nearly corresponds with the shape of the air vesicle, so that when it emerges it walks out of a circular trap-door which it has cut for itself, and which often remains suspended by a hinge formed from an uncut portion of the lining membrane. It is possible that the shell may be softened in this spot by the presence of internal air, and may therefore afford an easier passage to the inclosed chick. In order to enable the tender-billed little creature to penetrate so hard a substance as the egg-shell, the tip of its beak is furnished with a strong, horny excrescence, which falls off shortly after the chicken has emerged from the egg, thus carrying out the principle that nature abhors a superfluity.

Having watched the little bird through its life-development, we will now proceed to a short examination of the bird-skeleton, and will take for an example that of the eagle. Even in the mammalia the skeleton presents an appearance very different from that of the living creature, and in many instances the external structure and its bony framework are so unlike each other that an inexperienced observer would probably refer them to different animals. But in the birds the contrast is still more strongly marked, for the skeleton is not only deprived of its fleshy covering, but also of the feathery coat which surrounds the bird so thickly, and which in many cases, such as the owl, entirely masks the general outline of the bird. Taking the skeleton of the eagle as a good example of the bony scaffolding which supports the vital and locomotive organs of birds, we will begin with the head and proceed gradually to the tail.

The chief and most obvious distinctive feature in the skull of a bird and of a mammal lies in the jaw-bones, which in the bird are entirely toothless, and are covered at their extremities with a peculiar horny incrustment, termed the beak or bill. This bill is of very different shape in the various tribes of birds; being in some cases strong, sharp, and curved, as in the birds of prey; in others long, slender, and delicate, as in the creepers and humming-birds; and in others flat, spoon-like, soft, and sensitive, as in the ducks. The movement of a bird's jaw is not precisely similar to that of a mammal, owing to the manner in which a certain little bone, termed from its squared shape the quadrate bone, is articulated to the bones of the skull.

Passing from the head to the neck, we find a marked distinction from the mammals. In them, the vertebræ of the neck are never more than seven in number; the long neck of the

giraffe and the short one of the elephant being obtained by the prolongation of the seven vertebræ in the former and their compression in the latter. In the birds, however, there are never less than nine vertebræ in the neck, and in some cases the number is considerably greater; the swan, for example, possessing no less than twenty-three of these bones. The neck is also much longer in the birds, being in many instances longer than the remainder of the body. The vertebræ of the neck are extremely flexible, as is needful for the peculiar habits of birds; but those of the back are immovably connected with each other, and in many cases are even fused together. The seven or eight short vertebræ which form the tail are movable, and are generally terminated by a single bone of greater length than any of the others.

We now proceed to the breast and body. The ribs are chiefly remarkable for a flat appendage which starts from the lower portion of the bone, and is directed backwards, so that it overlaps each succeeding rib. The breast bone is placed lower than might be supposed from the external aspect of a bird, and is of very great size. Its substance is much flattened, and it possesses a strong ridge or keel of bone, which varies in its depth according to the powers of flight possessed by the particular species to which it belongs. As the eagle is a strong-winged bird, the keel is very prominent, but in such non-flying birds as the ostrich and the apteryx, there is no keel at all. Between the breast bone and the neck lie four clavicles, or collar bones, differing much in size and shape in the various species of birds. One set of them, technically called the *os furculare*, from its forked shape, is sometimes absent, its place being supplied by a ligament; but the others, termed the *claviculæ coracoïdæ*, are invariably present. These two sets of bones are familiar to all who have carved a fowl, under the terms of "merry-thought" and "neck bones."

The limbs now come before our notice, and we cannot but be struck with the curious fact, that in the birds the bipedal mode of walking again makes its appearance, having disappeared through all the mammalia with the exception of man. There is, however, this analogy between the lower mammals and the birds, namely, that in both instances the anterior limbs are intended for progression, although in the one case these formations belong to earth, and in the other to the air. The bones of the wing present a considerable resemblance to those of a man's arm, as may be seen by comparing the skeleton of the eagle with that of the man in Volume I. The upper arm bone is of various lengths in the different birds, being of wonderful proportions in such long-winged birds as the albatross, but very short in the penguins, the cassowary, and many other birds. The two bones of the fore-arm, technically called the *ulna* and *radius*, are also long in the long-winged birds, and serve to carry a large expanse of feathers. Of these two, the ulna is the larger and more cylindrical. To the end of the ulna and radius are jointed the two little bones of the wrist, which bear a quasi hand, composed of a thumb and two fingers. The thumb is very small, consisting of either one or two bones; and the fingers, which are only needed for the purpose of bearing feathers, are also small. One of them is composed of either two or three joints, but the other is a very little one, being but one single pointed bone.

The bones of the legs are very similar in their arrangement to those of the mammalian quadrupeds, although they are subject to certain modifications, especially at their extremities. The thigh-bone is tolerably strong and cylindrical, but of no very great length, in proportion to the size of the bird or the length of its limbs. Even in the curious stilt-plover, where the legs are of such extraordinary length, the thigh-bone is comparatively short, and not visible outside the feathers. The leg-bone, or "tibia," is always the longest bone of the limb, and is accompanied by a very small and undeveloped "fibula," which is only attached to its upper extremity, and tapers gradually to a point. The "instep," as we should term it in a human foot, is merely a single bone, jointed at its upper extremity to the tibia, and its lower to the bones of the toes. In general, birds are furnished with four toes on each foot, but there are several exceptions to this rule, among which the ostrich is the most conspicuous.

Not only do the bones of a bird differ in external form from those of a mammal, but they are also considerably modified in their structure. In the mammals the bones are heavy, solid, and their centre is filled with marrow; but in the birds the bones are of a much lighter make, and many, such as the upper wing bone, the breast bone, and part of the skull, are, moreover,



hollow throughout their centres, so as to combine great strength with the least possible weight. These hollow bones communicate with the legs through certain curious appendages called air-sacs, which open into the lungs, and apparently serve as reservoirs of respirable atmosphere, so that the bird is able to force the hot and rarefied air from its lungs into its bones. In some very rare instances even the bones of the feet and toes are hollow, and penetrable with air as far as the insertion of the claws. Some birds, however, especially those of small dimensions, do not possess these hollow bones, and in all cases the cavity is not developed until the creature has attained to maturity. In the apteryx, a non-flying bird, the only hollow bone is that of the lower jaw. So complete is the communication with the lungs through the bones of some birds, that if the bone should be broken they are enabled to breathe through the open extremity, even though the throat be compressed, or the head plunged under water.

THIS slight sketch of the skeleton is necessary as a prelude to the description of the FEATHERS, because several of the most important of these appendages derive their names from the portion of the structure on which they are set.

On a general view of a bird it will be seen that the feathers fall naturally into two orders, namely, those of progression and those of covering. But as in the description of a bird, especially of one that is unknown to science, and of which no figure is extant, it is needful to describe the form and color of the different portions of the creature with great accuracy, this sweeping division of the feathers into two sets will be quite insufficient for the purpose. On a closer examination, however, it will be seen that the feathers possess a kind of natural arrangement, which, with a few unimportant and obvious additions, is amply sufficient for actual scientific purposes. The best mode of learning the name of the different parts of the plumage is to procure any bird, say a sparrow or pigeon, which may easily be obtained, and to investigate the formation and arrangement of the feathers from actual inspection. It is an interesting little study, and will save much time, as a lesson once so learned will never again be forgotten. We will suppose a dead sparrow to be laid on the table.

Let one of its wings be spread upon the table, and its plumage will be seen to consist of a row of long, flat, and stiff quill feathers, whose insertion is covered by a great number of smaller and softer feathers. The quill feathers are technically termed "principals," and the others are called from their office, "coverts." Before examining the principals, it needs that the coverts be first attacked, because they must be removed before the quill feathers can be properly traced to their sources. Along the upper surface of the wing run two or three rows of these short feathers, which are termed the "greater coverts," and below these a single row of "lesser coverts," the latter of which may be distinguished by their slightly different shape and manner of lying. The under surface of the wing is clothed with a dense layer of small feathers termed the "under coverts."

Now let all the upper coverts be removed, and the quill feathers will be visible from their insertion to their extremity. On spreading out the wing it will be seen that ten of these feathers spring from that portion of the wing bone which corresponds to the hand and fingers of man. As these feathers come first in point of order, beginning at the extremity of the wing, they are termed the "primaries," and indicate by their shape and development, the mode of flight followed by the bird. If, for instance, they are comparatively short, rounded, and concave, as is the case with our example, the sparrow, the flight is slow and laborious, accompanied with much beating of the wing and dipping in the air between each stroke. If they are long, firm, and flat, as seen in the eagles, vultures, and other similar birds, the flight is easy and graceful, though capable of exceeding swiftness when needful. If they are large, concave, and edged with soft fringes, the flight is quiet and noiseless, as is seen in the owls. Some birds, such as the ostrich, the cassowary, and other running birds, possess short and pointed primaries, which can hardly be recognized as belonging to so large a bird, and the flight is in consequence reduced to zero.

Next to the primaries come a second set of quills, called for that reason "secondaries." They are often undistinguishable externally from the primaries, into which they imperceptibly merge, but may be at once detected by following them to their roots, which are inserted upon

that part of the wing which corresponds to the wrist and elbow of man. They are very variable in number, shape, and size; and although they are in some birds hardly distinguishable from the primaries, are in others very prominent and conspicuous.

Next to the secondaries come the "tertiaries," which take their root in that part of the wing which corresponds to the elbow and shoulder. In some birds, such as the plovers, the tertiary feathers are extremely long, giving a very peculiar character to the wing. In the crane they are developed into long, drooping plumes; but in most birds they are very much shorter than the primaries, and are merged into the little feathers that cover the upper surface of the wing. Upon the thumb is a little fan-like wing, quite distinct from the remainder of the feathers, and distinguished by the name of "winglet."

A second set of quill feathers is to be found upon the tail, where they assume different shapes and dimensions according to the species of bird, its sex, age, and the nature of its flight. As these feathers perform the office of a rudder in directing the flight of the bird as it passes through the atmosphere, they are technically termed "rectrices," or directors. The insertion of these quill feathers is concealed above and below by certain little feathers, named from their position the upper and under tail coverts. Generally, these feathers are of very small dimensions, but in some examples they obtain to considerable length, and are very imposing in their appearance. The magnificent "train" of the peacock is composed, not of the tail quill feathers, which are short, stiff, and used chiefly for the proper display of the train, but of the greatly developed upper tail coverts; and from the under tail coverts of the marabout stork are taken those beautiful plummy ornaments that are so well known as articles of feminine decoration.

Lastly, there are some feathers on either side of the head, which shield the orifice of the ear from injury, and are therefore named the ear coverts; and the patch of feathers upon the shoulders is appropriately known by the name of "scapularies."

This array of plumage is not obtained until the bird has attained to some amount of development, and the shape and color of the feathers are so distinct from each other at the different epochs of a bird's life, that in many instances an adult, a half-grown, and a juvenile specimen have been taken for individuals of different species, and noted as such in systematic catalogues.

When the young bird is first hatched its feathers are hardly worthy of the name, being mostly restricted to a kind of soft down. In the course of a week or two the quill feathers begin to make their appearance, like little yellow or black spikes projecting from the wings, but it is not until after the lapse of some time that they attain sufficient strength to sustain the bird in the air. In a few months after the young bird has gained its first plumage, it loses the feathers with which it has only just been clothed, and by going through the process technically termed "moulting," induces an entirely new plumage, which is often very different from the former in its traits and general aspect. In many cases the bird spends three years of life before it is clothed with the full glory of its adult garments, and during the first and second years the two sexes are so similar as hardly to be distinguished from each other without dissection. The moult takes place annually even in adult birds, and is highly needful as a means of giving them a new set of plumes to replace those which have been worn out by the service of a whole year's wear.

A similar phenomenon is observable in the fur-clad mammalia, who shed the worn and ragged hairs in the autumn, and obtain a new and warm coat in readiness for the colder months. Even in the human race the same principle is observed; but the change of hair is in them so gradual that it is scarcely perceptible, except to those who watch its progress. Indeed, a partial moult can be induced at any time upon a bird, and employed to restore a broken or damaged feather, irrespective of the time of year. If the injured feather be drawn from its socket—an operation which is always attended with some pain and loss of blood—it will soon be replaced by another and a perfect feather, springing from the same socket.

The rapidity of the process is really astonishing, and presents a curious analogy with the phenomenon of the rapid formation of the stag's horns. A remarkable instance occurred lately within my own observation, in the person of a long-tailed Australian parrakeet. The bird contrived to get out of its cage, and in flying along a large room was chased by a man, who made a successful grasp at its tail, but failed in securing the bird, which flew screaming



FIRST LESSONS IN FLIGHT.



away, leaving its beautiful long tail in the hands of its would-be captor. At last the bird was replaced safely in its cage, but presented a very forlorn aspect in consequence of the loss of its tail. A very few days, however, showed the tips of some new feathers, that had already grown long enough to pass beyond the tail coverts, and in a month or so the long tail was even more beautiful than ever. There seems, indeed, to be a very marked analogy between the feathers of birds and the tusks or horns of many mammals. Both depend greatly on the sex and age of the animal to which they belong, and their shape and dimensions are unfailing indications of the vigor or feebleness of their owners.

The expanse of the outstretched wings of every flying bird is so very great in comparison with the size of the body, that there is need of very great muscular development in order to give the powerful strokes by which the body of a bird is urged through the atmosphere. It is for this purpose that the breast-bone is furnished with the deep keel which has already been mentioned, for its projecting edge and sides afford attachment to muscles of enormous size, which are devoted to the purpose of drawing the wing forcibly downwards. Although in the gallinaceous birds, of which the common barn-door fowl is a familiar example, the pectoral muscle, as it is called, is not so largely developed as in many of the swift-winged birds, it attains to considerable dimensions, as may be seen by every one in carving a common fowl, whether it be boiled or roasted. This muscle forms the solid and delicately-flavored meat which is attached to the wing when removed, and also constitutes the greater part of the "breast."

Strength, however, is not the only requisite in a bird's wing. It is evident that if the stroke were only made upwards and downwards, the bird would never rise in the air, much less make any progress forwards. On gently moving the wing of a dead bird, we shall see how beautifully its opening and closing is managed, so that on the stroke the feathers beat the air with their flat sides, but present their sharp edges as they return for another stroke. This movement is copied by the oarsman as he throws back the blade of his oar for another stroke, and is called "feathering," on account of the source from which it is derived. The means by which this object is attained is through a most perfect and beautiful arrangement of the wing muscles, which are so fashioned as to give the wing a slight and involuntary turn just as it is thrown backwards after making its stroke.

The reader who desires to understand this curious structure, cannot do better than to denude the wing of some bird of its feathers, to remove the skin, and lay bare the muscles. If he then moves the wings as if in flight, he will see, by the play of the different muscles, the part which they take in the general movement, and the wonderful harmony in which every individual muscle works with its fellows. Next let him pass a smooth but blunt edge, such as a small paper-knife, or the flat handle of a scalpel, between the different muscles and separate them throughout their entire length. By pulling each muscle in turn with a pair of forceps, he will see its object, and will be able to form a very good idea of the manner in which all the muscles act while working simultaneously in moving the wing.

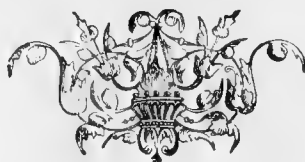
In the generality of birds, the senses of touch and taste seem to be but little developed, while those of sight, hearing, and smell are decidedly acute.

The sense of touch can be but very slight in a creature that is covered with feathers over the whole of its body; whose limbs are either plume-clad or tipped with horn, and whose mouth is defended by a hard, horny beak. There are exceptions in the case of the ducks, and many similar birds, whose beaks are soft and evidently possessed of delicate tactile powers, but in the generality of birds this sense is decidedly dull. Taste, again, can have but little development, as the tongues of most birds are devoid of the soft and sensitive surface which is found in the tongue of man and the mammals in general. At the base of the tongue the nerve-bearing papillæ are found in some genera of birds, but even in them these organs of taste occupy but a small portion of the tongue, and can give but little indication of savor. In many birds, indeed, such as the woodpecker and the humming-bird, the tongue is employed in a manner analogous to the same organ in the ant-eaters, being used to procure food and to draw it into the mouth. This structure will be described more at length when we come to treat of the birds where it is especially developed.

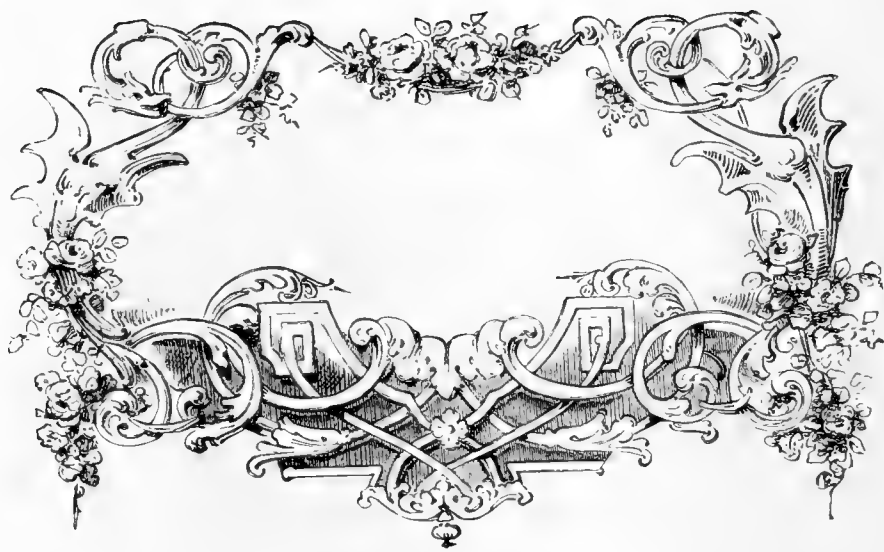
The sight of birds is almost invariably remarkable for its development and its adaptation for near or distant objects. The swallow, for example, when darting through the air with that swiftness which has become proverbial, is capable of accommodating its sight to the insect which it pursues even in the short space of time which is occupied by its swoop at its victim. The same phenomenon may be noticed in the falcon, which is able to perceive a little bird or animal on the ground, and though sweeping downwards with such wonderful rapidity that it looks merely like a dark streak in the air, is able to calculate its distance so exactly, that it just avoids dashing itself to pieces on the ground, and snatches up its prey with the same lightning speed which characterizes its descent.

It is very probable that a curious structure, named from its shape the "pecten," or comb, which is found in the interior of the bird's eye, may contribute to this peculiarity of vision. This comb is of a fan-like shape, and is situated upon the spot where the optic nerve enters the eye, projecting obliquely upwards, and evidently playing some very conspicuous part in the economy of the eye. The teeth, or folds of which this fan or comb is composed, are black in color and very variable in number, being only six or seven in the owls, and twenty or thirty in the sparrow. There is a plentiful supply of blood-vessels in the comb, but no muscular tissues, and it is supposed by several anatomists that its expansion or contraction, caused by the greater or less amount of blood which fills the vessels, may have some effect in the peculiarly delicate adjustment of the eye which has already been mentioned.

From the contact of external substances, as well as for the purpose of excluding unnecessary light, the eye of the bird is furnished with two ordinary eyelids, and a third, or supplementary eyelid, which plays within the others, and is technically called the nictitating membrane. This membrane is elastic, and by its own contractility is kept within the angle of the eye as long as its services are not needed. When, however, the bird wishes to cleanse its eyes from dust or other annoyances, it draws the membrane rapidly over the eye, letting it return to its place by its own powers of contraction. The eye of the bird is further remarkable for a series of bony plates which surround the eye, and are supposed to have a great influence in increasing or lessening the convexity of the eyeball. The number of these plates is nearly as various as the teeth of the comb, but upon an average their number is thirteen or fourteen. There are many other curious and interesting details in the anatomy and general structure of the birds, but as this publication is not intended as a work on comparative anatomy, we must proceed to the histories of the birds themselves.









# OUR LIVING WORLD.

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## BIRDS OF PREY.

### VULTURES.



IN the arrangement of the various species of living creatures which possess a visible organization, the greater or less perfection of the structure has formed the basis of systematic classification. In a certain sense, however, the development of all animals is equally perfect, inasmuch as it is most perfectly adapted to the necessities of the particular species or individual; so that the term perfection is necessarily rather a conventional one, and the systems of zoological arrangement are as various as their authors.\*

All the birds of prey, called scientifically Raptatores, or Accipitres, are readily known by their compressed and hooked beaks, the powerful talons which arm their toes, and the twelve or fourteen quill-feathers of the tail. The Vultures are distinguished by the shape of the beak, which is of moderate size, nearly straight above, curved suddenly and rounded at the tip, and without any "teeth" in the upper mandible. The middle toe of the foot is larger than the others, and the outer toes are connected with them at their base by a small membrane. In the greater number of species the head and upper part of the neck are nearly naked, and the eyes are unshaded by the feathery ridge which overhangs these organs in the eagles. As a general rule, the Vultures feed on dead carrion, and are therefore most beneficial to the countries which they inhabit. When pressed by hunger, however, they will make inroads upon the flocks and herds, and will not disdain to satisfy their wants with rats, mice, small birds, or insects.

The name of Bearded Vulture has been given to the Lammergeyer on account of the tufts of long and stiff bristle-like hairs which take their rise at the nostrils and beneath the bill, and form a very prominent characteristic of the species. The "cere," a soft naked skin which is placed on the base of the beak, is not very large, and the upper mandible is rather higher in front of the cere. The feet are not so large as in many of the birds of prey, and are not very well adapted for seizing or retaining prey. As, however, the Lammergeyer is not a bird of chase, like the eagle and falcon, but obtains its food by striking chamois, goats, and other animals over the precipices near which they are standing, the powerful claws of the eagle would be of little service to it. The claws are therefore comparatively feeble, short, and are covered with feathers down to the toes.

The color of the Lammergeyer is a gray-brown, curiously dashed with white upon the upper surface, in consequence of a white streak which runs along the centre of each feather. The under surface of the body, together with the neck, are nearly white, tinged with a wash

\* Naturalists are now well agreed that the Thrushes are naturally entitled to the first rank among birds, and that the birds of prey rank near the Pigeons and the Gallinaceous birds. The text of Mr. Wood being almost wholly popular, not involving any considerable technicality, we do not feel authorized to change its arrangement. There will, however, be tables of the most recent classification at the end of the volume.—*Editor.*

of reddish-brown, which is variable in depth in different individuals. In the earlier stages of its existence, the Lammergeyer is of a much darker hue, and the white dashes upon the back are not so purely white nor so clearly defined. The head and neck are dark-brown, and the brown hue of the back is of so deep a tint that the young bird has been classed as a separate species, under the title of *Vultur niger*, or Black Vulture.

Like the true Vultures, the Lammergeyer is invaluable as a scavenger, and if an animal be killed and left exposed to view, the bird is sure to find out the spot in a very short time, and to make its appearance as if called by some magic spell from the empty air. But as there is not a sufficiency of dead animals for the food of this hungry and powerful bird, it makes prey of lambs, kids, hares, and such like animals, nor disdains to feed even on rats, mice, and other small quadrupeds. With the larger animals, such as the chamois, the Lammergeyer cannot successfully cope on level ground, but taking advantage of its wings, it hurls itself suddenly against some devoted animal which is standing heedlessly near a precipice, and by the force of its blow strikes the poor creature into the depths below, whither it is immediately followed by its destroyer. Even mankind is said to be endangered by these sudden attacks of a hungry Lammergeyer, and more than one chamois-hunter is reported as having been killed by an assault from one of these birds.

The Lamb-vulture, as is the import of its name, does not restrict itself solely to the snowy mountains on which it takes up its chief residence, but often makes considerable journeys into the cultivated portion of the country, for the sake of picking up the lambs and other valley-inhabiting animals.

The general aspect of the Lammergeyer is more like that of an eagle than a Vulture, but its carriage and demeanor are devoid of that fearless, regal grandeur which is so characteristic of the eagles of all lands. When flying, however, its appearance is truly magnificent, and on account of its great sweep of wing and powerful flight, the size of the Lammergeyer has been greatly exaggerated. Indeed, it is probable that the celebrated roc, which plays so important a part in the adventures of Sindbad the Sailor, and in other portions of the Arabian Nights, is merely the Lammergeyer, viewed through the magnifying medium of Oriental exaggeration.

THE Family of Vultures (*Cathartidæ*) embraces four species in North America. Two distinct families are recognized among the birds of the world. The Old World Vultures form the second family. In South America is found the great typical bird of the race, the Condor. The Vultures of the Old World are regarded as being nearer the falcons in structure than those of the other family; they also have somewhat similar habits. They lack the courage and strength of the falcons, and rarely attack anything capable of vigorous resistance.

The Vultures are naturally carrion-feeders. Their feet, though large, are not adapted to clasp and hold with the vise-like grip of the other birds of prey. Their heads and a good portion of their necks are bare of feathers. It is reasonable to assume that this is a wise provision of nature; as such parts are certainly kept more cleanly than would be the case if the parts were feathered.

Vultures are not naturally gregarious, but when a carcass is scented multitudes of them are seen gathering from every point. Some species, however, breed in communities. Vultures have no voice, excepting when disturbed, then they emit a hissing sound.

This family is tropical in *habitat*, though some species range somewhat beyond; as in the case of the California and Turkey Vultures.

ON account of a curious fleshy appendage which decorates the base of the bill and the neighboring portions of the head, a small group of Vultures has been separated from the remaining species, and gathered into a family under the appropriate title of Sarcorhamphidæ, or Flesh-beaked Vulture. This family is but a small one, comprising the CONDOR, the King Vulture, and the well-known American Vultures, or Zopilotes.

Although not exceeding the Lammergeyer in dimensions, the Condor has been long



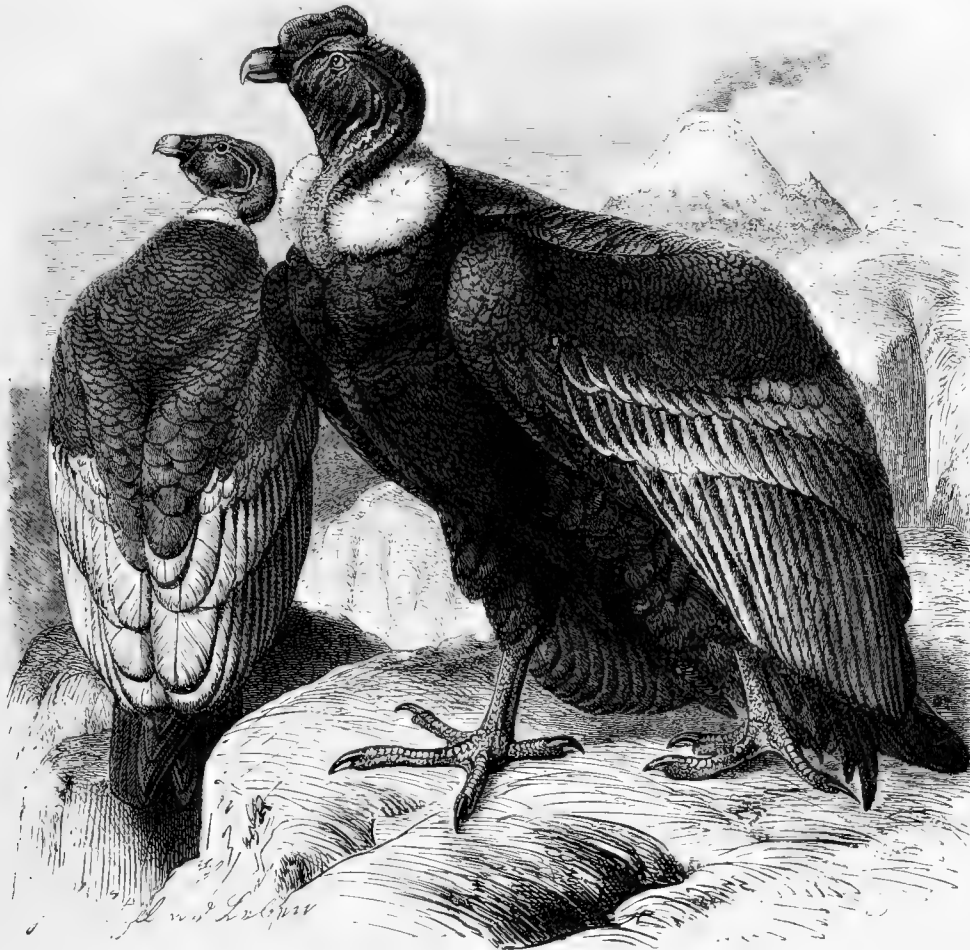
SELMAR HESS, PUBLISHER, N. Y.

LAMMERGEYER.



celebrated as a Goliath among birds, the expanse of its wings being set down at eighteen or twenty feet, and its strength exaggerated in the same proportion. In reality, the expanse of a large Condor's wing will very seldom reach eleven feet, and the average extent is from eight to nine feet. In one specimen, where the measurement of the extended wings was only eight feet one inch, the longest quill feather of the wings was two feet two inches in length; the diameter of the body was nine inches, and the total length from the point of the beak to the extremity of the tail, was three feet two inches.

The general color of the Condor is a grayish-black, variable in depth and glossiness in different individuals. The upper wing coverts are marked with white, which take a grayer



CONDOR. *Sarcorhamphus gryphus*.

tint in the female, and the exterior edges of the secondaries are also white. The adult male bird may easily be distinguished by the amount of white upon the feathers, so that the wings are marked with a large white patch. Around the neck is set a beautifully white downy collar of soft feathers, which does not entirely inclose the neck, but leaves a small naked band in front. This featherless band is, however, so small, that it is not perceptible except by a close examination.

The crest of the male Condor is of considerable size, occupying the top of the head and extending over a fourth of the basal portion of the beak. The nostrils are intersected at the base of the beak, in a space which is created for them by means of the sudden sloping of the crest. Although the crest of the Condor presents an apparent analogy with the wattles of a turkey, it cannot be inflated at pleasure, as is the case with that bird, but is hard of substance and contains but few blood-vessels. As the Condor, when at rest, is in the habit of sinking its head upon its shoulders, and concealing the neck within the collar of white down

by which it is surrounded, the aspect of the bird is very curious, as it sits with its large hooked beak and projecting crest lying on the shoulders as if it possessed no neck at all.

There are several curious details in the internal structure of the Condor, among which may be mentioned the remarkable fact that its "gizzard" is furnished with longitudinal rows of horny spikes, which are probably intended to aid the creature in the more rapid comminution and digestion of its food.

The Condor is an inhabitant of the mountain chain of the Andes, and is celebrated not only for its strength and dimensions, but for its love of elevated localities. When enjoying the unrestricted advantages of its native home, it is seldom found lower than the line of perpetual snow, and only seems to seek lower and more temperate regions when driven by hunger to make a raid on the flocks or the wild quadrupeds of its native country. Although preferring carrion to the flesh of recently killed animals, the Condor is a terrible pest to the cattle keeper, for it will frequently make a united attack upon a cow or a bull, and by dint of constant worrying, force the poor beast to succumb to its winged pursuers. Two of these birds will attack a vicugna, a deer, or even the formidable puma, and as they direct their assaults chiefly upon the eyes, they soon succeed in blinding their prey, who rapidly falls under the terrible blows which are delivered by the beaks of its assailants.

The strength of the Condor is really prodigious, a powerful man being no match even for a wounded and tethered bird; and its tenacity of life is such, that a combat of endurance is nearly certain to end in favor of the Condor. Humboldt relates a curious anecdote of a Condor that resisted a series of efforts that were made in order to deprive it of life. In vain was it strangled for many minutes, for as soon as the noose was removed from its neck the bird walked about as composedly as if nothing had happened to it. At last a pistol was brought to bear upon it, and three bullets were fired from a distance of four paces, all fairly entering the body. A fourth ball struck against the leg bone and rebounded without doing much apparent harm. In spite of all the wounds which it had received, this poor bird survived for nearly half an hour.

The Indians are possessed with a strange prejudice against the Condor, and whenever they catch one of these birds alive, they put it to death through the medium of the most cruel tortures. Their mode of capturing so powerful a bird is worthy of notice, as it is based upon the habits of the Condor. A cow or a horse is killed, and the body thrown negligently on one side, so as to be exposed to the open air. In a very short time the Condors begin to assemble, and soon are engaged in feeding voraciously upon the unexpected and welcome banquet. As soon, however, as they have gorged themselves to the full, the Indians dash in among them, armed with their lassos, and make easy captives of the finest birds. When they feel the noose around their necks, the Condors endeavor to eject the huge meal which they have swallowed, but are made hopeless prisoners before they can rid themselves of the enormous mass of food which they have contrived to pack into their interiors.

On account of the exquisitely delicate scent of this bird the native Mexicans have distinguished it by a name which bears allusion to its keen sense of smell, and has been modified into the more euphonious word Condor.

Although the Condor is not a very social bird, it is generally found in little assemblages of five or six in number, which are seen either seated motionless upon the summits of the rocks, their outlines cutting sharply against the sky, or sailing slowly in circles at an enormous elevation above the ground. The flight of these birds is peculiarly grand and beautiful, and seems to be achieved by the movement of the head and neck rather than by that of the wings. Mr. Darwin gives the following animated description of the flight of the Condor.

"Except when rising from the ground, I do not recollect ever having seen one of these birds flap its wings. Near Lima I watched several for nearly half an hour without once taking off my eyes. They moved in large curves, sweeping in circles, descending and ascending without once flapping. As they glided close over my head, I intently watched from an oblique position the outlines of the separate and terminal feathers of the wing: if there had been the least vibratory movement these would have blended together; but they were seen distinctly against the blue sky. The head and neck were moved frequently, and apparently

with force, and it appeared as if the extended wings formed the fulcrum on which the movements of the neck, body, and tail acted. If the bird wished to descend, the wings were for a moment collapsed, and then when again expanded with an altered inclination, the momentum gained by the rapid descent seemed to urge the bird upwards with the even and steady movements of a paper kite.

“In case of any bird soaring, its motion must be sufficiently rapid, so that the action of the inclined surface of its body on the atmosphere may counterbalance its gravity. The force to keep up the momentum of a body moving in a horizontal plane in that fluid (in which there is so little friction) cannot be great, and this force is all that is wanted. The movement of the neck and body of the Condor we must suppose sufficient for this. However this may be, it is truly wonderful and beautiful to see so great a bird, hour after hour, without any apparent exertion, wheeling and gliding over mountain and river.”

The Condor deposits its eggs, for it makes no nest whatever, upon a bare shelf of some lofty rock. The eggs are two in number, grayish-white in color, and are laid about November or December. When the young Condor is hatched it is nearly naked, but is furnished with a scanty covering of down, which in a short time becomes very plentiful, enveloping the body in a complete vestment of soft, black plumage. The deep black gray of the adult bird is not attained until a lapse of three years, the color of the plumage being a yellowish-brown.

The California Condor (*Pseudogryphus californianus*) nearly rivals in size the great South American Condor. Its length is from forty-five to fifty inches, and its wing extent from nine to ten feet. This is comparatively a new bird. Like many others, it has been brought to notice since the settlement of California. Though not at all uncommon, it is a rare bird in collections. It seems to be confined to the warmer portions of California. Dr. Newberry, of Columbia College, saw much of this bird while engaged in the geological survey of that region. He says: “It was to me a pleasant portion of every day’s experience in my march through Sacramento Valley, to watch the graceful evolutions of this bird. In its colors the combination was a pleasing one, while its flight was easy and effortless beyond that of any other bird. Though a common bird in this region, I found it much more shy and difficult to shoot than its associate, the turkey buzzard.”

This vulture possesses immense muscular powers. Dr. Heerman states that four of them dragged the body of a young grizzly bear, that weighed over an hundred pounds, the distance of two hundred yards. Their senses of smell and sight are very acute, especially the latter; and when searching for prey they soar to an immense height. If they chance to see a wounded animal, they chase it until it sinks with exhaustion, when they commence to feed even before life is extinct.

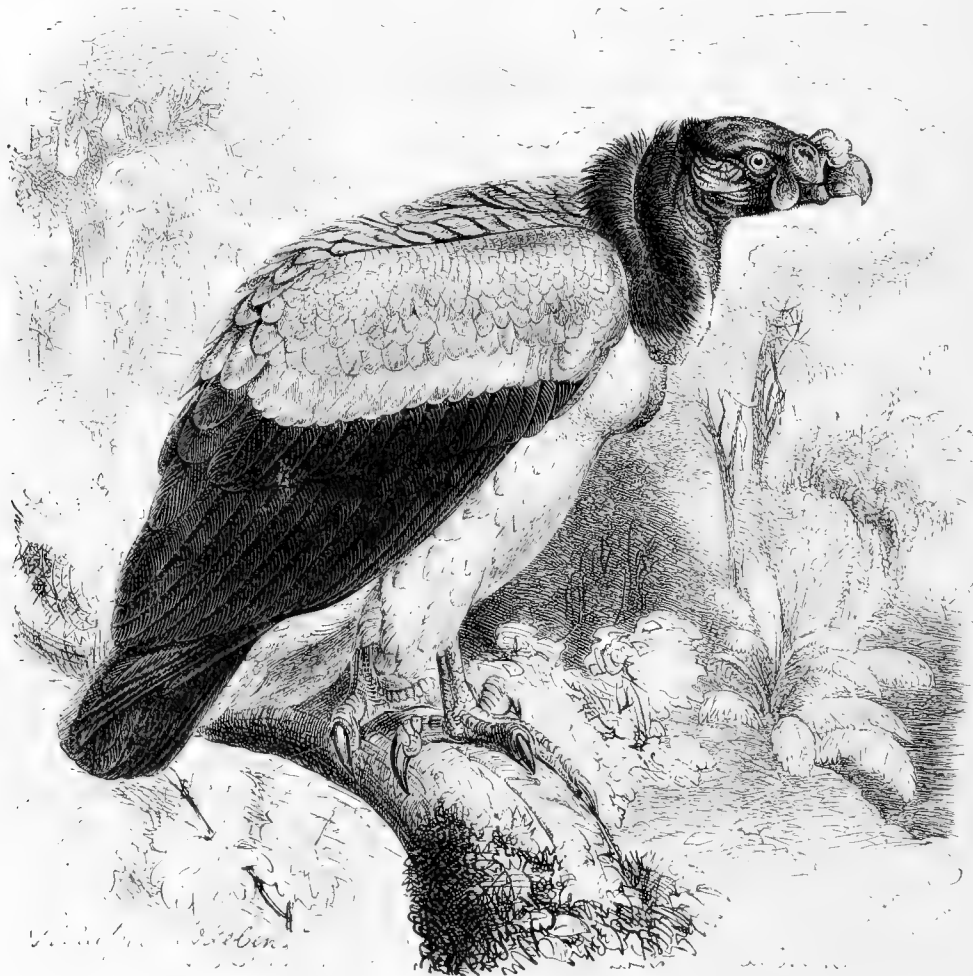
Their flight is slow, steady, and exceedingly graceful; they glide along with little or no perceptible motion of the wings, the tips of which are curved upwards in flying, like those of the turkey buzzard. The nest is of a few loose sticks, generally in the crevice of a rock. Observers of reliability assert that they sight their prey while soaring at considerable height.

THE KING VULTURE has gained its regal title from a supposition which is prevalent among the natives of the country which it inhabits, that it wields royal sway over the aura, or zopilote Vultures, and that the latter birds will not venture to touch a dead carcass until the King Vulture has taken his share. There is some truth for this supposition, for the King Vulture will not permit any other bird to begin its meal until his own hunger is satisfied. The same habit may be seen in many other creatures, the more powerful lording it over the weaker, and leaving them only the remains of the feast instead of permitting them to partake of it on equal terms. But if the King Vulture should not happen to be present when the dead animal has reached a state of decomposition which renders it palatable to vulturine tastes, the subject Vultures would pay but little regard to the privileges of their absent monarch, and would leave him but a slight prospect of getting a meal on the remains of the feast.

Waterton, who often mentions this species in his interesting works, gives several curious instances of the sway which the King Vulture exercises over the inferior birds. “When I had done with the carcass of the large snake, it was conveyed into the forest, as I expected that it

would attract the king of the Vultures, as soon as time should have rendered it sufficiently savory. In a few days it sent forth the odor which a carcase should send forth, and about twenty of the common Vultures came and perched on the neighboring trees. The king of the Vultures came too, and I observed that none of the common ones seemed inclined to begin breakfast until his majesty had finished. When he had consumed as much snake as nature informed him would do him good, he retired to the top of a high mora-tree, and then all the common Vultures fell to and made a hearty meal."

The King Vulture is a native of tropical America, and is most common near the equator, though it is found as far as the thirtieth degree of south latitude, and the thirty-second of north latitude. Peru, Brazil, Guiana, Paraguay, and Mexico are the chosen residences of this



KING VULTURE.—*Sarcorhamphus papa*.

fine species. It is a forest-loving bird, caring nothing for the lofty home of the condor, but taking up its residence upon the low and heavily-wooded regions, in close proximity to swampy and marshy places, where it is most likely to find abundance of dead and putrefying animal substances. Its nest, or rather the spot on which it deposits its eggs, is within the hollow of some decaying tree. The eggs are two in number.

In its adult state the King Vulture is a most gorgeously decorated bird, though its general aspect and the whole expression of its demeanor are rather repulsive than otherwise. The greater part of the feathers upon the back are of a beautiful satiny white, tinged more or less deeply with fawn, and the abdomen is of a pure white. On account of its color, the bird is termed the White Crow by the Spaniards of Paraguay. The long pinions of the wing and tail are deep black, and the base of the neck is surrounded with a thick ruff or collar of downy gray feathers.



The most brilliant tints are, however, those of the naked skin of the head and neck. "The throat and back of the neck," says Waterton, "are of a fine lemon color; both sides of the neck, from the ears downwards, of a rich scarlet; behind the corrugated part there is a white spot. The crown of the head is scarlet, betwixt the lower mandible and the eye, and close by the ear, there is a part which has a fine silvery-blue appearance. Just above the white spot a portion of the skin is blue, and the rest scarlet; the skin which juts out behind the neck, and appears like an oblong caruncle, is blue in part, and part orange. The bill is orange and black, the caruncles on the forehead orange, and the cere orange, the orbits scarlet, and the irides white."

These gorgeous tints belong only to the adult bird of four years old, and in the previous years of its life the colors are very obscure. In the first year, for example, the general color is deep blue-gray, the abdomen white, and the crest hardly distinguishable either for its color or its size. In the second year of its age the plumage of the bird is nearly black, diversified with white spots, and the naked portions of the head and neck are violet-black, interspersed with a few dashes of yellow. The third year gives the bird a very near approach to the beautiful satin fawn of the adult plumage, the back being nearly of the same hue as that of the four-year old bird, but marked with many of the blue-black feathers of the second year. When full grown, the King Vulture is about the size of an ordinary goose.

ALL the Sarcorhamphidæ are natives of America, some of them, such as the condor and the king vulture, being comparatively scarce, while others are so common that they swarm like sparrows in our streets. One of the commonest of these useful but repulsive birds is the BLACK VULTURE, ZOPILOTE, or URUBU, which together with the turkey buzzard and the Californian Vulture are placed in one genus, termed, characteristically of their habits, Catharista, or Cleanser.

The Black Vulture bears so close a resemblance to the turkey buzzard that it has often been confounded with that bird by superficial observers. It may, however, be readily distinguished by the shape of the feathers round its neck, which in the turkey buzzard form a circular ring completely round the throat, while in the Black Vulture they descend from the back of the head towards the throat in a sloping direction. The shape of the bill is more slender, and the nostrils not so rounded as in the turkey buzzard. The general color of the Black Vulture is a dull black; the primaries are, however, rather white on the inside, and their shafts are also white. The head and part of the neck are devoid of feathers, and covered with a black wrinkled skin sparsely furnished with short scattered black hairs in front, and down behind. The throat has a wash of ochereous yellow. The length of the bird is rather more than two feet, and the expanse of its wings is about four feet four inches.

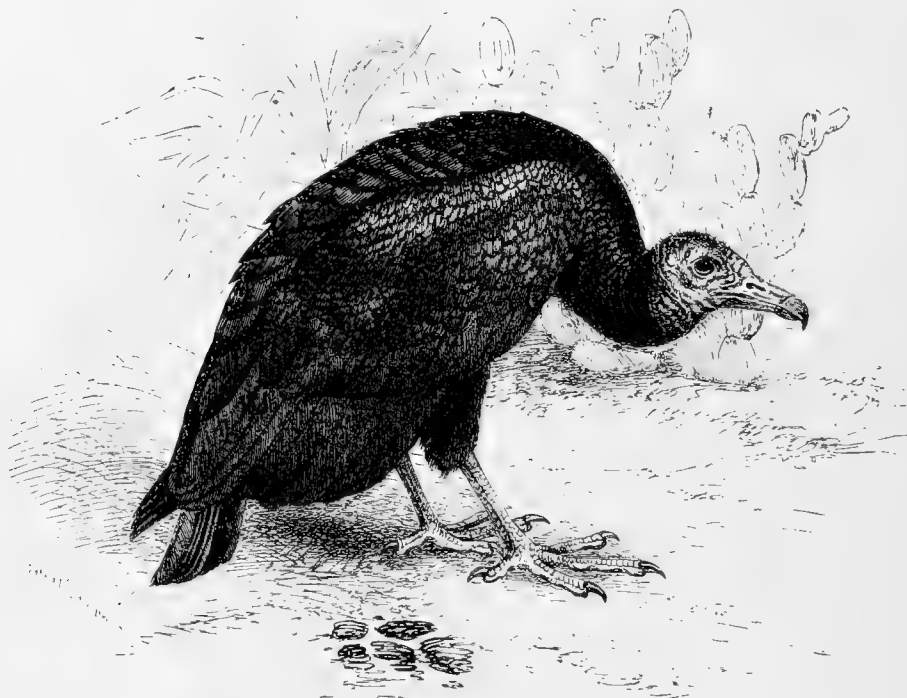
It is a high-flying bird, sweeping through the air with a beautifully easy flight, and often accompanied by the Mississippi kite, which seems to be drawn towards the Zopilote by some common feeling. After the bird has been gorging itself with the putrid meat which it so loves, it gives forth a most horrible stench. But after it has fasted for some time, the unpleasant odor nearly vanishes; and even when the body of the bird is laid open, the only scent which it exhales is a rather strong musky perfume.

The predaceous birds are like the predaceous beasts, possessed of most powerful appetites, being capable of eating and digesting an amount of food which is perfectly astonishing. As, however, they cannot hope for a constant supply of nourishment, they are gifted with the capability of enduring hunger for a very long time without appearing to suffer very severely from their protracted fast. When in search of food, the Zopilote ascends to a vast height in the air, rising indeed to so great an elevation, that it can hardly be distinguished as a black speck, even when the attention of a spectator is drawn towards the bird, and is entirely invisible to those who are not intent upon distinguishing the gnat-like object as it floats about in the upper air.

Every one of these birds is, notwithstanding the enormous height at which it is poised, intently watching the ground in hopes of marking out some dying animal on which it may swoop, and hasten its death by the injuries which it inflicts upon the unresisting creature.

The movements of the hunters are carefully watched by the Black Vulture, which follows their course with eagerness, knowing how often they may wound an animal which may be able to escape them for a time, but is sure at last to fall a prey to its relentless winged pursuer. Oftentimes the hunters will kill a bison or a deer merely for the sake of the skin, the marrow-bones, or the hump, leaving the remainder on the ground for the benefit of the Zopilotes and the wolves, who soon strip the bones of every particle of the flesh.

According to Don Ulloa, the Zopilotes deserve the gratitude of mankind for the part which they play in destroying the eggs of the alligator, and assisting in keeping down the number of this prolific and dangerous reptile. During the summer, the Zopilote watches the female alligator as she comes to the sandy river-shore for the purpose of depositing her eggs, and



BLACK VULTURE.—*Catharista atrata*.

permits the reptile to complete her task without any interruption. Scarcely, however, is the alligator fairly out of the way, than the Zopilote issues from its place of concealment, and throwing the sand aside with its bill, feet and wings, disinters the eggs, breaks the shells, and swallows their contents.

Of the voracity of these birds, Wilson gives the following graphic account:—

“A horse had dropped down in the street in convulsions: and dying, it was dragged out of town and skinned. The ground for a hundred yards around it was black with carrion crows; many sat on the tops of sheds, fences, and houses within sight; sixty or eighty on the opposite side of a small river. I counted at one time two hundred and thirty-seven, and I believe there were more, besides several in the air, over my head and at a distance. I ventured cautiously within thirty yards of the carcase, where three or four dogs and twenty or thirty Vultures were busy tearing and devouring.

“Seeing them take no notice, I ventured nearer, till I was within ten yards, and sat down on the bank. Still they paid little attention to me. The dogs, being sometimes accidentally flapped by the wings of the Vultures, would growl and snap at them, which would occasion them to spring up for a moment, but they immediately gathered in again. I remarked the Vultures frequently attack each other, fighting with their claws or heels, striking like a cock, with open wings, and fixing their claws into each other’s heads. The females, and I believe the males likewise, made a hissing sound with open mouth, exactly resembling that produced

by thrusting a red-hot poker into water; and frequently a snuffling, like a dog clearing his nostrils, as I suppose they were theirs. On observing that they did not heed me, I stole so close that my feet were within one yard of the horse's legs, and again sat down. They all slid aloof a few feet; but seeing me quiet, they soon returned as before. As they were often disturbed by the dogs, I ordered the latter home; my voice gave no alarm to the Vultures.

“As soon as the dogs departed, the Vultures crowded in such numbers that I counted at one time thirty-seven on and around the carcass, with several within; so that scarcely an inch of it was visible. Sometimes one would come out with a large piece of the intestines, which in a moment was surrounded by several others, who tore it to fragments, and it soon disappeared. They kept up the hissing occasionally. Some of them, having their legs and heads covered with blood, presented a most savage aspect. Still as the dogs advanced, I would order them away, which seemed to gratify the Vultures; and one would pursue another to within a foot or two of the spot where I was sitting. Sometimes I observed them stretching their necks along the ground, as if to press the food downwards.”

The Zopilote is rather a familiar bird, and may often be seen marching about the streets in the towns and villages of the Southern States, where it might be easily mistaken for a domestic turkey by a new arriver in the country. By the inhabitants it is popularly called the carrion crow, a confusion of nomenclature which has sometimes led to strange misapprehension of corvine habits. As the birds, although personally disliked, are so useful to the community, they are protected by common consent, and permitted to roam the streets or prowl among the houses at will.

The Carrion Crow (*Catharista atrata*), so called, as well as Black Vulture, is a coal black bird of about the size of the Turkey Buzzard. Only one species of this genus is known, and this is confined to the tropical portions of North America. It is found most commonly on the Atlantic sea-board. On the Pacific side it is not known. In the West India Islands this bird is quite common, having the same habits as the Turkey Buzzard.

In Charleston, S. C., and Savannah, the Carrion Crow is very common, associated with the Turkey Buzzard. Both are well known for their beneficial habits as scavengers.

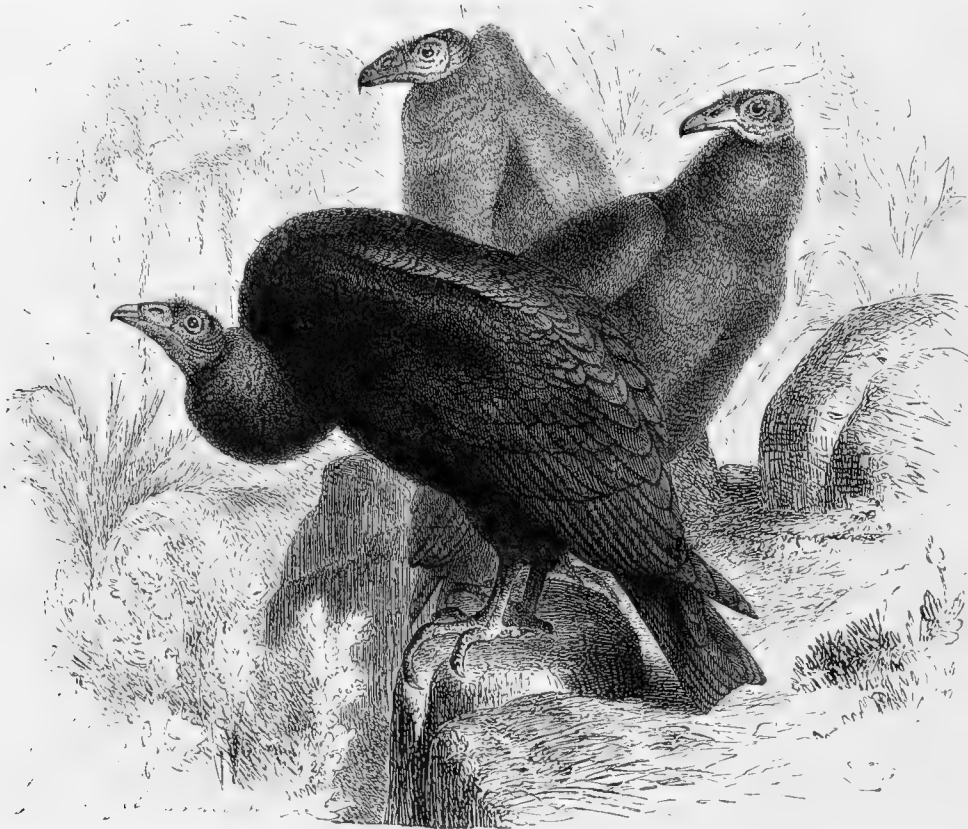
ANOTHER species, of the genus *Cathartes*, is the TURKEY BUZZARD, more rightly termed the CARRION VULTURE. Its name of Turkey Buzzard is earned from the strange resemblance which a Carrion Vulture bears to a turkey, as it walks slowly and with a dignified air, stretching its long bare neck, and exhibiting the fleshy appendages which bear some likeness to the wattles of the turkey. Indeed, instances are not wanting, where recent visitors to the country have actually shot these birds, thinking that they had succeeded in killing a veritable edible turkey. This bird is chiefly found in North America, but is also an inhabitant of Jamaica, where it is popularly known as the John crow.

According to Waterton and Darwin, the Turkey Buzzard is not so sociable a bird as the zopilote; for although a little flock of twenty or thirty may be seen together in a corn-field where the refuse stubble has been burned, engaged in feeding on the dead mice, lizards, moles, and other creatures which have perished in the conflagration, each bird comes separately and departs separately, no two individuals having any connection with each other.

When gorged with food, an event which always takes place whenever there is the least opportunity, the Turkey Buzzard leaves reluctantly the scene of the banquet, and gaining with some difficulty a branch of a neighboring tree, sits heavy and listless, its head sunk upon its breast, and its wings hanging half open, as if the bird were too lazy even to keep those members closed. The object of this curious attitude seems to be, that the bird may gain as much air as possible, for these feathered creatures are singularly susceptible to atmospheric influence. It is not improbable that this air-bath may aid the bird in digesting the food which it has so ravenously consumed, as well as to cleanse its feathers from the fetid animal substance which cannot but cling to them after their strong-scented repasts. While engaged in eating they are not at all particular about soiling their feathers, for they will often tear a hole in the skin of a dead animal, and deliberately walk into its interior, for the purpose of getting at some favorite

morsel. By this mode of proceeding they soon clear away the softer substance, leaving only the bare ribs standing out, in the midst of which the Vulture continues to move about like a bird in a cage.

Between the Turkey Buzzard and the zopilote there is a certain external resemblance; but these two birds are quite distinct in their movements as well as in their habits. The Turkey Buzzard does not even walk or fly in the same manner as the zopilote. The latter bird, when walking, is very awkward, and hops along in an awkward and lazy manner, while the former moves smoothly forward, even when oppressed with a surfeit of food. In the flight the difference is even more conspicuous: the Turkey Buzzard very seldom flaps its wings, but sails smoothly through the air, its wings being extended almost horizontally; the zopilote, on the contrary, flaps its wings six or seven times in succession, and then sails on for a few hundred



TURKEY BUZZARD.—*Cathartes aura*.

yards with its wings raised at a decided angle with the body. The two species never company with each other, nor is the Turkey Buzzard found so familiarly associated with man and his habitation as its darker relation.

The nest of the Turkey Buzzard is a very inartistical affair, consisting merely of some suitable hollow tree or decayed log, in which there may be a depression of sufficient depth to contain the eggs. In this simple cradle the female deposits from two to four eggs, which are of a dull cream-white, blotched with irregular chocolate splashes, which seem to congregate towards the largest end. The young birds are covered with a plentiful supply of white down, and look clean and inviting to the touch. Their motto may, however, be similar to that of the Scotch thistle, "Nemo me impune lacesserit," for at the slightest aggressive touch they will disgorge over the offender the putrid animal substances with which they have been fed, and work sad woe to his hands and garments. May is usually the month in which the young Turkey Buzzards are hatched.

The adult Turkey Buzzard is rather a large bird, measuring two feet six inches in length, and six feet ten inches across the expanded wings. The weight is about five pounds. The

general color of the plumage is black, mingled with brown, the secondaries being slightly tipped with white, and a few of the coverts edged with the same tint. On the neck, the back, the shoulders, and the scapularies, the black hue is shot with bronze, green and purple. Beneath the thick plumage is a light coating of soft white down, which apparently serves to preserve the creature at a proper temperature. The bare skin of the neck is not as wrinkled as in the zopilote, and the feathers make a complete ring round the neck. There is but little difference in the plumage of the two sexes, but the bill of the male is pure white.

The Turkey Buzzard has a larger range than the other species. Its true *habitat* seems to be near the tropical line, but in summer it extends to the British Provinces of North America. It rarely, however, ventures eastward into the New England States.



COMMON ARABIAN VULTURE.—*Vultur monachus*.

Burrough's Vulture is the smallest of the tribe. Its *habitat* is on the Mexican Gulf, and Pacific side, and Lower California.

WE now arrive at the true Vultures, the first of which is the COMMON ARABIAN VULTURE, a bird which is spread over a large portion of the globe, being found in various parts of Europe, Asia, and Africa.

It is a large bird, measuring nearly four feet in length, and the expansion of its wings being proportionately wide. The general color of this species is a chocolate brown, the naked portions of the neck and head are of a bluish hue, and it is specially notable for a tuft of long soft feathers which spring from the insertion of the wings. In spite of its large size and great muscular powers, the Arabian Vulture is not a dangerous neighbor even to the farmer, for unless it is pressed by severe hunger, it seems rather to have a dread of living animals, and

contents itself by feeding on any carrion which may come in its way. Sometimes, however, after a protracted fast, its fears are overruled by its hunger, and the bird makes a raid upon the sheepfolds or the goat-flocks, in the hope of carrying off a tender lamb or kid. In these illegal excursions the bird often pays the penalty of its transgression with its life, being too hungry to be watchful, and easily shot. Hares and other small animals also fall victims to the starving Vulture, and it is said that even deer are slain by the united efforts of a pair of these birds.



GROUP OF TRUE VULTURES.

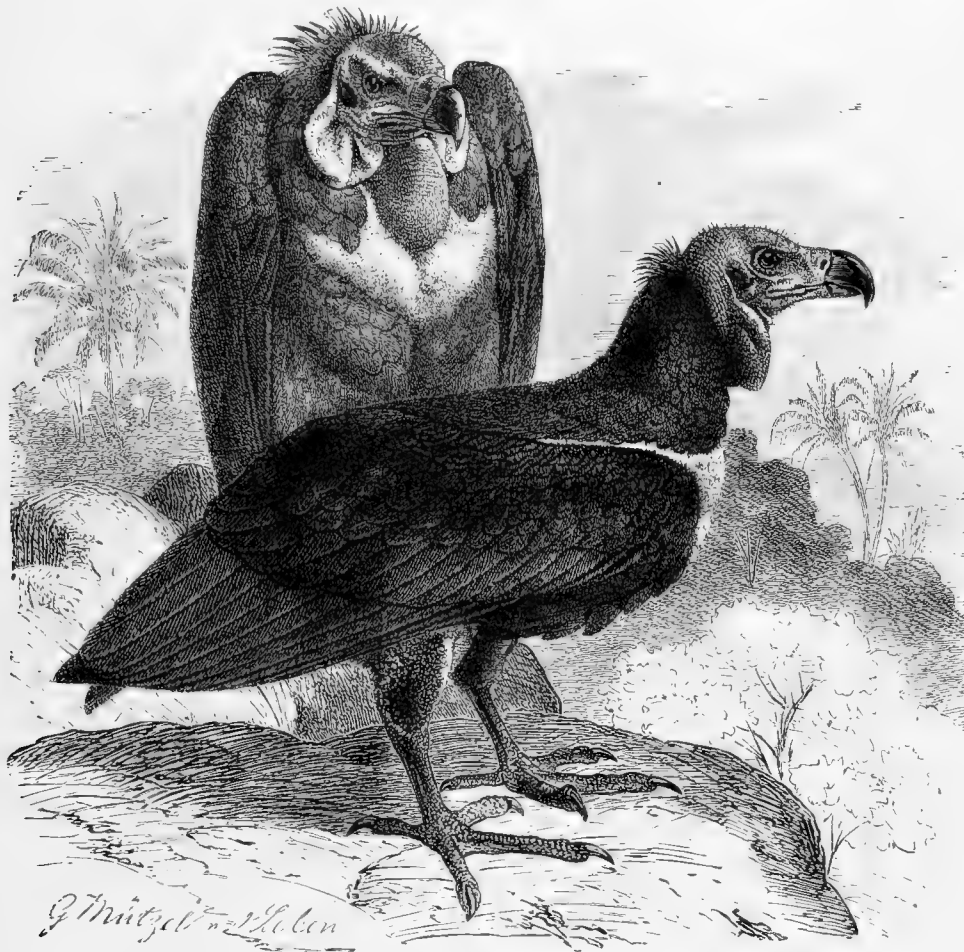
The usual haunts of this species are situated on the mountain tops, and the bird does not descend into the valleys except when pressed by hunger. The specific title of *monachus* or Monk has been given to this species on account of the hood-like ruff around its neck, which is thought to bear a fanciful resemblance to the hood of a monk.

THE name of SOCIABLE VULTURE, which has been bestowed upon the bird now to be described, is supposed to be founded upon an error of observation.

Le Vaillant, who has given a somewhat detailed description of this species, found several of the nests in close proximity, and supposed from that circumstance that this Vulture was a gregarious bird. It seems, however, from more recent observation, that the proximity of these nests was merely accidental, and that although several nests may have been found near each other, they were not all inhabited simultaneously. It is the habit of many birds to build a new nest close to a deserted one, and such seems to have been the case with the Sociable Vulture. In their character they are anything but social, for it is but seldom that more than three or four of these birds can be seen together, and even in that case they are drawn together

not by any feeling of community, but by the attraction of a dead animal on which they are glad to feed, whether in company or alone.

The Sociable Vulture is a handsome and a large bird. Its length is about four feet, and the measurement of its expanded wings is rather more than ten feet. The general color of its feathers is black-brown, from which circumstance it is called by the colonists the Black Carrion Bird. The ruff is nearly black, and the feathers of the chest and abdomen are remarkable for their length and narrowness. The naked parts of the head and neck are red, and the skin of the sides of the face droops in folds down the neck. This bird is a native of Southern



PONDICHERRY VULTURE.—*Vultur calvus*.

Africa, and by the Hottentots is called T'Ghaip, the "T" representing one of those strange clicking sounds which play so important a part in the Hottentot language.

A FINE example of the genus *Otogyps* is also found in the PONDICHERRY VULTURE, a bird which, as its name implies, is an inhabitant of India.

This is not quite so large a bird as the preceding, its length scarcely exceeding three feet. The generic term, *Otogyps*, which is given to this species and to the sociable Vultures, is of Greek origin, denoting Eared Vulture, and alludes to the folds of skin which arise below the ears and fall for some inches along the sides of the neck. The word "calvus" is Latin, and signifies bald, in allusion to the featherless condition of the flat and broad head of the Pondicherry Vulture. It is a tolerably common bird, but is never seen in great numbers together, as it is not at all sociable in its habits, and associates only in pairs.

The general color of the plumage is a blackish-brown, the naked portions of the head and neck are flesh-colored, and the chest is remarkable for a bunch or tuft of white downy feathers, which marks the position of the crop.

THE FULVOUS, or GRIFFIN VULTURE, is one of the most familiar of these useful birds, being spread widely over nearly the whole of the Old World, and found in very many portions of Europe, Asia, and Africa.

It is one of the large Vultures, measuring four feet in length, and its expanse of wing being exceedingly wide. Like many of its relations, it is a high-roving bird, loving to rise out of the ken of ordinary eyes, and from that vast elevation to view the panorama which lies beneath its gaze; not, however, for the purpose of admiring the beauty of the prospect, but for the more sensual object of seeking for food. Whenever it has discovered a dead or dying animal, the Vulture takes its stand on some adjoining tree or rock, and there patiently awaits



FULVOUS, OR GRIFFIN VULTURE.—*Gyps fulvus*.

the time when decomposition shall render the skin sufficiently soft to permit the entrance of the eager beak. As soon as its olfactory organs tell of that desired change, the Vulture descends upon its prey, and will not retire until it is so gorged with food that it can hardly stir. If it be suddenly attacked while in this condition, it can easily be overtaken and killed; but if a pause of a few minutes only be allowed, the bird ejects by a spasmodic effort the load of food which it has taken into its interior, and is then ready for flight.

A controversy has long raged concerning the manner in which the Vulture obtains knowledge of the presence of food. Some naturalists assert that the wonderful powers of food-finding which are possessed by the Vulture are owing wholly to the eyes, while others as warmly attribute to the nose this curious capability. Others again, desirous of steering a middle course, believe that the eyes and the nostrils give equal aid in this never-ending duty of finding food, and many experiments have been made with a view to extracting the real



truth of the matter. The following account has been kindly transmitted to me by Captain Drayson, who has already contributed much original information to the present work.

“Having shot an ourebi early in the morning, and when about three miles from home, I was not desirous of carrying the animal behind my saddle during the day’s shooting, and I therefore sought for some method of concealment by which to preserve the dead quarry from jackals and Vultures. An ant-bear’s hole offered a very convenient hiding-place, into which the buck was pushed, and the carcass was covered over with some grass cut for the purpose. As usual in South Africa, there were some Vultures wheeling round at an enormous height above the horizon; these I believed would soon come down and push aside the grass and tear off the most assailable parts of the buck. There was, however, no better means of protection, so I left the animal and rode away. When at about a quarter of a mile from the ant-bear’s hole, I thought that it might be interesting to watch how the Vultures would approach and commence operations, so I ‘off-saddled,’ and kept watch.

“After about half an hour, I saw a Vulture coming down from the sky, followed by two or three others. They came down to the spot where the buck had been killed, and flew past this. They then returned, and again overshot the mark. After circling several times within a radius of four hundred yards, they flew away. Other Vultures then came and performed similar manœuvres, but not one appeared to know where the buck was concealed. I then rode off to a greater distance, but the same results occurred.

“In the evening I returned for my buck, which, however, was totally useless in consequence of the intense heat of the sun, but which had not been touched by the Vultures.”

Whatever may be the general opinion of the scientific world upon this subject, I cannot but think that we shall not discern the true cause of this food-discovering power in the optic or nasal nerve, or indeed in any material structure whatever. It appears to be simply due to that wonderful intuitive teaching which we popularly call instinct, and which, if rightly examined, will most surely prove a key to many mysteries at present unsolved.

The color of the Fulvous Vulture is a yellowish-brown over the greater part of the body. The quill feathers of the tail and wings are nearly black, the ruff surrounding the base of the neck is composed of long and delicately white slender feathers, and the head and neck are sparingly clothed with short white down.

In its native state the Fulvous Vulture assumes some very curious attitudes, and has the power of altering the contour of its body so completely that it would hardly be recognized as the same bird. At one time it sits upon the branch of a tree in a heavy, indolent manner, its neck hidden in the ruff, and the head just projecting from the feathers. At another time it will be full of life and animation, pacing round the carcass of some animal, tugging furiously at the skin, and snapping fiercely at its companions if they should approach too closely. One remarkable attitude which it is fond of assuming is rather difficult to describe, but has so strange and weird-like an aspect, that it is deserving of mention. While sitting on the ground, the Vulture thrusts its legs well to the front, and instead of resting upon the feet, holds them up in the air and sustains the weight of its body upon the tail and ankle-bones. Thus supported, it seems quite at its ease, and reclines with half-spread wings, as if thoroughly enjoying its repose.

Like others of its tribe, the Fulvous Vulture, when satiated with food, will retire to a neighboring tree-branch, and sit listlessly with hanging wings, as if to rid its feathers of the putrid animal substance on which it has been feeding. It is very probable that the bird may receive great aid from the yellow feather-dust which is so copiously poured from the short and open quills that are found so abundantly upon this and other similar birds, and that by means of quiet repose, aided by the fresh air and a few hearty shakes, the bird may be able to throw off the powder and the putrefaction together.

THE ALPINE, OR EGYPTIAN VULTURE, is, as its name imports, an inhabitant of Egypt and Southern Europe. It is also found in many parts of Asia.

The general color of the adult bird is nearly white, with the exception of the quill feathers of the wing, which are dark brown. The face, bill, and legs are bright yellow, so that the

aspect of the bird is sufficiently curious. The sexes are clothed alike when adult. On account of the color of its plumage, the Egyptian Vulture is popularly termed the WHITE CROW by the Dutch colonists, and *AKBOBAS*, or White Father, by the Turks. It is also familiarly known by the name of PHARAOH'S CHICKEN, because it is so frequently represented in the hieroglyphical inscriptions of Egypt. When young, the color of its plumage is a chocolate brown, the neck and shoulders are covered with gray-tipped feathers, and the beak and feet are a very dull ochry yellow. The white plumage of the adult state is not attained until the bird has completed its third year.

As is the case with the Vultures in general, the Egyptian Vulture is protected from injury



EGYPTIAN VULTURE.—*Neophron perenopterus*.

by the strictest laws, a heavy penalty being laid upon any one who should wilfully destroy one of these useful birds. Secure under its human protection, the bird walks fearlessly about the streets of its native land, perches upon the houses, and, in common with the pariah dogs, soon clears away any refuse substances that are thrown into the open streets in those evil-smelling and undrained localities. This bird will eat almost anything which is not too hard for its beak, and renders great service to the husbandman by devouring myriads of lizards, rats, and mice, which would render all cultivation useless were not their numbers kept within limits by the exertion of this useful Vulture. It has been also seen to feed on the nara, a rough, water-bearing melon, in common with cats, leopards, mice, ostriches, and many other creatures. The eggs of the ostrich are said to be a favorite food with the Egyptian Vulture, who is unable to break their strong shells with his beak, but attains

his object by carrying a great pebble into the air, and letting it drop upon the eggs.

The wings of this species are extremely long in proportion to the size of the bird, and the lofty soaring flight is peculiarly graceful. It is but a small bird in comparison with many of those which have already been mentioned, being not much larger than the common rook of Europe. The nest of the Egyptian Vulture is made upon the shelf or in the cleft of a lofty rock, and the gray-white eggs are three or four in number. It is a curious fact, that during the season of reproduction the male bird slightly changes his aspect, the yellow bill becoming orange, and retaining that tint until the breeding season is over. Like many rapacious animals and birds, the Egyptian Vulture does not disdain to feed on insects, and has been observed in the act of following a ploughman along his furrows, picking up the worms and grubs after the fashion of the common rook.

## EAGLES.

NEXT in order to the vultures, are placed the splendid birds which are so familiar to us under the general title of EAGLES, and which form the first group of the great family Falconidæ, which includes the Eagles, falcons, and hawks. In common with the Vulturidæ, the whole of the Falconidæ are diurnal birds, and are therefore classed into one large order, termed Accipitres Diurni. All the Falconidæ possess powerful hooked beaks, not running straight for some distance, and then suddenly curved, as in the vultures, but nearly always bent in a curve from the very base. The head and neck are covered with plumage, and above the eyes the feathers are so thick and projecting, that they form a kind of roof or shade, under which the eye is situated and effectually sheltered from the bright rays of the noontide sun. There is often a tooth-like projection in the upper mandible, and the nostrils are placed within the cere. The females are always larger and more powerful than their mates, and the color of both sexes is very variable, according to the age of the individual.

The preceding characteristics are common to the entire family of Falconidæ, and the true Eagles may be distinguished by the following additional particulars: The beak is remarkably powerful, and for a short distance from the base is nearly straight; when the mouth is open, the edges of the upper mandible are seen to be slightly wavy, something like the cut edges of an indenture. The tail is of no very great length, but strong and rigid, and the legs are feathered down to the toes. Upwards of forty species have been placed in this genus; but as many of them present characteristics which admit of a further subdivision, they have been grouped together in certain sub-genera, for the purpose of attaining greater perspicuity.

The whole of the Falconidæ are eminently destructive birds, gaining their subsistence chiefly by the chase, seldom feeding on carrion except when pressed by hunger, or when the dead animal has only recently been killed. Herein they form a complete contrast to the vultures, whose usual food is putrifying carrion, and fresh meat the exception. Destructive though they may be, they are by no means cruel, neither do they inflict needless pain on the object of their pursuit. Like the lion and other carnivorous animals, they certainly carry out the great principle for which they were made, and which has already been mentioned in Volume I. They are not cruel birds, for although they deprive many birds and beasts of life, they effect their purpose with a single blow, sweeping down upon the doomed creature with such lightning velocity, and striking it so fiercely with the death-dealing talons, that in the generality of instances the victim must be absolutely unconscious even of danger, and be suddenly killed while busily engaged in its ordinary pursuits, without suffering the terrors of anticipation, or even a single pang of bodily pain. There certainly are some instances where an animal, such as a lamb, has been carried while still living to the Eagle's nest, and there slaughtered. But we must not judge the feelings of such a victim by our own, for the lamb can form no conception of the purpose for which it is conveyed through the air, and doubtlessly feels nothing but astonishment at the strange journey which it is making.

When the Eagle perceives a bird on the wing, the mere shock caused by the stroke of the Eagle's body is almost invariably sufficient to cause death, and the bird, should it be a large one, such as a swan, for example, falls dead upon the earth without even a wound. Smaller birds are carried off in the talons of their pursuers, and are killed by the grip of their tremendous claws, the Eagle in no case making use of its beak for the purpose of killing its prey. If the bird carries off a lamb or a hare, it grasps the body firmly with its claws, and then by a sudden exertion of its wonderful strength, drives the sharp talons deep into the vitals of its prey, and does not loosen its grasp until the breath of life has fled and all movement has ceased.

The structure by means of which the Eagle is enabled to use its talons with such terrible effect is equally beautiful and simple, and as it is closely connected with many of the habits of birds, deserves separate mention.

Many observant persons have been struck with the curious fact, that a bird can hold its

position upon a branch or perch even whilst sleeping, and that in many instances the slumbering bird retains its hold of the perch by a single foot, the other limb being drawn up and buried in the feathers. As this grasp of the perch is clearly an involuntary one, it is evidently independent of the mere will of the bird, and due to some peculiar formation. On removing the skin from the leg of any bird, and separating the muscles from each other, the structure in question is easily seen. The muscles which move the leg and foot, and the tendons which form the attachment of the muscles to the bones, are so arranged, that whenever the bird bends its leg the foot is forcibly closed, and is relaxed as soon as the leg is straightened. A bird is totally unable to keep its foot open when its leg is bent, as may be seen by watching a common fowl as it walks along, closing its toes as it lifts the foot from the ground, and spreading them as they come to the ground again. It will be seen, therefore, that when a bird falls asleep upon a branch, the legs are not only bent but pressed downwards by the weight of the body, so that the claws hold the perch with an involuntary grasp, which is necessarily tightened according to the depth of the bird's slumbers. When, therefore, an Eagle desires to drive his talons into the body of his prey, he needs only to sink downwards with his whole weight, and the forcible bending of the legs will effect the purpose without the necessity for any muscular exertion. Exertion, indeed, is never needlessly used by the Eagle, for it is very chary of exercising its great muscular powers, and unless roused by the sight of prey, or pressed to fly abroad in search of food, will sit upon a tree or a point of rock for hours together, as motionless as a stuffed figure.

Voracious though it be, and capable of gorging itself to the full like any vulture, the Eagle can sustain a prolonged fast from meat or drink; and on one occasion, when wounded, made voluntary abstinence for a fortnight before it would touch the food with which it was liberally provided.

THE first, and one of the finest, of these grand birds is the well-known GOLDEN EAGLE. This magnificent bird is spread over a large portion of the world, being found in various parts of Europe, Asia, Africa, and America. The color of this bird is a rich blackish-brown on the greater part of the body, the head and neck being covered with feathers of a rich golden red, which have earned for the bird its popular name. The legs and sides of the thighs are gray-brown, and the tail is a deep gray, diversified with several regular, dark-brown bars. The cere and the feet are yellow. In its immature state the plumage of the Golden Eagle is differently tinged, the whole of the feathers being reddish-brown, the legs and sides of the thighs nearly white, and the tail white for the first three-quarters of its length. So different an aspect does the immature bird present, that it has been often reckoned as a separate species, and named accordingly. It is a truly magnificent bird in point of size, for an adult female measures about three feet six inches in length, and the expanse of her wings is nine feet. The male is less by nearly six inches.

The Golden Eagle is observed to frequent certain favorite haunts, and to breed regularly in the same spot for a long series of years. Their nest is always made upon some elevated spot, generally upon a ledge of rock, and is most inartistically constructed of sticks, which are thrown apparently at random, and rudely arranged for the purpose of containing the eggs and young. A neighboring ledge of rock is generally reserved for a larder, where the parent Eagles store up the food which they bring from the plains below. The contents of this larder are generally of a most miscellaneous description, consisting of hares, partridges, and game of all kinds, lambs, rabbits, young pigs, fish, and other similar articles of food. An Eagle's nest might therefore be supposed to be an unpleasant neighbor to the farmers, but it is said that the birds respect the laws of hospitality, and, provided that they are left unmolested, will spare the flocks of their immediate neighbors, and forage for food at a considerable distance.

In hunting for their prey, the Eagle and his mate mutually assist each other. It may here be mentioned, that the Eagles are all monogamous, keeping themselves to a single mate, and living together in perfect harmony through their lives. Should, however, one of them die or be killed, the survivor is not long left in a state of widowhood, but vanishes from the



GOLDEN EAGLE.





From Professor DOREMUS.

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Cor. Lexington Ave. and 23d St.  
New York,

There are few topics of more interest to people of all ages than the study of Natural History. The complete work of the Rev. J. G. Wood republished by Dr. Selman Hess under the supervision of Dr. J. B. Holden is a most admirable popular treatise of Zoology.

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Yours respectfully,  
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spot for a few days, and then returns with a new mate. As the rabbits and hares are generally under cover during the day, the Eagle is forced to drive them from their place of concealment, and manages the matter in a very clever and sportsmanlike manner. One of the Eagles conceals itself near the cover which is to be beaten, and its companion then dashes among the bushes, screaming and making such a disturbance that the terrified inmates rush out in hopes of escape, and are immediately pounced upon by the watchful confederate.

The prey is immediately taken to the nest, and distributed to the young, if there should be any eaglets in the lofty cradle. It is a rather remarkable fact, that whereas the vultures feed their young by disgorging the food which they have taken into their crops, the Eagles carry the prey to their nests, and there tear it to pieces, and feed the eaglets with the morsels.

When in pursuit of its prey it is a most audacious bird, having been seen to carry off a hare from before the noses of the hounds. It is a keen fisherman, catching and securing salmon and various sea-fish with singular skill. Sometimes it has met with more than its match, and has seized upon a fish that was too heavy for its powers, thus falling a victim to its sporting propensities. Mr. Lloyd mentions several instances where Eagles have been drowned by pouncing upon large pike, which carried their assailants under water, and fairly drowned them. In more than one instance the feet of an Eagle have been seen firmly clenched in the pike's back, the body of the bird having decayed and fallen away.

It is a terrible fighter when wounded or attacked, as may be seen by the following anecdote, which is related by Mr. Watters in his "Natural History of the Birds of Ireland."

"An Eagle was at one time captured in the county Meath by a gamekeeper, who, surprising the bird sleeping after a surfeit on a dead sheep in the neighborhood, conceived the idea of taking him alive, and for that purpose approached noiselessly, and clasped the bird in his arms. The Eagle recovering, and unable to use his wings, clutched with his talons, one of which entered the man's chest, the hind claw meeting the others underneath the flesh. The man, unable to disengage the claw, strangled the bird, but the talons were yet too firmly clutched to open. Taking out his knife, he severed the leg from the body, and walked with the penetrating member to the village dispensary to have it removed."

The same writer was acquainted with a tame Eagle which displayed a great fondness for the flesh of cats, a taste which seems inherent in the Eagle nature, and to have been noticed in every specimen of tame Eagles. In every case, as soon as an irritated cat came within reach, the Eagle would pounce upon it, seize it in his talons, and with one gripe destroy its life so effectually that the poor animal never had time even to cry out. The bird indulged this cat-eating taste to such an extent that he caused sad havoc among the feline tribe, and was forced at last to go into exile.

Many anecdotes of tame Golden Eagles are on record, but as they are already familiar to the public, I shall make no mention of them. The following account, however, has never before been written, and as it displays a curious trait of character in the Eagle, is worthy of insertion.

A Golden Eagle had been captured in Scotland, and being very tame, always accompanied the family to which it belonged in all their journeys. For some time it lived near Clifton, where it passed its existence fastened to a post by a tolerably long chain, that allowed it a reasonable freedom of motion. Like other tame Eagles, she—for it was of the feminine sex—would persist in killing cats if they came within reach, although her ordinary food was fowls, rabbits, and similar articles of diet. On one occasion, a sickly, pining chicken, which seemed in a very bad state of health, was given to the Eagle. The royal bird, however, refused to eat it, but seemed to be struck with pity at its miserable state, and took it under her protection. She even made it sit under her wing, which she extended as a shield, and once when a man unkindly endeavored to take her *protégé* away, she attacked him fiercely, injuring his leg severely, and drove him fairly off her premises. She several times built a rude nest, but never laid an egg.

There is no doubt but that this beautiful bird might be tamed as readily as the falcon, and trained in a similar manner to fly at game. Indeed, such instances are not wanting both in ancient and modern times. The old hawking authorities did not place much value on

the services of the Eagle, for its weight is so great that it could not be conveyed to and from the field of action without considerable inconvenience. In more modern times the Golden Eagle has been successfully trained to catch game. A gentleman in Huntingdonshire succeeded in taming a Golden Eagle, which he taught to chase hares and rabbits; and several other examples are on record.

Owing to the expanse of the wings and the great power of the muscles, the flight of this bird is peculiarly bold, striking, and graceful. It sweeps through the air in a succession of spiral curves, rising with every spire, and making no perceptible motion with its wings, until it has attained an altitude at which it is hardly visible. From that post of vantage the Eagle marks the ground below, and sweeps down with lightning rapidity upon bird or beast that may happen to take its fancy. It is not, however, so active at rising from the ground as might be imagined, and can be disabled by a comparatively slight injury on the wing. One of these birds, that was detected by a young shepherd boy in the act of devouring some dead sheep, was disabled by a pebble hurled at it from a sling, and was at last ignominiously stoned to death.

When gorged with food the Eagle dislikes the exertion of flying, and generally runs forward a few paces before taking to flight. The Scotch shepherds have discovered this propensity, and have invented a very ingenious trap, which is made so as to take advantage of this habit.

A circular inclosure is built of stone, about four feet in height, without any roof, and with a small door on one of its sides. A dead sheep is then thrown into the centre of the inclosure, and a noose adjusted round the door. The Eagle soon discerns the sheep, and after making a few circles in the air, alights upon the dead animal, and feeds to his heart's content. After eating until he can eat no more, he thinks of moving, but as he does not choose to take the trouble of flying perpendicularly in so narrow a space, he prefers to walk out through the door, and is straightway strangled by the ready noose.

The Eagle is supposed to be a very long-lived bird, and is thought to compass a century of existence when it is living wild and unrestrained in its native land. Even in captivity it has been known to attain a good old age, one of these birds which lived at Vienna being rather more than a hundred years old when it died.

So splendid and suggestive a bird as the Eagle could not escape the notice of any human inhabitant of the same land, and we accordingly find that in all nations, even the most civilized of the present day, an almost superstitious regard has attached itself to this bird. The Eagles of ancient Rome and of modern monarchies and empires are familiar to all, and it is hardly possible to pay a higher compliment to a poet or a warrior than to liken him to the royal Eagle.

This genus, which includes the Golden Eagle, is almost peculiar to the Old World, where about seventeen species are known, America having none exclusively its own; the single species found here being identical with the European. The American bird varies somewhat from the latter, being darker in plumage, and it is rather larger.

Dr. Brewer says it breeds in the mountainous portions of Maine, New Hampshire, and Vermont. Mr. Ridgeway found it common in the great Basin of the West, where the miners call it Mountain Eagle.

THE IMPERIAL EAGLE is an inhabitant of Asia and Southern Europe, and bears a rather close resemblance to the golden Eagle, from which bird, however, it may be readily distinguished by several notable peculiarities.

The head and neck of this species are covered with lancet-shaped feathers of a deep fawn color, each feather being edged with brown. The back and the whole of the upper parts are black-brown, deeper on the back, and warming towards a chestnut tint on the shoulders. Several of the scapularies are pure white, and the tail is ash-colored, bordered and tipped with black. The cere and legs are yellow. The surest mark by which the Imperial may be distinguished from the golden Eagle, is the white patch on the scapularies. This is most distinct in the adult bird; for in the plumage of the young, the scapulary feathers are only tipped with white, instead of being wholly of that hue.

The Imperial Eagle is seldom seen sweeping over the plains, as it is a forest-loving bird, preferring the densest woods to the open country. As far as is known, it never builds its nest on the rocks, but always chooses a spreading and lofty tree for that purpose. In habits it resembles the preceding species, and in disposition is fierce and destructive. No specimen of this bird has yet been taken in England, although it is not at all uncommon in the warmer parts of Europe.

AUSTRALIA possesses a fine example of the aquiline birds in the BOLD EAGLE, so called from the extreme audacity which it displayed on first coming in contact with mankind.



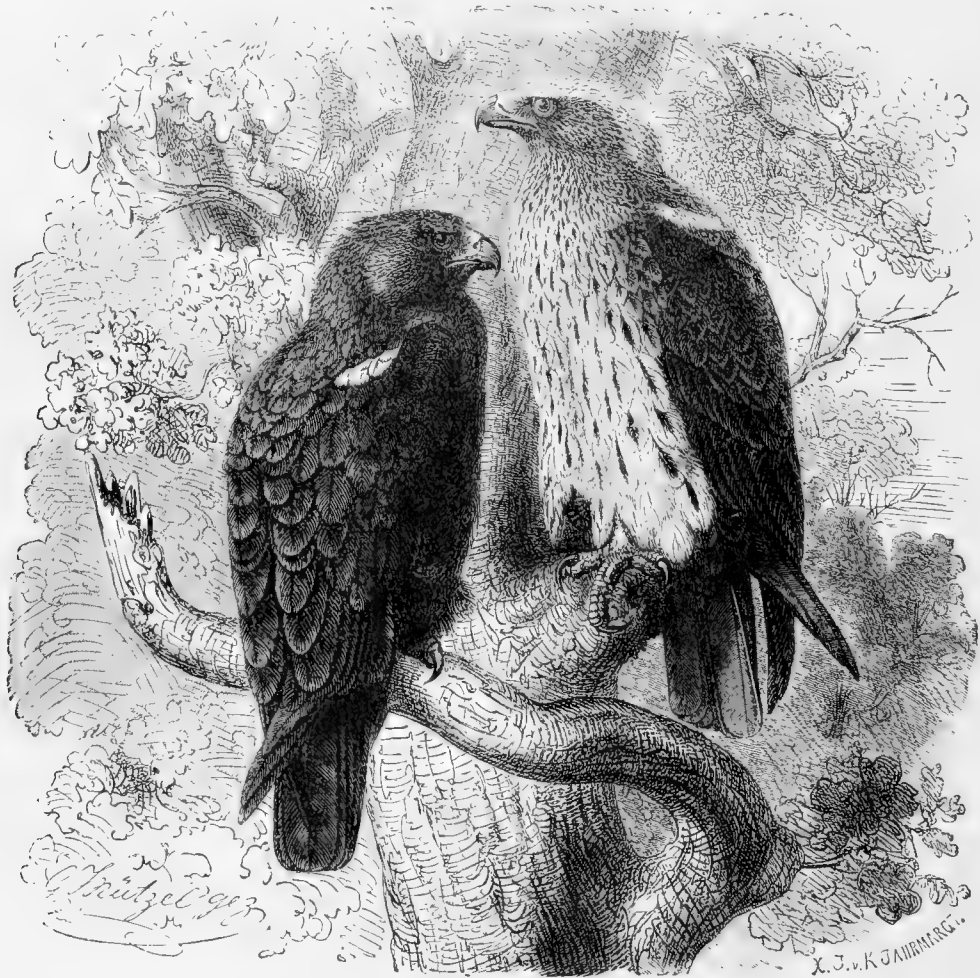
IMPERIAL EAGLE,—*Aquila magnirostris*.

This handsome bird is found in the whole of Southern Australia and Van Diemen's Land. but Mr. Gould believes that it does not inhabit the intertropical regions. The color of the Bold Eagle is a blackish-brown, becoming paler on the edges of the wings. The back of the neck takes a decided reddish hue, which forms a very conspicuous characteristic in the coloring of the plumage. When young, the edge of each feather is tinged with red, and the tail is slightly barred. The eyes of this bird are hazel, and the beak is yellowish except at the tip, which is black.

The food of this bird consists naturally of kangaroos, bustards, and other beasts and birds of its own country. Since sheep have been so plentifully bred in Australia, the Bold Eagle has derived considerable advantage from the enterprise of the agriculturists, and has become a perfect pest to the shepherds, from its fondness for mutton. In consequence of its marauding propensities, it is hunted and persecuted in every way by the colonists, but without much apparent result, as the bird is only driven farther inland, and seems in a fair way to hold its

own for many years to come. The young cannot be taken, nor the eggs destroyed, as the bird always builds its nest on the summit of some lofty tree, which is inaccessible to any human being except the native Australian. These trees often rise for a hundred feet without a branch, thus presenting an insurmountable obstacle to the efforts of any white man.

It will not disdain to feed upon carrion, a flock of thirty or forty having been observed by Mr. Gould seated round the carcass of an ox, and gorged with food like so many vultures. Like the vultures, it will follow the white kangaroo hunters day after day, in order to avail itself of the offal which they throw aside. Of the black hunters it takes no heed, knowing well that the black man has no idea of leaving any portion whatever of his prey for any creature except himself, and that if any part of the slain animal should be distasteful to his palate it is handed over to his wives, who wait round him at a respectful distance, receiving humbly any morsels that he may be pleased to throw to them.



BOOTED EAGLE. (*Aquila pennata*.)

A rather amusing account of the discomfiture of a pair of these Eagles is given by Captain Flinders in his "Voyage to Terra Australis." In company with a friend, he had landed on an uninhabited island, and had captured a snake, which he was taking to the ship for the benefit of the naturalist. While so engaged, an Eagle "with fierce aspect and outspread wing came bounding towards us, but stopping short at twenty yards off, he flew up into a tree. Another bird of the same kind discovered himself by making a motion to pounce down upon us as we passed underneath; and it seemed evident they took us for kangaroos, having probably never before seen an upright animal of any other species in the island. These birds sit watching in the trees, and should a kangaroo come out to feed in the daytime, it is seized and torn to pieces by these voracious creatures."

THERE are many other examples of the genus *Aquila*, the smallest of which is the BOOTED EAGLE (*Aquila pennata*).

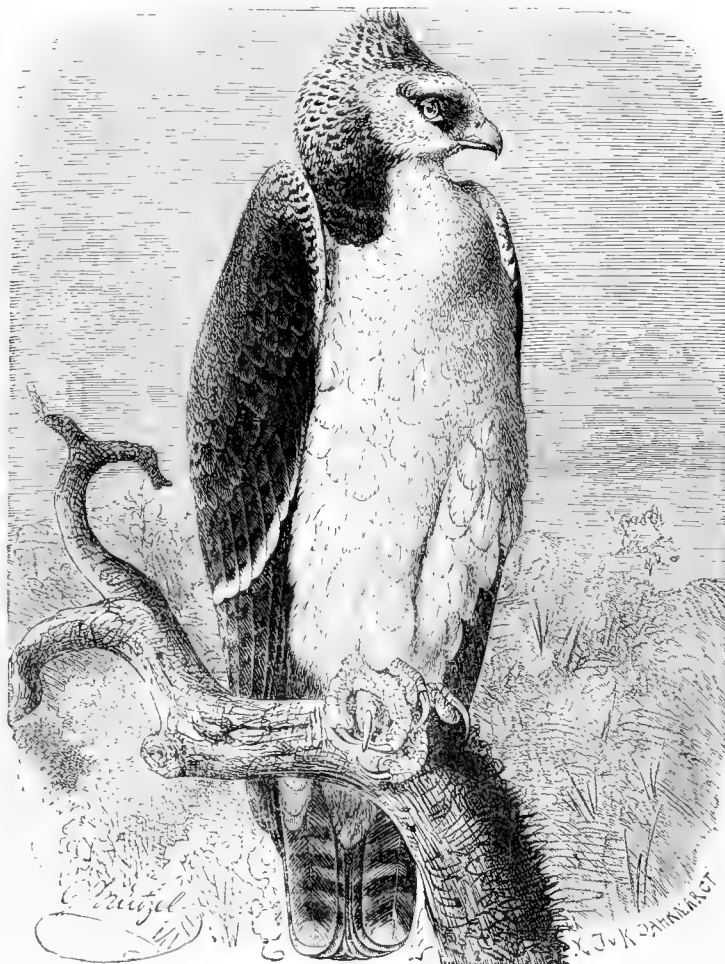
This little bird is not larger than an ordinary falcon, for which, indeed, it might be mistaken but for the lancet-shaped feathers in the head and neck, which plainly speak of the Eagle. The general color of this bird is dark brown; a light yellowish-brown stripe runs across the wings; the abdomen is white, and the chest is also white, each feather having a brown dash down its centre. The legs are thickly clothed or "booted" with white feathers. The Booted Eagle is spread over a considerable portion of the world, being found in many parts of Europe, as well as in Asia, which seems to be its natural residence. It has, however, been known to build in Hungary, near the Carpathian mountains, and makes annual migrations. It is not a very destructive bird, its food consisting generally of small birds, rats and mice, bats, insects, and similar articles of diet.

OF the genus *Spizaetus*, the MARTIAL EAGLE forms an excellent example. This handsome bird is a native of Southern Africa, where it was discovered by Le Vaillant.

The color of this bird is dark brown, the feathers being paler at their edges; the under surface is whitish, the quills being black; the legs are paler and feathered to the toes. The name *Spizaetus* signifies "piping Eagle," and has been given to this and several other species on account of their peculiar cry. Mixed with the rough, barking scream of the ordinary Eagles, there is a piercingly shrill cry which can be heard at a very great distance, even though the bird be out of sight. The nest of the Martial Eagle, or GRIFFARD, as it is sometimes called, is rather peculiar in its structure, being composed of three distinct layers of building materials. The first layer is made with sticks, as is usual among Eagles, and is of considerable dimensions. Upon this foundation is placed a second layer of wood, moss, and roots, to the depth of twenty inches or two feet, and upon this again is laid a quantity of little dry sticks, on which the eggs are laid. The eggs are two in number, white, and very globular.

The Martial Eagle is a bold, powerful, and rapacious bird, feeding mostly upon gazelles and smaller African animals. In the particular locality which it frequents it reigns supreme, and will not permit any other bird of prey to come within a considerable distance of the tree or rock whereon its nest is built. Whilst flying, it permits its legs to hang downward.

THE curious bird which is called from its strange cry the LAUGHING FALCON, is a native of Southern America, where it is found inhabiting the vicinity of marshes and swamps, in which localities it finds the reptile food on which it chiefly subsists. It is also a keen fisher,



MARTIAL EAGLE. (*Spizaetus bellicosus*.)

and haunts rivers and lakes for the sake of the finny prey which they contain. The color of this bird is nearly white, diversified with a broad band of brown that passes over the back, wings, and the space around the eyes, and is prolonged into a belt that surrounds the neck, so that the bird looks as if it had been wrapped in a brown mantle fastened under the throat. The tail is banded alternately with brown and white. The wings of this species are not very long, and the beak is short. The tarsus is also short, and is covered in part with net-like markings. The head is surmounted with a crest, composed of long, narrow feathers, which pass over the head and droop gracefully until they reach the back of the neck.

A SMALL number of the Falconidæ are remarkable for their long tarsi, feathered below the heel, their long, even tail, and the union of the outer claws by a membranous skin. The



JEAN LE BLANC EAGLE. (*Circætus gallicus*.)

JEAN LE BLANC EAGLE, so called on account of the generally white color of its plumage, is a good example of this genus, which includes the bacha, the cheela, and other so-called Eagles.

The color of the Jean le Blanc Eagle is white, speckled with brown spots, and diversified on the back with brown. The white, however, predominates largely, and even in the back and wings, the bases of the feathers are white. The tail is darker than the rest of the plumage, being of a light gray-brown, barred with dark brown. The long tarsi and toes are blue, and the claws are black. The length of the bird is about thirty inches, but the expanse of its wings is not so proportionally great as in the osprey. As the birds of this genus possess several characteristics of the Eagles, and others of the ospreys, they are supposed with justice to form a connecting link between the genera *Aquila* and *Pandion*. The Jean le Blanc is spread over considerable portions of Asia and Europe.

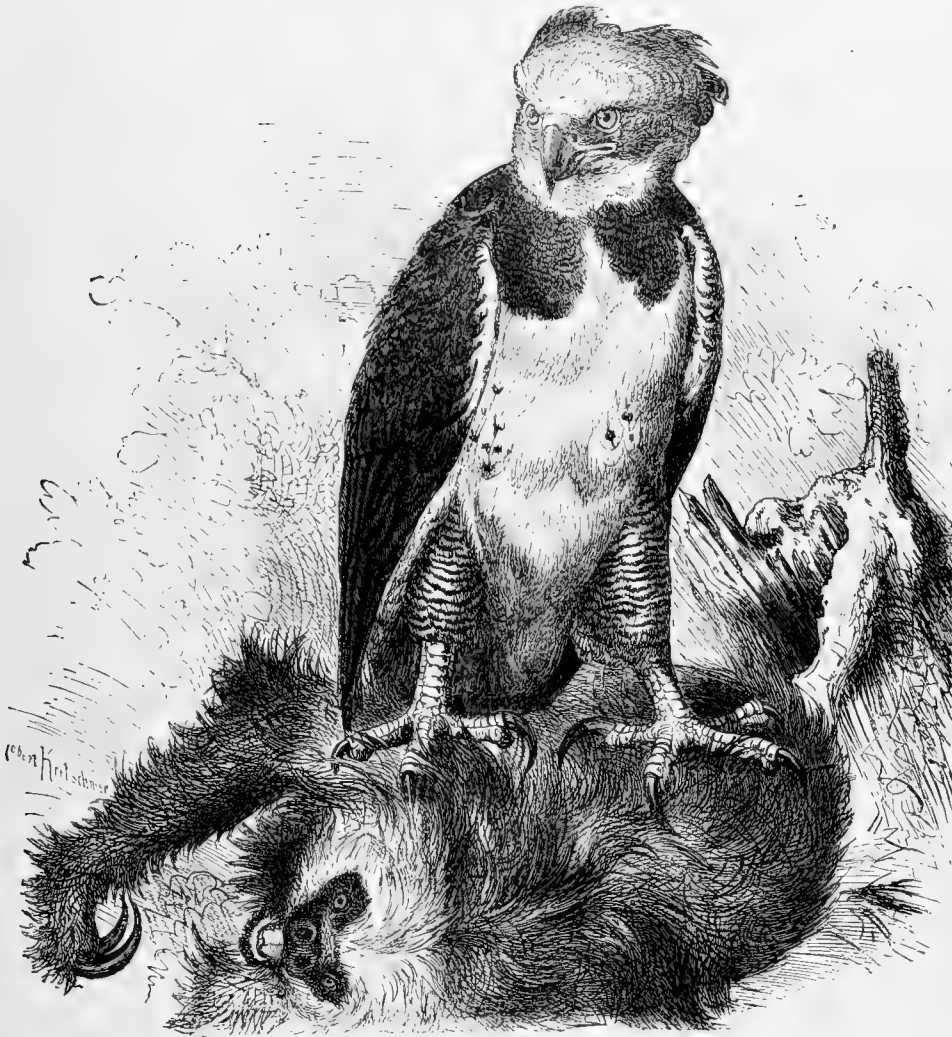
The food of this bird consists chiefly of snakes, frogs, rats, mice, and insects, and it is generally found haunting the low forest lands where such creatures most abound. Its nest is of considerable dimensions, and is generally built on the summit of some lofty tree. The eggs are either two or three in number, and are of a pure, spotless gray.

AFTER many attempts to associate the CRESTED, or HARPY EAGLE, with any other bird in some acknowledged genus, systematic zoologists have at last been obliged to consider it a family or single genus in itself, under the appropriate title of *Thrasaetus*, or Courageous Eagle.

The most obvious external characteristic which serve to distinguish this species is the manner in which the feathers of the head and neck are arranged, so as to form a bold ruff or



fan-like crest when erect. As long as this crest lies flatly on the head and neck, the bird might be taken for a common Eagle; but as soon as the fierce temper is roused, the crest is raised, and the bird assumes an indescribably bold and courageous aspect. The color of this noble bird is very variable, differing greatly in the several epochs of an Eagle's life. When adult, the general color is blackish-slate, the head is gray, and the chest and abdomen white, with a band of a darker hue across the chest. The tops of the feathers which compose the crest are black, and the tail is barred alternately with black and gray. The beak and claws are black.



CRESTED, OR HARPY EAGLE.—*Thrasaetus harpyia*.

This bird is a native of various parts of Southern America, and prefers the deepest forests to the plains or the rocks as its place of residence.

The Harpy Eagle is a most powerful bird, exceeding even the golden Eagle in the extent of its muscular development. The bones of the Harpy are enormously thick in proportion to the size of the bird, and the claws are nearly twice the size of those which belong to the golden Eagle. The wings, however, are not largely developed, being rather short and rounded, so that the bird is not fitted so much for a swift and active flight as for the power of grasping with considerable force, and using its talons with the greatest effect. This formation is easily accounted for by the fact that the Harpy Eagle is not intended as an aerial hunter, chasing its prey through the air and overcoming it by means of superior activity and strength, but feeds mostly on various mammalia, and is a sad enemy to the sloth. Young deer fall victims to this voracious bird, which also destroys vast quantities of covies, opossums, and other animals. Even the large

parrots and aras are slain and eaten by the Crested Eagle. As soon as the Harpy Eagle pounces upon a sloth, a fawn, or an opossum, the fate of its victim is sealed, for the long curved claws are driven so forcibly into its vitals, that it speedily sinks dead beneath the fatal grasp.

From the thickly wooded nature of the localities in which this Eagle dwells, a lengthened chase would be impossible, as the dense foliage and tangled boughs would enable the intended victim to place itself in security if it were only able to receive intimation of its pursuer's presence. The great object of the Harpy Eagle is, therefore, to steal quietly upon its prey, by gliding on noiseless wing over the tops of the trees, and to swoop suddenly and unexpectedly on the unfortunate sloth or fawn that it may chance to discover. When successful in its chase, and standing exultingly on the body of its quarry, its talons firmly holding the prey which it has gained by its own quickness and strength, and its fierce eyes looking jealously around lest any intruder should endeavor to despoil it of the fruits of its victory, the Harpy Eagle presents a truly magnificent sight. Its crest is raised and continually in motion, and its eyes seem to flame with mingled fury and triumph.

The Harpy Eagle (*Thrasætus harpyia*) is found in Texas occasionally, and is, therefore, enumerated in the list of North American birds.

THERE is rather a curious bird found in Brazil, Cayenne, and various parts of the West Indies, named the BRAZILIAN EAGLE or URUBITINGA.

This bird is a great contrast in dimensions to that which has just been mentioned, being only about the size of an ordinary raven, whereas the harpy Eagle is among the largest of the diurnal birds of prey. The color of the Urubitinga is nearly black, diversified with some grayish marks upon the wings, and the white tail-coverts and base of the tail. The beak is powerfully made, and very convex above, and the claws are very sharply pointed. The color of the legs and cere is yellow, and the tarsus is marked in front with a series of shield-like scales. When young, the plumage of the Urubitinga is very different from that of the adult bird, being largely mixed with yellow and dark brown. It is always to be found near rivers, lakes and swamps, as it feeds upon the aquatic reptiles which are found so plentifully in such localities, and also upon the smaller mammalia which also inhabit wet and marshy situations.

ONE of the most interesting of predaceous birds is the celebrated OSPREY, or FISHING HAWK.

As the bird is a fish-eater, it is generally observed on the sea-coast or on the banks of some large river, but has occasionally been observed in some comparatively waterless situation, where it has probably been driven by stress of weather. The Osprey breeds year after year on the same spot, generally choosing the summit of an old ruined building or the top of a large tree for that purpose. The nest is a very large one, composed almost wholly of sticks, and contains two or three whitish eggs, largely blotched with reddish brown, the dark patches being collected towards the large end of the egg. As is the case with the Eagles, the Osprey is monogamous; but on the death of either of the pair, the survivor soon finds another mate, and is straightway consoled by a new alliance. From all accounts it is an affectionate and domestic bird, paying the greatest attention to its mate and home, and displaying a constancy which is not to be surpassed by that of the turtle-dove, so celebrated for matrimonial felicity.

Wilson, in his well-known work on the birds of America, gives a very interesting account of the proceedings of a pair of Ospreys. The female had unfortunately lost one of her legs, and was in consequence disabled from catching fish. Her mate, however, redoubled his efforts on her behalf, and, leaving her in the nest, used to set himself to work with such perseverance that he kept the nest well supplied with food by his sole endeavors, so that his mate never was obliged to leave her charge in search of sustenance. Even after the young had been fledged, this model husband continued his efforts, and relieved his wife of the necessity for hunting.

The flight of the Osprey is peculiarly easy and elegant, as might be expected from a bird the length of whose body is only twenty-two inches, and the expanse of wing nearly five feet and a half. Living almost wholly on fish, the Osprey sails in wide undulating circles, hovering



OSPREY.



over the water and intently watching for its prey. No sooner does a fish come into view than the Osprey shoots through the air like a meteor, descends upon the luckless fish with such force that it drives a shower of spray in every direction, and soon emerging, flies away to its nest, bearing its prey in its grasp. In order to enable it to seize and retain so slippery a creature as a fish, the claws of the Osprey are long, curved, and very sharp, the soles of the feet are rough, and the outer toe is capable of great versatility. When the bird has settled upon its nest, or upon any spot where it intends to eat its prey, it does not relinquish its hold, but, as if fearful that the fish should escape, continues its grasp, and daintily picks away the flesh from between its toes.

Sometimes in making its swoop it arrests itself for a second or two, as if to watch some change of position on the part of its intended prey.

The singular beauty of the Osprey's flight attracted the attention of M. de Quatrefages, who remarked, that the bird was able with outstretched and immovable wings, not only to withstand the power of a "squall" that would have flung a man to the ground, but even to work its way against the wind. How this feat was performed he confesses to be a mystery to him, and that the so-called scientific theories of "acquired velocity" or "tremulous movement" of the wings could not at all account for the phenomenon which he observed.

When unmolested by human foes, the Osprey is a bold bird, as may be seen from the following little anecdote, related by Mr. D'Ewes in his "Sporting in both Hemispheres." "I observed an Osprey, or fishing Eagle, hovering about the river some distance down stream, as if he were regarding my movements with much curiosity. Having caught a small barbel, perhaps a little less than a pound in weight, and extricated the hook with some difficulty, something induced me to throw him back again, as not worth taking, which I did with a sharp jerk, sending him some distance into the middle of the stream. In the space of a few moments, and a hundred yards downwards, I saw the Osprey make a sudden swoop, a dive, and soar aloft with the fish in his mouth—no doubt my identical barbel, which, puzzled with his sudden change of circumstances, and not having regained vigor and instinct sufficient to seek his usual haunts, had floated down stream, and became an easy victim to his destroyer."

In Southern America it is very common, and has been well described by Wilson, Audubon, and other well-known writers, to whom we can but refer for the present. The bird is held in great favor, and protected by common consent, so that any one who shot a fish-hawk would draw down upon himself the anger of the person who constituted himself its protector. The bird is in the habit of building its nest upon the roofs of houses, and is thought to bring good luck to the household which it selects as its protectors. There is a good reason for the love which the fishermen bear towards the Osprey, as it is the harbinger of their best seasons, and by its headlong sweeps after the bass and other fish intimates that their nets may be successfully employed.

Harmless though the Osprey be—except to the fish—it is a most persecuted bird, being not only annoyed by rooks and crows, but robbed by the more powerful white-headed Eagle. Mr. Thompson records an instance where an Osprey, which had been fishing in Loch Ruthven, was greatly harassed by an impertinent Royston crow, which attacked the nobler bird as soon as it had caught a fish, and, as if knowing that it was incapable of retaliation, actually struck it while on the wing. The Osprey kept quietly on its way, but was so wearied by the repeated attacks of the crow, that when pursued and pursuer had vanished out of sight, the poor Osprey had not been able to commence his repast.

How this species is robbed by the white-headed Eagle, who strikes the Osprey on the wing, and snatches from the poor bird the results of his morning's labors, is well known through the graphic descriptions of Wilson and Audubon. The passages in which this thievish habit is recounted are so familiarly known, and have been so frequently quoted, that I prefer merely to mention them, and to insert in the present pages another account of the same proceedings, written also by an eye-witness.

"The bald Eagle, who is a sort of omnipresent predator wherever the primeval nature holds her own upon the continent, makes his appearance sometimes suddenly on his wide-

visiting wings amidst these solitudes, that seem rightly to belong to the fish-hawk alone. His hoarse bark startles the deep silence from afar, and every natural sound is mute. Wheeling grandly amidst the dim blue cliffs, he subsides on slow and royal spread upon some blasted pine beside the lake-river, and with quick, short screaming—while he smooths his ruffled plumes—announces to awed nature that its winged monarch has come down to rest. The friendly fish-hawks, in silent consternation, dart hither and yon in vexed uncertain flight, the tiny songsters dive into deep thickets, and the very cricket, underneath dead leaves, pauses for a moment in its cheerful trill, while the shadow of that drear sound passes over all. But now the kingly bird grows quiet, and with many a shift of feet and restless lift of wing—while fierce, far-darting eyes are taking in all the capabilities of his new perch—he sinks into an attitude of deep repose, one yellow-heated eye upturned, watching the evolutions of the startled fish-hawks, whose movement, becoming less and less irregular as they wheel to and fro, gradually subsides into the measured windings of their habitual flight in seeking prey, while the buzz, the hum, the chirp, the chatter, and the carol creep up once again, and nature becomes voiceful in her happy silence.

“Now, to witness, as I have done, from the mountain tops, the Osprey sweep down from the dizzy height, almost level with my feet, and hear the faint whirr of arrowy-falling plumes, and see the cloud-spray dimly flash through the blue steep of distance—ah, that was a sight! And then the strong bird’s scream of exultation faintly heard, and the far flash of scales glittering as he drags his spoil to sunlight from its dark, slumberous home, and on strong vans goes beating up towards the clouds; ah, that too was a sight! But then to see deep down, that couchant tyrant deep down below, ‘levelling his neck for flight’ (as the ‘glorious weaver’ has it), his war-crest raised, his wings half-spread, pausing for the moment on his stoop, and then one clamorous shriek of confident power, and see him vault away, up, up, with a swift cleave, conquering gravitation, and go lifted on the spell of wings! Wonderful sight—that upward struggle! The fish-hawk has taken warning from the exulting cry of his old enemy, and with yet louder cries, as if for help, goes up and upward, swifter still, with vain beatings that scatter the fleece-forms of cloud above me, and stir them in whirling gyrations. But no; the conqueror with overcoming wings is upon him, with fierce buffetings the stirred chaos cannot hide from me, and the fisher drops his prey with a despairing shriek, while it goes gleaming headlong towards its ravished home. Now but an instant’s poise while the sunlight can flash off a ray from steadied plumes, and the Eagle goes, dimmed with swiftness, roaring down to catch the falling prey before it reach the wave.

“But the fish-hawk, although the mildest, the most generous and social of all the Falconidæ, still recognizes that point beyond which forbearance is no virtue. When the plundering outrages of the bald Eagle have been at length carried to an intolerable extreme in any particular locality, the fish-hawks in the neighborhood combine in a common assault upon the tyrannical robber. I have frequently witnessed such scenes along the coast of the Gulf of Mexico. They abound in great numbers along the estuaries of its great rivers. I remember particularly to have noted the greatest collection of them at the mouth of the Brazos River, at Texas. Twenty or thirty of them are constantly congregated at this place during the spring months, to feed upon the great shoals of the luscious red fish which then make their appearance here; though otherwise a barren and uncouth spot, it is constantly enlivened by the aerial gambols of these powerful and graceful flighted birds, and many’s the battle between them and the bald Eagle that I have witnessed among the clouds at this place. They seemed to have formed a sort of colony for mutual protection, and the moment their foe, the Eagle, made his appearance among them, the cry of alarm was raised, and the vigilant colonists, hurrying from all quarters, attacked the robber without hesitation, and always succeeded in driving him away.

“There was always a desperate battle first before the savage monarch could be routed, and I have seen them gathered about him in such numbers, whirling and tumbling amidst a chaos of floating feathers through the air, that it was impossible for a time to distinguish which was the Eagle, until, having got enough of it amidst such fearful odds, he would fain turn tail, and with most undignified acceleration of flight would dart toward the covert of the

heavy forest to hide his baffled royalty, and shake off his pertinacious foes amidst the boughs, as do the smaller hawks when teased by the little king-birds. I was told by the residents of Valasco, at the mouth, who from sympathy with the fish-hawks seemed to greatly relish the scenes, that year after year the Eagles made persevering attempts to obtain a lodgment in the neighborhood of this colony, but were always promptly repulsed and finally driven off."

There is but one species of Osprey, although it has been thought that the American bird ought to be reckoned as a different species. The general color of the Osprey is dark brown, but it is pleasingly variegated with various shades of black, gray, and white. The crown of the head and the nape of the neck are covered with long, gray-white feathers, streaked with dark brown. The under surface of the body is white, with the exception of a light brown band which extends across the chest. The primaries are brown tipped with black, and the tail is barred above with a light and a deep brown, and below with brown and white. The legs, toes, and cere are blue, the eyes golden yellow, and the beak and claws black.

The range of the Osprey, or Fish-hawk (*Pandion haliaetus*), is well-nigh cosmopolitan. On the American shores it ranges from Northern Brazil, the West India Islands, through the whole of North America.

This bird is exceedingly numerous in some parts of our Atlantic coasts. On a small island three hundred nests of the species were found. A singular circumstance is that of the purple grackle's association with this hawk. The latter allows the grackle the privilege of building its nest on the borders of its own. In the interstices of the coarse nest of the hawk as many as four nests have been seen.

The stout legs and claws of this bird, looking almost a deformity in their great size and angularity, are well adapted to catch and hold the large fish it frequently takes. This bird is in striking contrast to the pelican in this respect. The latter depends upon the large, dip-net-like pouch to hold the prey; and, large as the bird is, it gets only the small fishes that swim in shoals near the surface. The Osprey makes a dash at larger game, and rises from the troubled waters with a fair family meal, while the pelican labors during the day for his pittance of household provender. We have seen the Ospreys at Seguin Island, near Casco Bay, in Maine, and the numerous bald Eagles. Here one may witness the conflicts between them so well described by Wilson and Audubon. Though the nests of the Osprey are often found in company, this bird is fond of building its nest on the tops of the iron beacons that are placed at certain intervals on the coast, and they have a picturesque appearance, attractive to the passing voyager. Nests of this kind are often old, and exhibit the successive layers of material added from year to year, until an immense structure is formed.

THE CINEREOUS, OR SEA EAGLE, is by far the most common of the larger British Falconidæ, being much more frequently seen than the golden Eagle. On account of the peculiar white rounded tail, the bird is sometimes called the WHITE-TAILED EAGLE.

This species is found in all parts of Europe, but is not known to visit America. As it is a fish-loving bird, and is nearly as great an adept at angling as the osprey, it is generally found on the sea-coast. It possesses, however, a very accommodating appetite, and often makes considerable inland journeys in search of food. Young fawns, lambs, hares, and other animals then fall victims to its hunger, and it is said to watch for disabled or dying deer, and to hasten their end by the injuries which it inflicts upon them. On the shores, the Sea Eagle seems to have regular hunting-grounds, and to make its rounds with perfect regularity, appearing at a certain spot at the same hour daily, keeping an anxious eye on the multitude of sea fowl as they hover about the rock ledges in attendance upon their mates and families.

One of these birds that was domesticated for some years contrived, on one occasion, to eat a hedgehog that had strayed too near his quarters. It might naturally have been supposed that the prickly skin of the animal would have caused some discomfort in the Eagle's interior. Nothing of the kind, however, happened; for the Eagle, as is universal among rapacious birds, ejected the skin and indigestible portions of the hedgehog, and seemed to have felt no incon-

venience whatever from the array of prickly spines. The same bird used to spend much of its time in trying to eat a tortoise, a proceeding which the tortoise treated with perfect equanimity. The whole story of this bird is rather a curious one, but would occupy too much space in a work of this character.

It is a fierce and determined bird, having a strange look of lowering self-will in its eyes. When wounded, it fights most fiercely; and even when disabled by a broken wing, it has been known to strike so sharply with the sound wing, that the utmost exertions of two men were required before it could be subdued and bound.

As it is rather an unpleasant neighbor to the farmer, the poultry-keeper, or the sheep-owner, it is much persecuted, and many ingenious traps are constructed for its destruction. In Norway a small conical hut is built, having the roof open, and a piece of stick, to which is attached a bait, laid across the aperture. Inside the little hut sits a man, looking out for the Eagle. As soon as the bird sees the bait, which is generally a rabbit, or some such dead animal, it sweeps down and alights upon the stick. The moment that it settles, it is grasped by the concealed inhabitant of the hut, who jerks it through the opening into the little edifice. Owing to the conical shape of the hut, the bird is unable to use its wings, which are its best weapons, and is, therefore, soon mastered and destroyed.

The nest of this species is constructed after the fashion of the Eagle tribe, and is made of a large mass of sticks, put together in a very inartificial manner. Unlike the generality of the Eagles, it does not return year after year to the same spot, but is of a more roving nature, leaving its young in possession of the dwelling-places, and going farther afield in search of some new hunting-ground. The Golden Eagle acts in a precisely opposite manner; for as soon as the young Eagles are able to shift for themselves, their parents drive them from the locality, and will not permit them to come within a considerable distance of the spot where they were hatched.

The head of the Sea Eagle is covered with long drooping feathers, each feather being ashy brown, and darker at its centre than at the edges. The rest of the body is dark brown, with here and there a lighter spot or streak, the primaries being nearly black. The tail is rounded, and of a pure white color in the adult Eagle, and brown in the immature bird. The legs, toes, beak, and cere are yellow, and the claws black. The generic name, *Haliaëtus*, is of Greek origin, and signifies Sea Eagles.

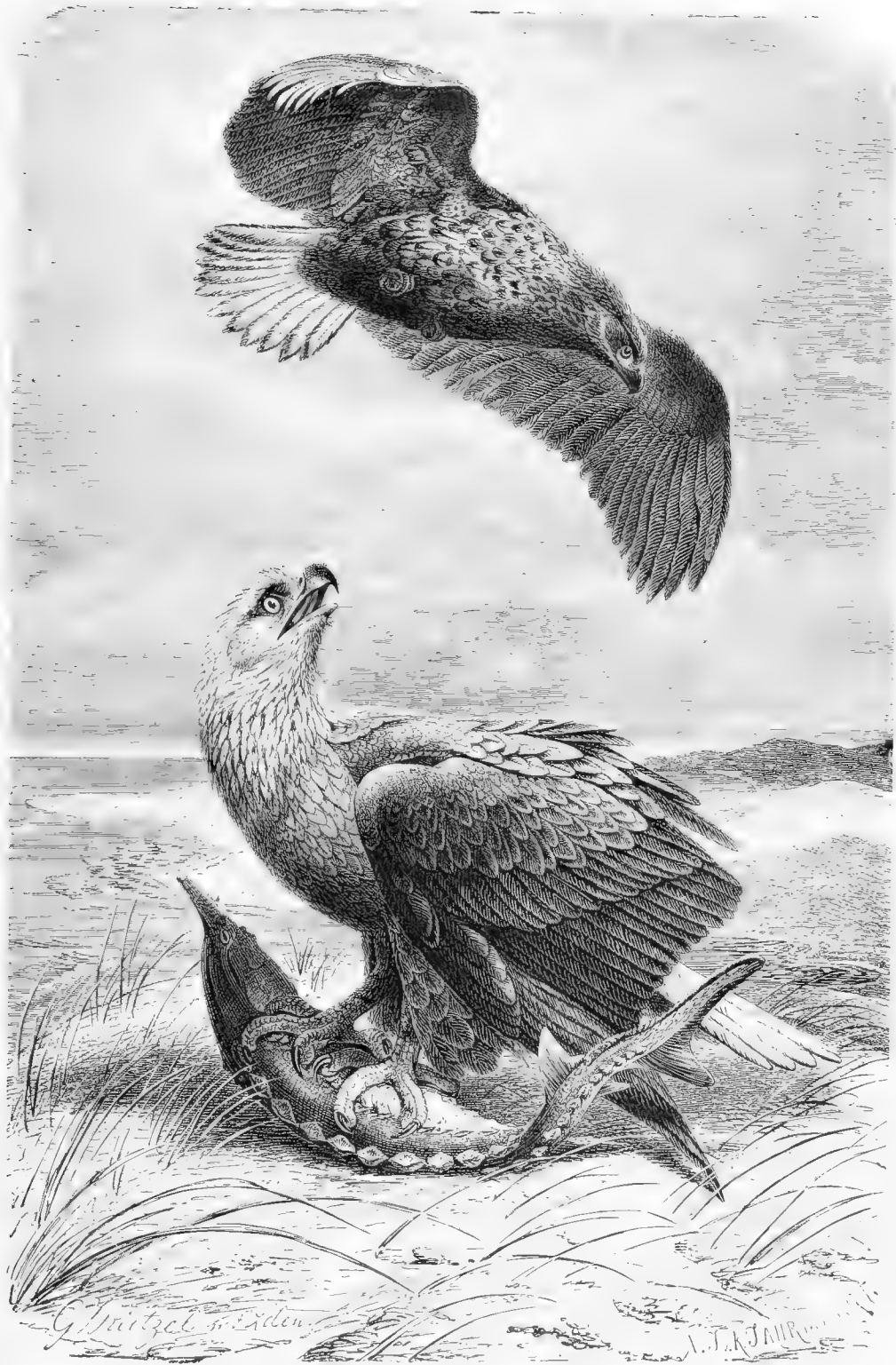
The Cinereous Sea Eagle (*Haliaëtus albicilla*) is common to the northern portions of both continents. Nine species of this genus are known, two only being common to this country, the present species and the White-headed Eagle. Since the first edition of "Wood's Natural History" was published, this bird has been identified as a frequent visitor in North America. The habits of these Sea Eagles differ from those of the Old World; they feed mostly on fish, which is filched from the osprey whenever he is present.

THE noble bird which is represented in the accompanying illustration is celebrated as being the type which has been chosen by the Americans as the emblem of their nation.

The name of BALD, OR WHITE-HEADED EAGLE, has been applied to this bird on account of the snowy white color of the head and neck, a peculiarity which renders it a most conspicuous bird when at large in its native land. The remainder of the body is a deep chocolate brown, inclining to black along the back. The tail and upper tail coverts are of the same white hue as the head and neck. In its earlier stages of existence the creature is of more sombre tints, not obtaining the beautifully white head and tail until it is four full years of age.

The nest of the Bald Eagle is generally made upon some lofty tree, and in the course of years becomes of very great size, as the bird is in the habit of laying her eggs year after year in the same nest, and making additions of fresh building-materials at every fresh breeding-season. She commences this task at a very early period of the year, depositing her eggs in January, and hatching her young by the middle of February. This statement is made by Wilson, and is corroborated by the following incident, which is narrated in a note to Thompson's "Birds of Ireland":—"During a tour made by Richard Langtreay, Esq., of Fort

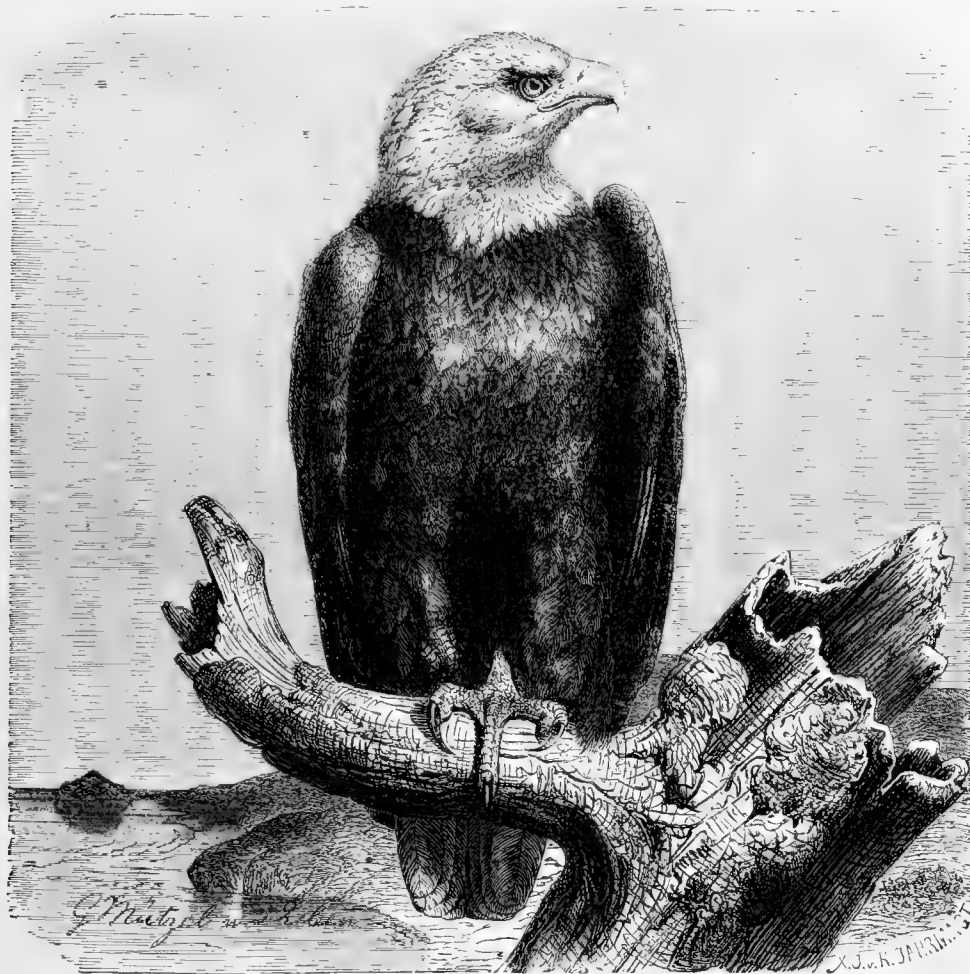




CINEREOUS, WHITE-TAILED, OR SEA EAGLE.



William, near Belfast, through the United States, in 1836, he, in the middle of January, observed a pair of these birds flying about a nest in the top of a gigantic pitch pine, which stood a little remote from other trees, on the bank of the Fish River, Mobile Bay. On the 6th of February he returned to the place, in the hope of procuring a young bird alive. The nest being inaccessible, the tree was cut down, and with it one young bird (unfortunately killed by the fall) came to the ground. The eaglet was covered with down, interspersed with a few feathers. The nest was rather flat, and composed of sticks; it contained the heads and bones of mullet, and two heads of the grey pelican. The parent birds were in great consternation during the felling of the pine, and to the last moment continued flying clamorously about the nest.



BALD, OR WHITE-HEADED EAGLE.—*Haliaeetus leucocephalus*.

Mr. Langtrej was told that two or three pair of Bald Eagles build annually about Mobile Bay, and had their nests pointed out to him."

It is always a very affectionate bird, tends its young as long as they are helpless and unfledged, and will not forsake them, even if the tree on which they rest be enveloped in flames.

How the Bald Eagle takes advantage of the fishing talents of the osprey has already been duly related. The Eagle is, in truth, no very great fisher, but is very fond of fish, and finds that the easiest mode of obtaining the desired dainty is to rob them who are better qualified than himself for the sport. He is capable of catching fish, it is true, but he does it in a very awkward manner, wading into the shallows like a heron, and snatching suddenly at any of the finny tribe that may be passing in his direction. This predatory propensity aroused the wrath of Benjamin Franklin, who objected strongly to the employment of the Bald Eagle

as the type of the American nation, urging as his grounds for opposition, that it is "a bird of bad moral character, and does not get his living honestly."

The Bald Eagle is very accommodating in his appetite, and will eat almost anything that has ever possessed animal life. He is by no means averse to carrion, and has been seen seated regally upon a dead horse, keeping at a distance a horde of vultures which were collected round the carcase, and not permitting them to approach until he had gorged himself to the full. Another individual was seen by Wilson in a similar state of things. He had taken possession of a heap of dead squirrels that had been accidentally drowned, and prevented any other bird or beast of prey, from approaching his treasure. He is especially fond of lambs, and is more than suspected of aiding the death of many a sickly sheep by the dexterous use of his beak and claws. Sometimes he pays the penalty of his voracity, as was very recently the case. A Bald Eagle had caught a wild duck, and carrying it to a large piece of ice, tore his prey in pieces, and began to eat it. When he had finished his repast, he spread his wings for flight, but found himself unable to stir, his feet having been firmly frozen to the ice. Several persons who witnessed the scene endeavored to reach the bird, but were unable, owing to the masses of loose ice that intervened between the Eagle and the land. At last the poor bird perished, as was supposed, having been seen to flap his useless wings in vain endeavors to escape until night drew on and darkness hid him from view.

The manner in which the Bald Eagle hunts for, procures, and kills his prey, is so admirably told by Mr. Audubon, that it would be impossible to do justice to the subject without quoting his own words:—

"The Eagle is seen perched, in an erect attitude, on the summit of the tallest tree by the margin of the broad stream. His glistening, but stern eye, looks over the vast expanse. He listens attentively to every sound that comes to his quick ear from afar, glancing every now and then on the earth beneath, lest even the light tread of the fawn may pass unheard. His mate is perched on the opposite side, and should all be tranquil and quiet, warns him, by a cry, to continue patient. At this well-known call he partly opens his broad wing, inclines his body a little downwards, and answers to her voice in tones not unlike the laugh of a maniac. The next moment he resumes his erect attitude, and again all around is silent. Ducks of many species—the teal, the widgeon, the mallard, and others—are seen passing with great rapidity, and following the course of the current, but the Eagle heeds them not; they are at that time beneath his attention.

"The next moment, however, the wild, trumpet-like sound of a yet distant, but approaching swan is heard. A shriek from the female Eagle comes across the stream, for she is fully as alert as her mate. The latter suddenly shakes the whole of his body, and, with a few touches of his bill, aided by the action of his cuticular muscles, arranges his plumes in an instant. The snow-white bird is now in sight; her long neck is stretched forward; her eye is on the watch, vigilant as that of her enemy; her large wings seem with difficulty to support the weight of her body, although they flap incessantly; so irksome do her exertions seem, that her very legs are spread beneath her tail to aid her in her flight. She approaches, however. The Eagle has marked her for his prey.

"As the swan is passing the dreaded pair, starts from his perch the male bird, in preparation for the chase, with an awful scream, that to the swan's ears brings more terror than the report of the large duck-gun. Now is the moment to witness the display of the Eagle's powers. He glides through the air like a falling star, and, like a flash of lightning, comes upon the timorous quarry, which now, in agony and despair, seeks by various manœuvres to elude the grasp of his cruel talons. It mounts, doubles, and willingly would plunge into the stream, were it not prevented by the Eagle, which, possessed of the knowledge that by such a stratagem the swan might escape him, forces it to remain in the air, by attempting to strike it with his talons from beneath.

"The hope of escape is soon given up by the swan. It has already become much weakened, and its strength fails at the sight of the courage and swiftness of its antagonist. Its last gasp is about to escape, when the ferocious Eagle strikes with its talons the underside of its wing,

and, with unresisted power, forces the bird to fall in a slanting direction upon the nearest shore.

“It is then that you may see the cruel spirit of this dreaded enemy of the feathered race, whilst exulting over his prey, he for the first time breathes at his ease. He presses down his powerful feet, and drives his sharp claws deep into the heart of the dying swan; he shrieks with delight as he feels the last convulsions of his prey, which has now sunk under his efforts to render death as painful as it possibly can be. The female has watched every movement of her mate, and, if she did not assist him in capturing the swan, it was not from want of will, but merely that she felt full of assurance that the power and courage of her lord were quite sufficient for the deed. She now sails to the spot where he eagerly awaits her, and when she has arrived, they together turn the breast of the luckless swan upwards, and gorge themselves with gore.”

The Bald Eagle is found throughout the whole of North America, and may be seen haunting the greater part of the sea-coasts, as well as the mouths of the large rivers.

Audubon remarks, that “the figure of this noble bird is well-known throughout the world. When it is in full adult feather, it is truly a beautiful as well as a powerful-looking bird. Its white head and tail are not perfected before the age of about ten years. Its brown plumage, seen in young birds, though they are full-grown, has been regarded as that of another species, before observers determined that it was only the plumage of immature birds.”

Wilson, the inimitable pen-painter of birds, thus speaks of this grand bird: “Formed by nature for braving the severest cold, feeding equally on the produce of the sea and of the land, possessing powers of flight capable of outstripping even the tempest, unawed by anything but man, and from the ethereal heights to which he soars looking abroad, at one glance, on an immeasurable expanse of forest, fields, lakes, and ocean deep below him—he appears indifferent to the little localities of change of seasons, as in a few minutes he can pass from summer to winter, from the lower to the higher regions of the atmosphere. He is, therefore, found at all seasons, in the countries which he inhabits, but prefers such places as have been mentioned above for the great partiality he has for fish. Elevated on the high dead limb of some gigantic tree that commands a wide view of the neighboring shore and ocean, he seems calmly to contemplate the motions of the various-feathered tribes that pursue their avocations below. High over all these hovers one whose action instantly arrests his whole attention. By his wide curvature of wing and sudden suspension in air, he knows him to be the Fish Hawk, settling over some devoted victim of the deep. His eye kindles at the sight, and, balancing himself, with half-opened wings, on the branch, he watches the result. Down, rapid as an arrow from heaven, descends the distant object of his attention, the roar of his wings reaching the ear as it disappears in the deep, making the surges foam around. At this moment the eager looks of the Eagle are all ardor, and levelling his neck for flight, he sees the Fish Hawk once more emerge, struggling with his prey, and mounting in the air with screams of exultation. These are the signals for our hero, who, launching into the air instantly, gives chase, and soon gains on the Hawk. Each exerts his utmost to mount above the other, displaying in their *rencontre* the most elegant aerial evolutions. The unencumbered Eagle rapidly advances, and is just on the point of reaching his opponent, when, with a sudden scream, the latter drops his fish. The Eagle, poising himself for a moment, as if to take a more certain aim, descends like a whirlwind, snatches it in his grasp ere it reaches the water, and bears his ill-gotten booty silently to the woods.”

The Bald Eagle is very abundant on the Kennebec River, which the osprey frequents to catch the river fish.

Audubon described and figured an Eagle, which was so large and commanding, that he called it “the Bird of Washington” (*Haliaëtus Washingtoni*). No other specimen has been found which answers to the description, excepting the immaturesly plumaged females of the Bald Eagle species. It is, therefore, pretty well decided that Audubon’s bird was an unusually large specimen of a female. The females of all species of the Falcon family are

considerably larger than the males. As we have seen, it has been determined by observation that the Bald Eagle does not attain the white of the head and tail until it has reached the age of ten years. Before this fact was clearly comprehended, much confusion was the result of any attempt to distinguish species.

## FALCONS AND HAWKS.

THE RED-THROATED FALCON, which affords a good example of the genus *Ibycter*, is a native of South America.

The birds comprising this genus are remarkable for the convexity of the upper mandible, and the semi-blunt, notched lower mandible. The claws are sharp, and the cheeks, the throat,

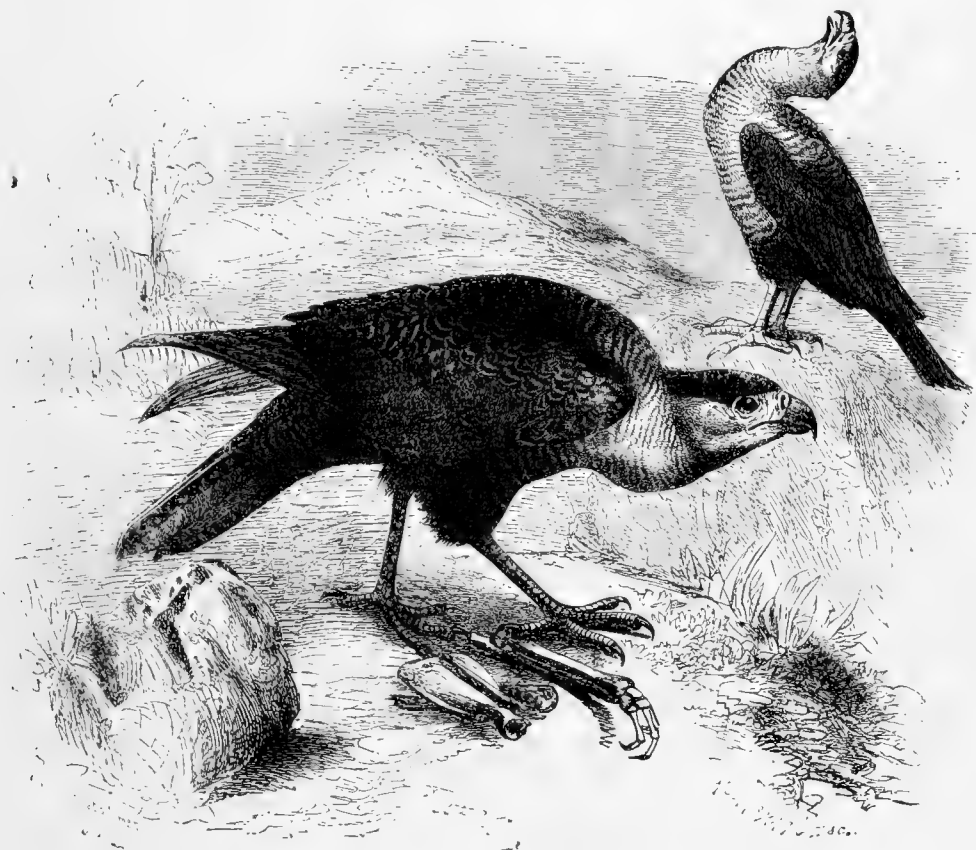


RED-THROATED FALCON.—*Ibycter americanus*.

and part of the crop are naked. This species is a very handsome one, the general tint of the plumage being a very deep blue on the back and the upper surface, and reddish-white below. The neck has a purplish-red hue, from which the bird derives its popular name; the claws are black, the feet and cere yellow, and the beak a deep blue. This bird has been known under a variety of names, such as the Little American Eagle, the Bare-necked Falcon, the White-billed *Ibycter*, the Bare-necked *Polyborus*, together with many similar appellations. The habits of the bird are not known.

CLOSELY related to the preceding bird is the Black CARACARA, also a native of South America. This is a much darker bird than the Red-throated Falcon, the back and upper parts being blue-black, and the rounded tail white only at its base. The feet are yellow, the beak and claws black, the cere a gray-brown, and the space round the eyes devoid of feathers, and flesh-colored. On account of the short and stout beak, and the large tarsus, this species was formerly placed in a separate genus, with the title of *Daptrius*.

THE CARRION HAWKS, as the CARACARAS are popularly termed, are natives of Southern America, and from their great numbers, their boldness, and their unpleasant habits, are sufficiently familiar to any one who has had occasion to travel in the country where they teem.



BRAZILIAN KITE.—*Polyborus tharus*.

There are several species of Caracaras, which are placed in one genus, and are very similar in their habits to the vultures, but on a smaller scale.

THE SOUTHERN CARACARA is not quite so large as some of its brethren, but is quite as useful and as repulsive a bird. Its length is about eighteen inches, and its color a gray-brown upon the back and upper surface, and paler beneath, diversified with reddish bands. The thighs are of a banded rusty-red, and the tail is yellowish-gray. The cere and feet are yellow, and the bill blue-gray. It is an omnivorous bird, eating vegetable or animal substances with equal willingness, and is said to do damage to the potato crop by digging into the cuttings before they have time to sprout. It may be that the bird is urged by the desire of eating, not the potatoes, but the grubs which have taken up their residence therein, and so confers a favor on the planter instead of doing him an injury. This opinion is strengthened by an observation of Mr. Darwin.

THE BRAZILIAN KITE, CARRANCHA, or BRAZILIAN CARACARA, is also a native of the southern portions of America, and is found inhabiting the same localities as the Southern

Caracara, to which bird it bears a considerable resemblance in general appearance and in its general color.

The Brazilian Kite is blackish-brown, deepening to dull black from the top of the head, and varied across the neck and shoulders with wavy bands of dark brown on a grayish ground. The tip of the tail is black, and the remainder is grayish-white, traversed by many narrow wavy bands of dusky brown. The bill is tinged with blue at the base, the claws are black, and the legs yellow. This bird is essentially a carrion eater, following the line of road in order to feed on the poor worn-out animals that sink exhausted on the journey, and are left to perish by their hard-hearted drivers. It will watch the course pursued by hunters, and in hopes of obtaining the rejected portions of the slain animals, will follow them in their expeditions with as much perseverance and confidence as is exhibited by the American wolf under the same circumstances.

The Caracara Eagle (*Polyborus tharus*) is a small falcon-like bird, common to the tropical



BUZZARD.—*Buteo vulgaris*.

and subtropical portions of America, and frequently found in Florida. Dr. Coues saw it in Arizona. Mr. Boardman found it associating with the vultures in Northern Florida. It is the only one of its genus, and is strictly an American bird.

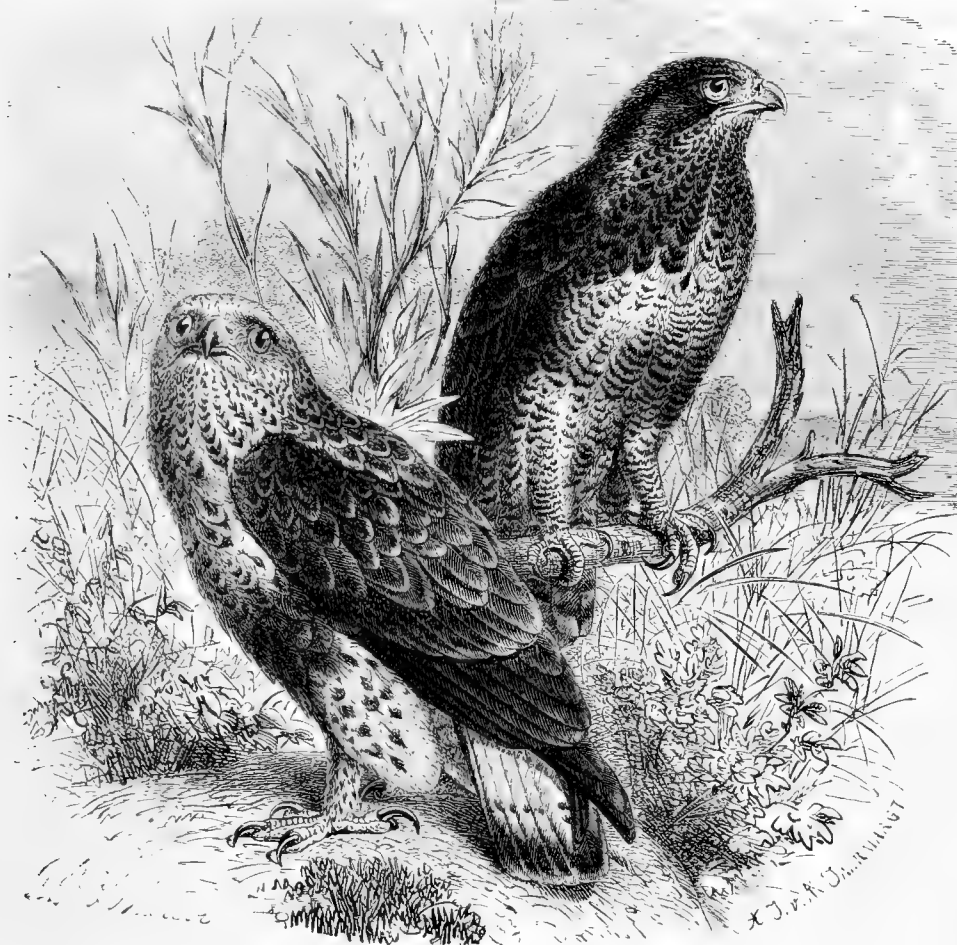
This bird is allied to the vultures, and is considerably terrestrial in habit, walking or running with some degree of grace. It is in some places called King Buzzard.

THE COMMON BUZZARD is one of our handsomest Falconidæ. The plumage of this bird is looser and more downy than is seen in the generality of the hawk-tribe, and bears a certain resemblance to that of the owl. This peculiarity is explained by the habits of the bird, which will presently be narrated. The average length of a Buzzard is from twenty to twenty-two inches, and the tinting of its plumage is extremely variable, even in adult birds. The usual coloring is as follows: The back and whole of the upper surface is a rich brown, becoming lighter on the head and neck, and diversified with longitudinal streaks of the darker hue. The tail is also dark-brown, but is varied with stripes of a lighter color, and the primary



feathers of the wings are nearly black. The under portions of the body are gray-white, marked on the neck, and chest, and abdomen, with spots and streaks of brown. The claws are black, the bill is a deep blue-black, and the legs, toes, and ears are yellow.

THE British Islands possess another species of Buzzard, closely allied to the bird which has just been described. This is the ROUGH-LEGGED FALCON, so called from the manner in which its legs are covered with feathers as far as the margin of the toes.



ROUGH-LEGGED FALCON—*Archibuteo lagopus*.

The Rough-legged Hawk (*Archibuteo lagopus*), called also Buzzard and Falcon, is represented by several varieties. A very dark one is called Black Hawk. This bird is regarded as identical with the European Rough-leg. It inhabits the whole of North America as well as the Old World, and breeds far in the North. Its habits are more nocturnal than other Hawks.

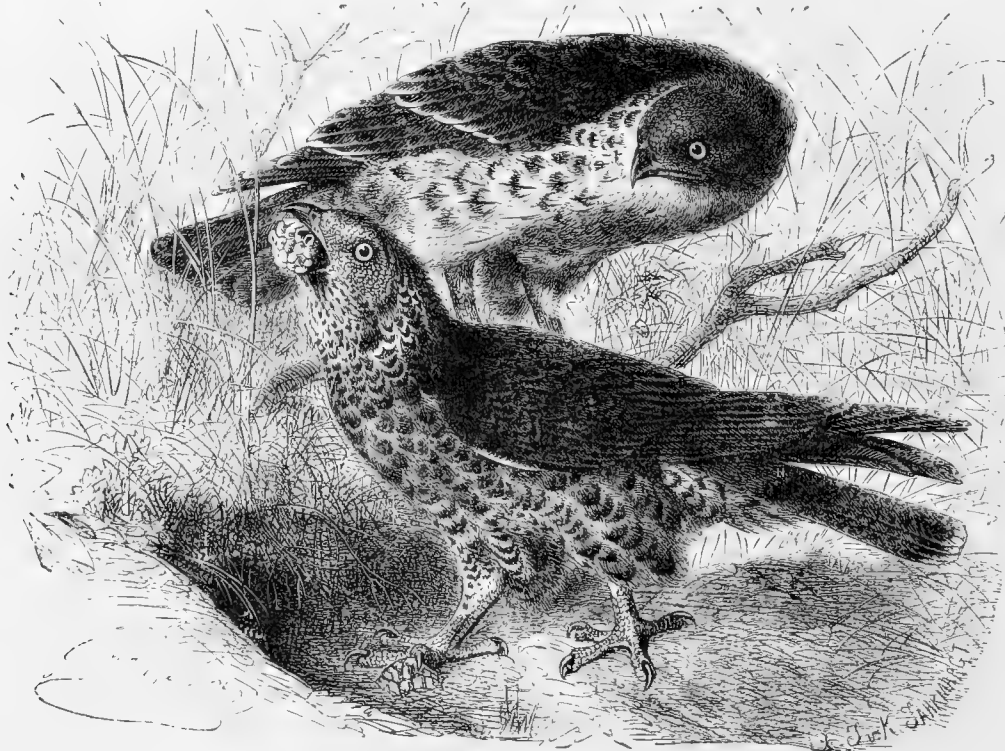
Though large and imposing, this bird feeds on mice and small reptiles. It has none of the noble attitudes common to the Falcons. The editor of this edition of THE LIVING WORLD, has seen it in flocks of ten to twenty, fluttering like butterflies over a meadow, watching for small reptiles. These were the lighter varieties, which were readily recognized by the dark band over the breast, which is conspicuously contrasted with whitish below.

It is rather a larger bird than the common Buzzard, and the coloring of the feathers is rather different. The beak and upper surface is like that of the Buzzard, but the head and upper part of the neck are of a pale yellow hue, each feather having a streak of the darker color down its centre. The chin, throat and breast are of a rusty fawn, and the abdomen nearly of the same tint as the back. The whole of the plumy legs is light fawn, spotted

with brown, and the pinions of the wings are brownish-black. The beak and claws are black, and the cere yellow. The habits of this bird are very like those of the common Buzzard, excepting that it is even more sluggish and lazy in its movements.

IN the HONEY BUZZARD we find a singular instance of a predaceous bird, endowed with many capabilities of catching and destroying the ordinary kinds of game, yet preferring to feast upon insect food in preference to the flesh of quadrupeds or birds.

The Honey Buzzard does not, however, restrict itself solely to insect food, for it has often been observed to catch and devour birds and various quadrupeds. An instance of its predatorial propensities is given by Mr. Watters, in his "Birds of Ireland." The Honey Buzzard had been seen for several successive summers haunting the same locality, and killing the coots



HONEY-BUZZARD.—*Pernis apivorus*.

that frequented a piece of water. A coot was therefore shot, poisoned with strychnine, and laid out as a bait for the Honey Buzzard, and on the next day the bird was found dead at some distance from the spot. When in confinement this bird will eat mice, rats, birds, meat, and similar articles of diet.

THE KITE may be known, even on the wing, from all other British birds of prey, by its beautifully easy flight, and the long forked tail. Indeed, while flying, the Kite bears no small resemblance to a very large swallow, excepting that the flight is more gliding, and the wings are seldom flapped.

Despite the ill savor into which the name of the Kite has fallen, it is really a magnificent specimen of the falconidae, and deserves its specific title of "regalis," or regal, quite as much for its own merits as from the fact that it had once the very great honor to be chased by royalty. It seems that the later kings of France were in the habit of marking the Kite as the quarry which was specially suitable to their regal state, and were accustomed to fly their hawks at Kites, instead of herons, as was usually the mode of procedure in the noble sport of falconry. The Kite is therefore termed regal, not on account of any innate royalty in the bird, but simply because royal personages chose to pursue it.

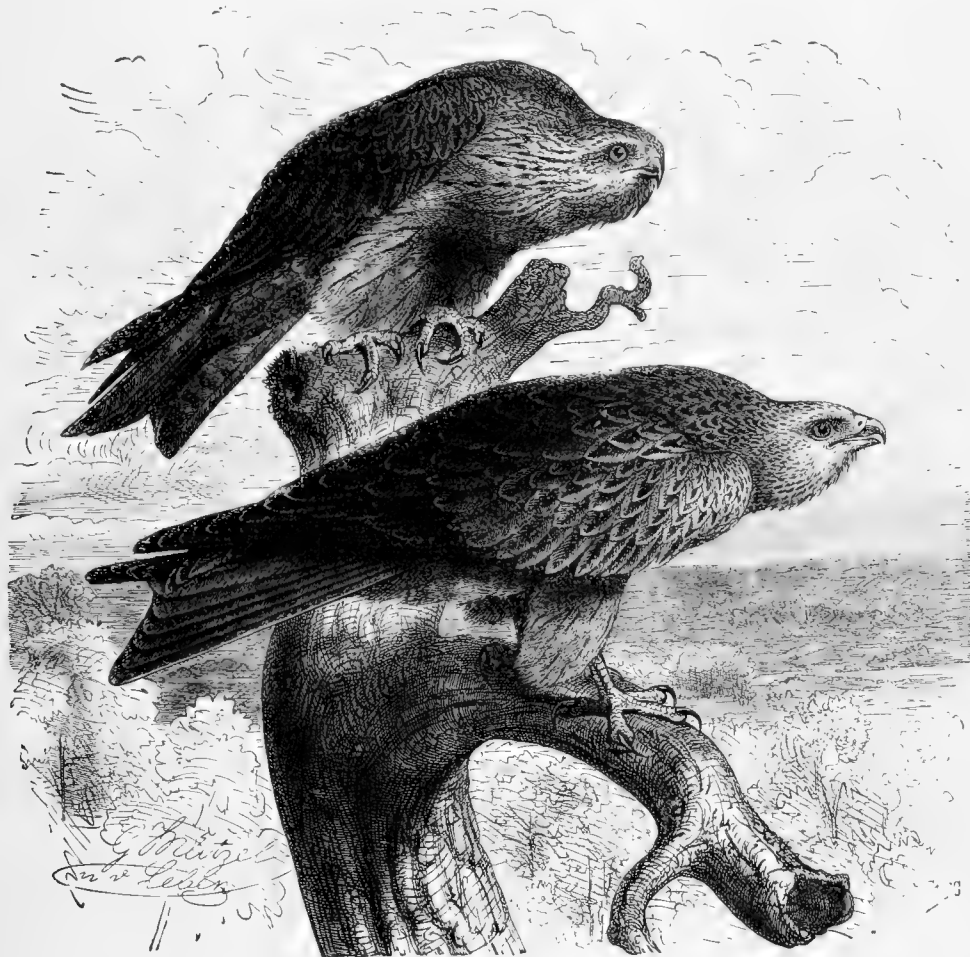


KITES.



THE ARABIAN KITE still plays the same part in Africa as was formerly taken in England by its European relative.

It is a bold and familiar bird, haunting the habitations of man, and audaciously carrying off its prey, undeterred by human presence. As it will eat garbage of almost any nature, it is a valuable ally to the unclean villagers; carrying away the offal which is liberally flung out of the houses, and scarcely permitting it to rest on the ground before it is seen and devoured. The bird is strictly protected on account of the services which it continually renders; and so utterly fearless does it become through long experience of the ways of man, that it pays visits to every house in the village, in hopes of finding food of some kind. When Le Vaillant was employed in preparing his dinner at his wagons, the Kites came and boldly carried off the meat, heedless of the shots that were fired and the cries that were raised, and even returned for a second supply as soon as they had disposed of their former booty.



KITES.—*Milvus migrans* and *Milvus regalis*.

THE beautiful bird which is so well known under the appropriate title of the SWALLOW-TAILED KITE, is an inhabitant of various parts of America. This species seems to be distributed over a considerable tract of country, according to the observations of many practical ornithologists. Mr. Nuttall has the following remarks on the habitat of the Swallow-tailed Falcon.

“This beautiful bird breeds and passes the summer in the warmer parts of the United States, and is also probably resident in all tropical and temperate America; emigrating into the southern as well as well as the northern hemisphere. In the former, according to Vieillot, it is found in Peru, and as far as Buenos Ayres; and though it is extremely rare to meet with this species as far as the latitude of forty degrees, in the Atlantic States, yet, tempted by the abundance of the fruitful valley of the Mississippi, individuals have been seen along that river

as far as the falls of St. Anthony, in the forty-fourth degree of north latitude. They appear in the United States about the close of April or the beginning of May, and are very numerous in the Mississippi territory, twenty or thirty being sometimes visible at the same time. In the month of October they begin to return to the south, at which season Mr. Bateman observed them in great numbers assembled in Florida, soaring steadily at great elevations for several days in succession, and slowly passing to their winter quarters along the Gulf of Mexico."

Audubon remarks that it has never been seen farther eastward than Pennsylvania, and that only a few solitary individuals have been discovered in that locality. Towards the south it becomes more numerous, and in Louisiana and Mississippi it is extremely abundant, arriving in considerable numbers at the beginning of April, as many as a hundred having been counted

in the space of a single hour, all passing directly from east to west. On their first arrival they are so fatigued with their journey that they are easily approached; but owing to their habit of soaring at an immense height, they are tolerably safe even from man at all other seasons.

This falcon bears so strong an external resemblance to the swallow, that it might easily be taken for a common swallow or swift, as it flies circling in the air in search of the insect prey on which it usually feeds. Even the flight is very much of the same character in both birds, and the mode of feeding very similar. The usual food of the Swallow-tailed Kite consists of the larger insects, which it either catches on the wing, or snatches from the leaves as it shoots past the bushes. Various locusts, cicadæ, and other insects, are captured in this manner. It also follows the honey buzzard in its fondness for wasps and their larvæ, and has been noticed to excavate a wasp's nest, and to tear away the comb precisely like that bird. Reptiles, such as small snakes, lizards, and frogs, also form part of the food of this elegant bird. While it is engaged in the pursuit of such prey,



ARABIAN KITE.—*Milvus forskall.*

or in catching the large insects upon the branches, it may be approached and shot without much difficulty, as it is so intent upon its prey that it fails to notice its human foe.

Audubon found that when he had succeeded in killing one of these birds, he could shoot as many more as he chose, because they have a habit of circling round the body of their slaughtered comrade, and sweep round it as if they were endeavoring to carry it away. Taking advantage of this peculiarity, he was enabled to procure as many specimens as he desired, shooting them as fast as he could reload his gun.

The Fork-tailed Kite, or Swallow-tail, so called, is peculiarly an American form, the genus having only one species. It belongs to the tropical and subtropical regions more properly, but is occasionally seen as far north as Pennsylvania. It is common on the Mississippi Valley as far as Wisconsin, where it breeds. Few groups of birds vary in their habits more than Hawks and Kites. The last species noticed was really graceful in its movements on the ground, while the present bird is awkward in the extreme. This species of Kite is far from awkward in his proper element, however; he is there a swallow-like flyer, his long, forked tail sweeping the air most gracefully. This bird has the singular faculty of also feeding on the wing. He has

been seen to fly through a swarm of bees, clutch them with his talons, and pass them to his mouth while yet on wing, soaring and wheeling in the most graceful manner.

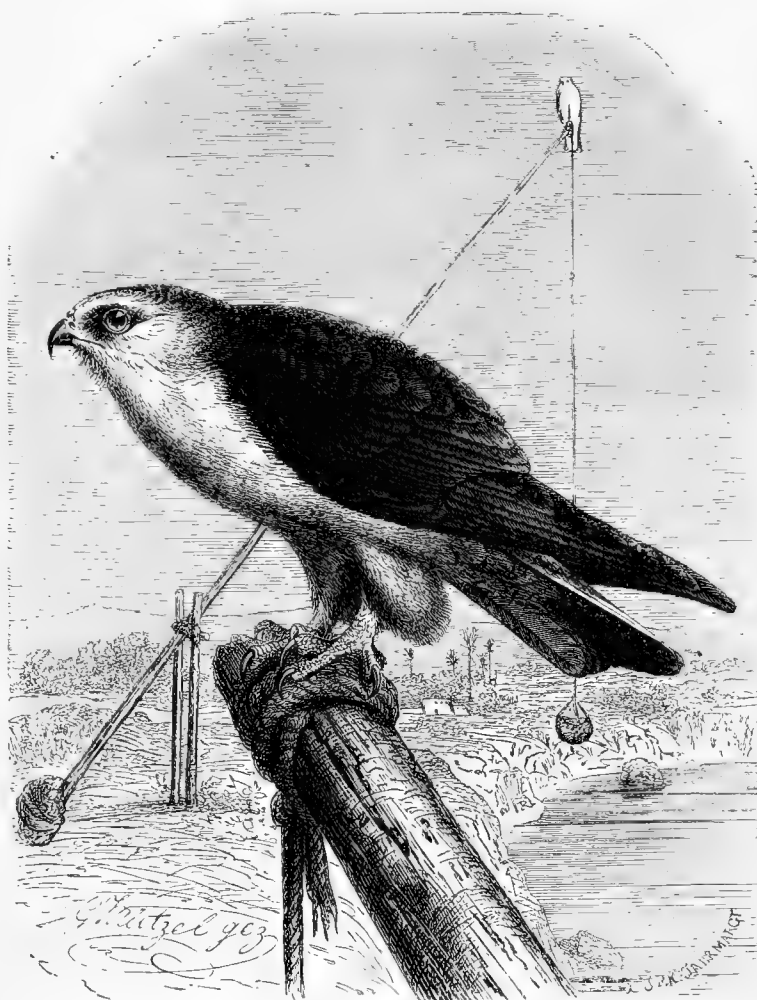
WILSON'S PHALAROPE (*Steganopus wilsoni*) inhabits the United States and the British Provinces generally. It is rare, or seldom seen in New England. It breeds in the Western States, where, in the Mississippi Valley and westward, it abounds. It is also found in Mexico and South America. The sexes are alike in color. Of the three Phalaropes, this, in its full plumage, is the handsomest and the largest. It may be called, also, one of the handsomest of the whole group of waders.

Wilson says: "In the grand and wonderful chain of animated nature, the Phalaropes constitute one of the links between the waders and the web-footed birds, having the form of the sandpiper, with the habits of some of the ducks. The scalloped membrane on the toes enables them to swim readily. They do not appear to be fond of the neighborhood of the ocean, and are generally found in the interior, about the lakes and ponds of fresh water, where they delight to linger, and swim near the margin in search of seeds and insects. They go in pairs, and we cannot learn that they are anywhere numerous.

THE NORTHERN PHALAROPE (*Lobipes hypoboreas*) inhabits the northern hemisphere and penetrates to high northern latitudes to breed. It is generally distributed, but is essentially maritime. Though generally distributed, it is no where as abundant as Wilson's, though it appears at times in large flocks. It winters in the Gulf States. Dr. Coues saw a nest among the Cascade mountains. Dall found it common along the Yukon river.

THE small but brilliant BLACK-WINGED FALCON is a native of Africa, but is found in nearly all the temperate portions of the Old World. It has also been seen in New Zealand and Java.

It is a fierce and daring little bird, striking so sharply with beak and claws, that even when wounded it cannot be approached without considerable precaution. The food of the Black-winged Falcon consists chiefly of grasshoppers and various insects, from which it is thought to derive the powerful musky odor which is exhaled from its body, and marks every spot on which it has recently sat. It is generally to be seen perched on the extreme top of some lofty tree, and while looking out for prey or engaged in active pursuit, pours forth a succession of ear-piercing cries, earning thereby from several ornithologists the specific title of "vociferous."



BLACK-WINGED FALCON.—*Elanus melanopterus*.

Besides insects, it also feeds upon snakes and various small reptiles, and will sometimes, though but rarely, kill small birds or mice.

The wings are remarkably long in this species, and the legs short and feathered, a structure which gives clear indication that the bird is strong on the wing, and excels more in swiftness and activity of flight than in strength of beak or clutch of talons. In many of its habits this species closely resembles the swallow-tailed falcon, and, like that bird, is capable of chasing and capturing insects on the wing. The nest of the Black-winged Falcon is rather large, and is generally built on a convenient forked branch. It is usually lined with moss and feathers, and contains four or five whitish eggs. Although the bird may often be seen darting at the crows, shrikes, and other predaceous birds that may pass near its residence, it has no intention of killing and eating them, but only wishes to drive them away from the vicinity of its home.

The head and neck of the Black-winged Falcon are silver-gray, the centres of its wings are black, and the primaries and secondaries are grayish-brown, with gray edges. The shoulder and the wings, breast, abdomen, and tail are pure white; the cere and toes are yellow, and the bill and claws black. When young, the back is brown, each feather being tipped with white, and the breast is brown spotted with white.

THE BLACK-SHOULDERED KITE (*Elanus leucurus*), called also the WHITE-TAILED KITE, has a range of *habitat* about the same as the preceding, extending, however, into California.

Charles Lucien Bonaparte, the eminent ornithologist, first described this bird from a specimen he procured from Florida. Like the preceding, it feeds on insects and small reptiles. It is exceedingly graceful, gaining the name *Bailarin* in South America, from its buoyant flight—the word signifying to balance.

THE CROOK-BILLED FALCON derives its name from the shape of the beak, which is rather long and narrow, and is curved over at the point so as to form a rather large and sharp hook.

The distinctive characteristics in this bird, which was placed in the genus *Cymindis*, are the short tarsus armed with net-like markings, and half clothed with feathers down their front, the wings shorter than the tail, and small narrow nostrils, which are so closely contracted as to resemble a mere cleft in the beak. The word *Cymindis* is Greek, and ought rather to have been used to designate the night-jar than this Falcon. This species possesses scales as well as reticulation upon the front of the tarsus. Its color when adult is a leaden-blue, or gray on the upper portions of the body, and paler beneath. The tail is white at the base, and deepens into an orange-gray at the extremity. Its quill feathers are edged with a brownish ash, and the feet and cere are yellow. In its earlier stages of existence, the bird is of an almost uniform brown, relieved by reddish hues on the cap of each feather, a yellow stripe runs beneath the eyes, and little patches of the same color appear on the cheeks, and the front of the neck is grayish-white. All the species that belong to this family live in America.

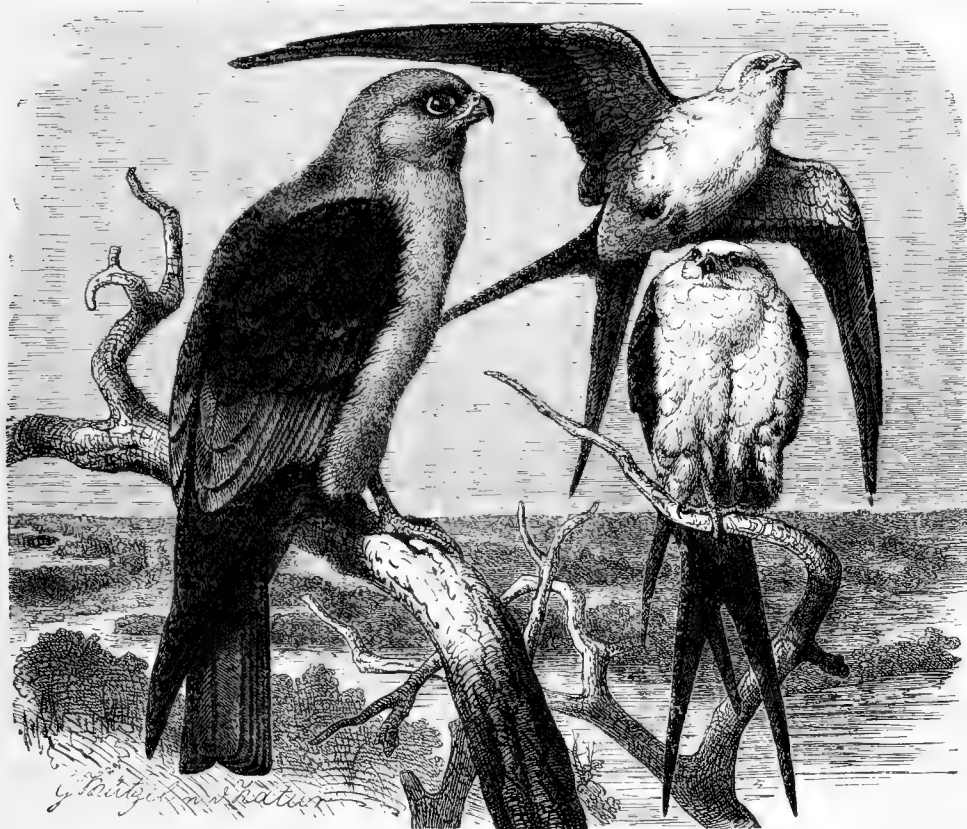
So does also a member of the genus *Ictinia*, which is very familiar to ornithologists under the name of MISSISSIPPI KITE (*Ictinia mississippiensis*).

This fine bird is a native of various parts of America, where it may be seen at a vast elevation in the air, sailing about in strange companionship with the turkey buzzard, and equalling those birds in the power, grace, and readiness of flight. Why two such dissimilar birds should thus inhabit the same region of air, and delight in each other's society, is a very perplexing question, and requires a much clearer knowledge of the species and its habits before it can be satisfactorily settled. The Mississippi Kite cares not for carrion, and is not absolutely known to make prey of anything bigger than a locust. Yet, as Wilson well observes, the powerful hooked beaked and sharp claws seem as if they were intended by nature for the capture of prey much more formidable than grasshoppers, locusts, and butterflies. In its flight, the Mississippi Kite needs not to flap its wing, but sails on its airy course with the same easy grace and apparent absence of exertion that is so characteristic of the flight of the vultures.



The very great proportionate length of its wings may account for this habit; the entire length of the body and tail being only fourteen inches, while the expanse of wing equals three feet. Being possessed of such power of flight, it emulates the swallow-tailed falcon in many of its evolutions, and in a similar manner is fond of sweeping rapidly past a branch, and snatching from the leaves a choice locust or beetle without checking its progress. Like that bird it also feeds while on the wing, holding its prey in its claws and transferring it to its mouth without needing to settle. In character it seems to be a most fierce and courageous bird, as may be gathered from a short narrative given by Wilson of one of these birds which he had shot.

“This Hawk, though wounded and precipitated from a vast height, exhibited in his distress symptoms of great strength, and an almost unconquerable spirit. I no sooner approached to pick him up, than he instantly gave battle, striking with his claws, wheeling round and

MISSISSIPPI KITE.—*Ictinia mississippiensis*.SWALLOW-TAILED FALCON.—*Navclerus forficatus*.

round as he lay partly on his rump, and defending himself with great vigilance and dexterity, while his dark-red eye sparkled with rage. Notwithstanding all my caution in seizing him to carry him home, he stuck his hind claw into my hand with such force as to penetrate into the bone. Anxious to preserve his life, I endeavored gently to disengage it; but this made him only contract it the more powerfully, causing such pain that I had no alternative but that of cutting the sinew of his heel with my penknife.

“The whole time he lived with me, he seemed to watch every movement I made, erecting the feathers of his broad head, and eyeing me with savage fierceness; considering me no doubt as the greater savage of the two. What effect education might have had on this species under the tutorship of some of the old European professors of falconry, I know not; but if extent of wing and energy of character, and ease and rapidity of flight, could have been any recommendation to royal patronage, this species possesses all these in a very eminent degree.”

The attention of Mr. Wilson was greatly taken with these birds, and he on several occasions opened the stomachs of those which he had shot, in order to discover the food on which

they had been sustained. On every occasion he found nothing but the legs, wings, and other indigestible portions of beetles, grasshoppers, and other large insects. He suggests that its lofty flight is for the purpose of preying upon those insects which choose the highest region of air for their pleasure trips, and not merely for the better convenience of seizing prey on the ground, as is the case with so many of the more carnivorous hawks.

The colors with which this bird is decorated are, though simple in themselves, exceedingly pleasing in their general effect. The head, neck, and part of the secondaries are a grayish-white, and the whole of the lower parts are a whitish-ash. The back and upper portions of the body are ashy-black, and the pinions are deep black, as is its deeply forked tail. The legs are scarlet, and the claws, bill, and cere black. The Mississippi Kite, called also the Black Kite, has much the same locality as the Black-Shouldered Kite. On the prairies of Illinois it is said to be exceedingly abundant. On the Atlantic border it does not reach above the Carolinas. It has the same graceful flight seen in the other Kites.

THE HOOK-BILLED KITE (*Rostrhamus sociabilis*), called, also, the Everglade Kite, is known in the West Indies and Florida, breeding in the everglades. It is said to be sociable in its habits, in this respect differing from others of the order. We have seen, however, Rough-legged Falcons associated in flocks of a dozen or more, hovering over low lands, and eagerly scanning the ground for small reptiles. In flight this Hawk resembles the Marsh Hawk. It feeds on small shell fish, and seems particularly adapted to marine localities.

THE BROAD-WINGED HAWK (*Buteo pennsylvanicus*) is an inhabitant of the Eastern Atlantic States as far south as Florida; occasionally seen in Arizona and Southern California. Its great breadth of wing, or width of secondaries, and also of its head and body, when compared to its length, seem surprising proportions. It is a "snug-built" bird, and one of handsome markings. Audubon gave this bird the character of a coward and sneak, but some of our later ornithologists agree in crediting it with all the courage possessed by its kindred. Mr. Boardman, of Calais, Maine, whose observations are very accurate, differs essentially from Audubon. He gives several instances of dangerous attacks upon individuals who were attempting to remove eggs from their nests.

SWAINSON'S HAWK (*Buteo swainsoni*), called also Baird's, is found in the western regions of America, as far east as the Mississippi River, and north to the Arctic circle. Dr. Linecum, an excellent observer in Texas, relates an instance of this bird following up a prairie fire to snatch up the small mammals and insects that are driven out by the heat. When any one approaches its nest on the prairie it will make a pretty bold attempt to frighten him away; failing that, it tries to decoy by alighting near and screeching loudly, as if some great calamity had happened. On approaching, he moves off with seeming great difficulty, as if wounded, screeching all the time. Eventually he rises, and sweeps along just above the tall grass, and settles down as if to indicate the locality of the nest. If he fails to deceive the intruder and the latter attempts to disturb the nest, the Hawk immediately rises and gives fight.

THE BAND-TAILED HAWK (*Buteo zonocercus*) is a native of Mexico and Guatemala, and is occasionally seen in Arizona and California.

THE RED-SHOULDERED HAWK (*Buteo lineatus*) is an Eastern bird, extending to Florida. Another variety is found on the Pacific slope. This bird is excessively noisy. It is very common, being a resident in New England throughout the year.

RED-TAILED HAWK (*Buteo borealis*). This is another very common resident of the New England States throughout the year. Several distinct varieties of this Hawk are known in as many different portions of the country. This is a strong and powerful bird, having the faculty of soaring at great heights and at long intervals. Its habit is to watch for its prey at

some high position, and dart furiously upon it, often killing by the force of the shock. Audubon says the sexes separate after the breeding season, and are then quite hostile to each other. Its spread of wing is three feet nine inches.

HARLAN'S HAWK (*Buteo harlani*), called also Black Warrior, is native to the South-western States, and Guatemala. It is allied to the preceding, though somewhat smaller. Its prey is preferably wild fowl. In this there is a singular difference between it and larger Hawks. Some of the latter feed on beetles and grasshoppers by preference.

COOPER'S HAWK (*Buteo cooperi*) is a Californian species, named in honor of Dr. Cooper, the naturalist of California, who obtained one specimen, the only one so far known to science. It is very closely like an Asiatic and European species, and may be identical.

THE CALIFORNIA SQUIRREL HAWK (*Archibuteo ferrugineus*) inhabits Western North America, from California to the Missouri River. Like some others it was discovered since Audubon's day.

CLOSELY allied to the Mississippi Kite is the SPOTTED-TAILED HOBBY, or LEADEN ICTINIA, both names being derived from the coloring of the plumage. It is, in common with the preceding bird, a native of America, and resembles it closely in many of its habits and manner of feeding. It is fond of soaring at a very great elevation, and will often remain stationary in a single spot, hanging as it were self-poised in air. The back and wings of this species are a slate or leaden blue, and the head and remainder of the plumage of whitish-gray, spotted rather singularly with brown. The eye is bright red. Specimens of this bird have been found both in North and South America.

#### THE TRUE FALCONS.

THE true FALCONS are known by their strong, thick, and curved beak, the upper mandible having a projecting tooth near the curve, which fits into a corresponding socket in the under mandible. The talons are strongly curved, sharp pointed, and are either flat or grooved in their under sides.

AMONG the true Falcons the JERFALCON is the most conspicuous on account of the superior dimensions of its body and the striking power of its wing.

This splendid bird is a native of Northern Europe, being mostly found in Iceland and Norway, and it also inhabits parts of both Americas. Some naturalists believe that the Norwegian and Icelandic birds ought to be reckoned as different species, but others think that any differences between them are occasioned by age and sex. It is said that of the two birds the Iceland variety is the more powerful, of bolder flight, and greater age, and therefore better adapted for the purpose of falconry.

The power of flight possessed by this bird is wonderfully great, and has been well described by Mr. Mudie. "It pays occasional visits to the northern and western isles, more especially to those places of them that abound with rock doves; and few sights can be finer than that of the Jerfalcon driving through a flock of them. When the Jerfalcon comes within sight of her prey she bounds upwards, every stroke of the wings producing a perpendicular leap, as if she were climbing those giant stairs with which nature molds the basaltic rocks; and when she has 'got the sky' of her prey to a sufficient height for gaining the necessary impetus, her wings shiver for a moment—she works herself into proper command and poise, and to the full extent of her wings. Then, prone she dashes, with so much velocity that the impression of her path remains in the eye in the same manner as that of the shooting meteor or the flashing lightning, and you fancy that there is a torrent of Falcon rushing for fathoms through the air. The stroke is as unerring as the motion is fleet. If it takes effect on the body, the bird

is trussed and the hunt is over; but if a wing only is broken, the maimed bird is allowed to flutter to the earth, and another is marked out for the collision of death.

“It sometimes happens that the mountain crow comes in for the wounded game, but in order to do so it must proceed stealthily along the ground, for woe betide it if it rises on the wing and meets the glance of the Falcon. The raven himself never scoops out another eye if he rises to attempt that one; and it is by no means improbable that in the early season in those cold northern countries, when the lambs are young and the flock weak, and the crows and ravens prowl about blinding and torturing, the Jerfalcon may be of considerable service to the shepherd.”

When at liberty in its native land, it seems to prefer birds to any other kind of prey, and will resolutely attack birds of considerable size, such as the heron or stork. It will also chase hares and rabbits, and in the pursuit of this swift game is so eager, that after knocking over one hare, it will leave the maimed animal struggling on the ground while it goes off in chase of another. Although its home is in the chilly wastes of those northern regions, the bird is in no want of food, finding ample supply in the sea birds which swarm around the tall cliffs that jut into the waves, and being able from its great powers of flight to range over a vast extent of country in search of its daily food.

On account of the singular power, swiftness, and courage of this bird, it was in former days held in the highest estimation, and could only be purchased at a most extravagant price. Not only must it be taken at the imminent risk of life, from the almost inaccessible cliffs on which it builds its nest, but it must also be specially brought from Iceland or Norway, and trained after its arrival at its new residence. As the bird is a most unruly and self-willed creature, its instruction was a matter of very great difficulty, and could only be achieved by the most patient of skilful teachers. So highly, indeed, was this bird valued, that after the hawking season was over, and the ordinary hawks permitted to fly at liberty according to custom, the Jerfalcon was retained by its owner, and kept for the next year. The training of this bird is a long and tedious process, and is managed after the following manner.

It is allowed that all hawks are fierce and untameable in proportion to the latitude in which they reside, those which inhabit the northern and colder parts of the earth being much fiercer and less tameable than those of more southern regions; so that the course of training through which a Jerfalcon is forced to pass is much more severe than that which suffices to render a Peregrine Falcon subservient to its teacher.

The first object which the trainer bears in mind is, to reduce the strength of the bird by slow degrees, so as to prevent it from injuring itself by the fierce and protracted struggles with which it would endeavor to resist any advance on the part of the teacher. This object is obtained by giving the bird only half the usual allowance of food, and by steeping the meat in water before the Falcon is permitted to touch it. A leathern hood, which answers the double purpose of blinding the eyes and keeping the beak closed, is placed on the head, and never removed except at night, so that the bird remains in perpetual darkness for ten days or a fortnight. If the bird attempts to bite when the hood is removed, cold water is splashed in its face, and if it is very savage, it is plunged entirely under water. By the end of fifteen or sixteen days, the Falcon becomes used to the handling to which it is subjected, and will permit the hood to be removed and replaced, without offering any resistance.

The next part of the instruction is to teach the bird to pounce upon any object that may be pointed out by the instructor, whether it be a heron moving in the air, or a hare running on the ground.

The skin of the intended prey is employed for this purpose, and the bird is invariably fed while standing on this skin. When it is accustomed to associate the idea of the hare or heron skin with the pleasure of satisfying its hunger, the skin, if it be that of a hare, is drawn along the ground, and the falcon encouraged to pursue it. As soon as the bird pounces, the teacher looses his hold of the skin, and permits his pupil to feast on the meat which has been previously attached to it. Next day the skin is placed at a distance of several yards before it is started, and the distance is gradually increased, so that the bird learns to search in every



JERFALCON.





**Testimonials to the "Tafeln" of Brehm's Thierleben.**

The late CHARLES DARWIN writes:—"The illustrations are the best I ever saw in any work. I find it superfluous to enter here into particulars, as I already, in the 'Descent of Man,' have willingly and openly confessed how much I have profited by Mr. Brehm's book, and how highly I esteem it."

Sir JOHN LUBBOCK, Bart., D.C.L.:—"You have, I think, done good service in publishing them. They are certainly very admirable."  
W. B. CARPENTER, M.D., LL.D., writes:—"I can quite endorse the favorable opinions already given by distinguished zoologists as to the high character of the illustrations generally."

WE have concluded to submit for public patronage a work with the above title, being a series of exquisite Engravings representing the ANIMAL WORLD, executed with great scientific accuracy, and accompanied by full Descriptive Text, written in popular terms, so as to delight and instruct the people. Anyone who has considered the subject must be at a loss to understand why an ILLUSTRATED NATURAL HISTORY, comprehensive and at the same time popular, has not before this been published in this country. Indeed any lover of animals who has visited the great museums and zoological gardens and has had access to books of engravings in the public libraries, could not fail to remark the wealth of material in existence devoted to this subject. Being confirmed in our conviction of the desirability of such a work, we laid under contribution the best existing authorities for the production of most perfect representations of all the more important living creatures, and among the artists whose delineations will delight the reader, we may mention Harrison Weir, Wolf, Coleman, Fr. Specht, and Mutzel. By far the majority of the engravings in these volumes are from drawings made from the *living* animals, many at the Zoological Society's Gardens in London, England.

We purpose that our patrons shall be aided and interested in their study by such an array of pictures as has never before embellished any Natural History. In numerous instances the engraving is printed in oil-colors, and this portion of the illustrations has been taken charge of by Messrs. L. Prang & Co., of Boston, who we believe rank foremost for high artistic results in this department of printing. These Oleographs were copied under the superintendence of Mr. Prang from the renowned "Tafeln" of "Brehm's Thierleben," so that they may be declared perfectly reliable.

We sought competent advice from various sources as to the most suitable text that should accompany this panorama of handsome Engravings. It was found impossible to embody all the present ideas of naturalists in a single work like this on account of the rapid advances and constant changes in their knowledge of, and habits of thought respecting, the Animal World. And it seemed to us correct that the true object of Zoology is not to arrange, to number, and to ticket animals in a formal inventory, but to inquire into their life-nature, and not simply to investigate the lifeless organism.

What do we know of "Man" from the dissecting-room? Is it not Man, the warrior, the statesman, the poet, etc., that we are interested in? With all veneration which attaches itself to those who are the accredited possessors of abstruse learning, their inordinate use of phraseology detracts too much, we fear, from the fascination that the study of the Animal World would otherwise yield, and as we are not content to have our work restricted to a favored few, we thought the task placed in our hands to be to keep the work free from a repellant vocabulary of conventional technicalities. Our endeavor has been to find an author whose work would be noted for its fund of anecdote and vitality rather than for merely anatomical and scientific presentation, and we arrived at the conclusion that we could not do better than avail ourselves of the Rev. J. G. Wood's comprehensive work—a work most popularly approved by speakers of the English language. It would be superfluous to say one word concerning the standard character of his book, from the pages of which old and young at the other side of the Atlantic have obtained so much instruction and rational amusement. Avoiding the lengthened dissertations and minute classifications of specialists, he presents to his readers in popular terms a complete treatise on the Animal Kingdom of all climes and countries. The one objection that could be urged against it was, that animal life in America might be treated more fully and American forms given more consideration. In order to obviate this drawback and to do full justice to the creatures of our own country, we secured the aid of Dr. J. B. HOLDER, of the American Museum of Natural History in New York, an undoubted American authority, who has adapted Wood's work to American wants and given prominence to American forms of Animal life.

The splendid work on Rodentia, by Allen, Coues, and others, will be fully consulted. The valuable work on North American Birds, by Baird, Brewer, and Ridgway, will be the guide in the treatment of birds. The late arrangement of the classification and nomenclature of North American Birds, by Mr. Ridgway, and the Committee on that subject of the Ornithologists' Union, will be utilized in full. The arrangement of Mammals will be after the latest classification by Professor Flower, of the Zoological Society of London. So that this will be the first popular Natural History worthy of the name that has made its appearance here, which gives due and full recognition to the animate world surrounding us.

**Terms of Publication.**

The extent of the work will be 68 parts of 28 pages, at the price of 25 cents each. The entire publication will contain 31 Oleographs and 68 Full Page Engravings on Wood, besides many hundreds of exquisite Illustrations interspersed through the text. The parts will be issued every two weeks, and are payable only as delivered. No subscriber's name will be received for less than the entire work, and anyone removing, or not regularly supplied, will please address the Publisher by mail.

N. E.

**SELMAR HESS, Publisher, New York.**



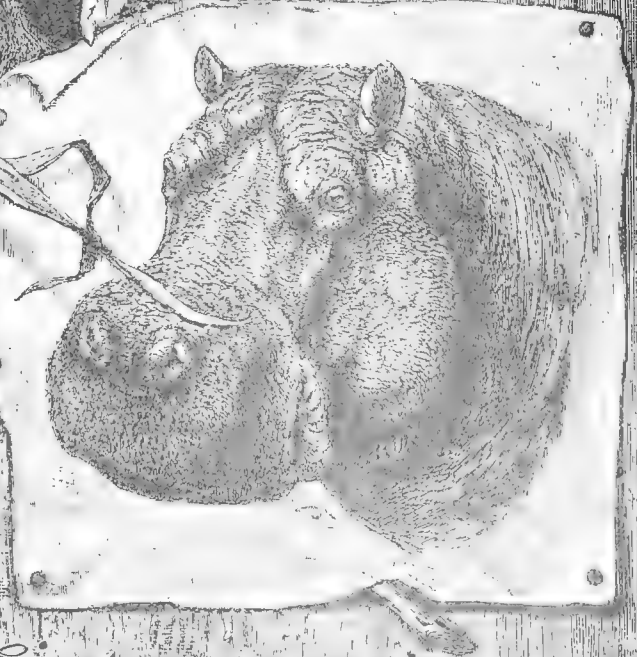
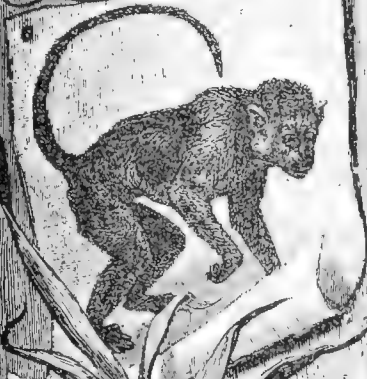
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# Animate Creation

A popular edition  
of the

Standard  
Natural  
History

Our  
Living  
World



Selmar Hess,  
Publisher  
New York



direction for its expected prey, as soon as the hood is removed from its eyes. Lastly, the teacher mounts on horseback, and holding in his hand a long string, the other end of which is attached to the skin, he darts off at full gallop, so that the Falcon is forced to put out its best speed before it can overtake the horse or pounce on the skin as it flies leaping and striking along the ground. On the first two or three days, the Falcon is almost quite breathless when it has overtaken the horse, and sits panting, with open beak, upon the skin; but in a week or so, it becomes much stronger, and is not in the least distressed by its severe chase.

To teach the bird to pounce upon herons, buzzards, kites, or other winged prey, a stuffed skin is employed after much the same fashion that is followed with the hare skin. Instead, however, of being dragged along the ground, the skin is flung into the air, and the bird encouraged to pounce upon it before it reaches the ground. In all cases the attendants keep up a great noise and shouting as soon as the Falcon begins to feed, in order to accustom the bird to the uproar which is the inevitable concomitant of the chase. Horses and dogs are then brought close to the feeding bird, and the dogs are encouraged to break out in full cry.

When the bird has become sufficiently docile to recognize its keeper and to know his voice, it is then instructed to come to his hand when called. This accomplishment is taught by means of a "lure" and a whistle. The lure is a gaudy apparatus of feathers and leather, on which is placed a small piece of some special dainty. The Falcon is encouraged to jump on the lure and devour the food, the whistle being blown continually while the bird is eating. Next day the teacher stands at a few yards' distance from his pupil, blows the whistle, exhibits the lure, and permits the bird to make its little feast. In a very short time the sound of the whistle attracts the attention of the Falcon, which immediately looks around for the lure and sets upon it at once. When the huntsman takes the field, the lure is attached to a leathern strap, and slung to the side of the horse, so that whenever a flying Falcon is to be recalled, the huntsman whistles sharply in order to attract the bird's attention, and at the same time swings the lure round his head, so as to render it more visible to the bird.

This process of training, of which a very slight and rapid sketch has been given, occupies from six weeks to two months, whereas that of the peregrine, goshawk, or merlin only requires some fifteen or twenty days. Even when the whole series of instructions has been completed, its ultimate success is very dubious, for it sometimes happens that when the bird finds itself wholly at liberty for the first time, it forgets all its teaching, and, heedless of lure or whistle, flies exultingly to its rocky home.

The color of the adult Jerfalcon is nearly white, being purely white on the under surface and flecked with narrow transverse bars of grayish-brown upon the upper parts. The sharp claws are black, the beak of a bluish-tint, and the cere, tarsus, and toes yellow. When young, however, the bird presents a very different aspect, and would hardly be recognized as belonging to the same species. In its earlier stages of life it is almost wholly of a grayish-brown tint, the feathers being slightly marked with a little white upon their edges. As the bird increases in age the white edges become wider, and by degrees the entire feather is of a snowy whiteness. The name Jerfalcon is supposed to be a corruption of "Geyer-falcon," or Vulture Falcon.

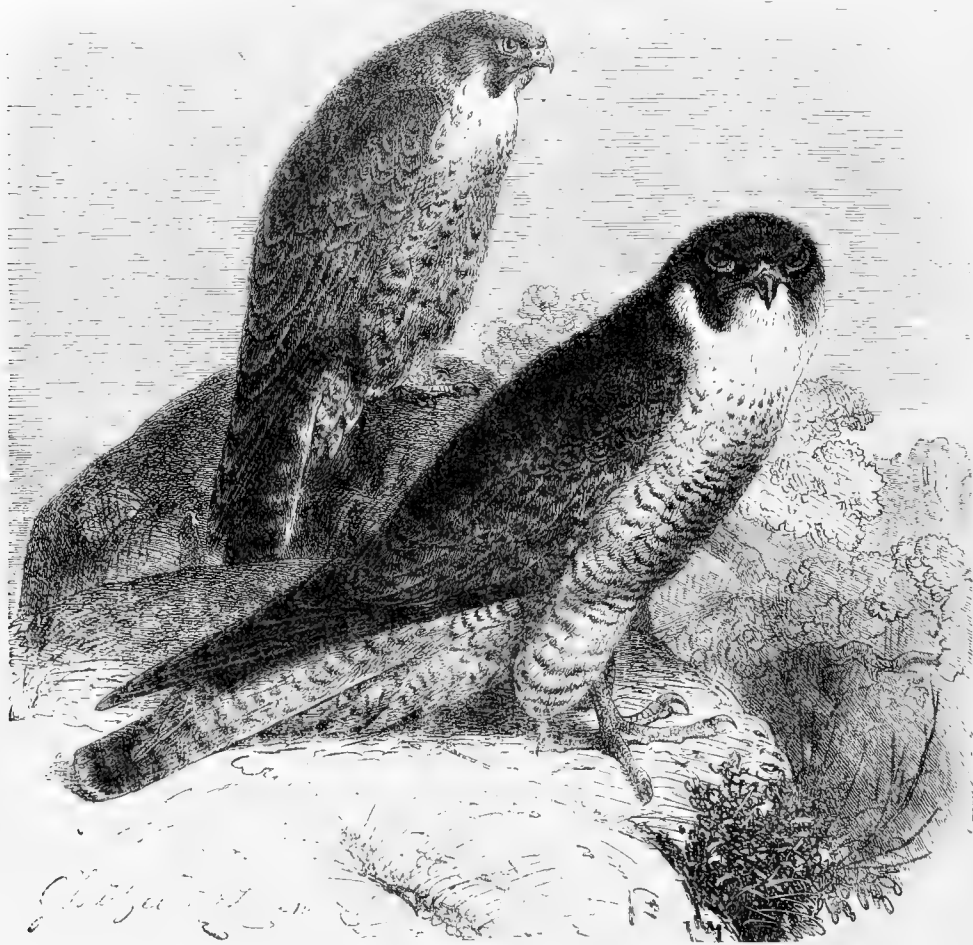
The Gerfalcon (*Falco gerfalco*), a most noble bird, is native in Greenland and the continent above Hudson's Bay. It breeds in the latter region. It is also found in all other circum-polar localities.

Two distinct varieties are recognized. One being quite white, much like the snowy owl. The other has a bluish tinted plumage, with large transverse bands of plumbeous color. Specimens are occasionally taken in New England. This bird is among a few that are regarded as destined soon to be reduced well nigh to extinction. It is now very rare, and specimens are held as valuable acquisitions to cabinets. The Central Park Museum has six superb specimens, including three varieties. One is the McFarlane bird—variety *sacer*. They usually build near the breeding places of sea fowl, upon which they prey.

LESS powerful, but more graceful than the Jerfalcon, the PEREGRINE FALCON has ever held the first place among the hawks that are trained for the chase.

The temper of the latter bird is incomparably more docile than that of the former, the

lessons of the instructor are received with more readiness, occupy far less time, and seem to be more powerfully impressed upon the memory. For training this bird the process is very similar to that which is employed in the instruction of the Jerfalcon, but the system is not nearly so severe, and occupies scarcely one-fourth of the time that is needful to render the fierce and fearless Jerfalcon subservient to the dominion of man. The whole process is very simple in its theory, being based on the principle of placing the bird in such situations that it is absolutely unable to disobey the orders which are given by its trainer, and consequently imagines that it is equally bound to obey every order which he may afterwards give. In order



PEREGRINE FALCON.—*Falco peregrinus*.

to obtain this result two qualities are needful in the instructor, namely, patience and gentleness, for without these traits of character no man can hope to be a successful teacher of hawks, or, indeed, of any other being whatever.

When thoroughly tamed, the Peregrine Falcon displays a very considerable amount of attachment to its owner, and even while flying at perfect liberty will single him out from a large company, fly voluntarily towards him, and perch lovingly on his hand or shoulder. Several of these beautiful birds that had been tamed by Mr. Sinclair were so thoroughly domesticated that they were permitted to range at liberty, and were generally accustomed to perch on a tree near the house. One of these Falcons was permitted to seek her own food whenever she could not find any meat upon the accustomed spot, and would take flights of several miles in extent. Yet she would immediately recognize her master if he were out shooting, and would aid him by striking down the grouse as they rose before his dogs. On one occasion the fearless bird met with an accident which might have proved fatal, but was ultimately found to be of little consequence. Unaware of the presence of his Falcon, her master fired at a grouse, and

as the bird was at the same moment making a "stoop" upon the bird, one of the leaden pellets struck the Falcon, and inflicted a slight wound.

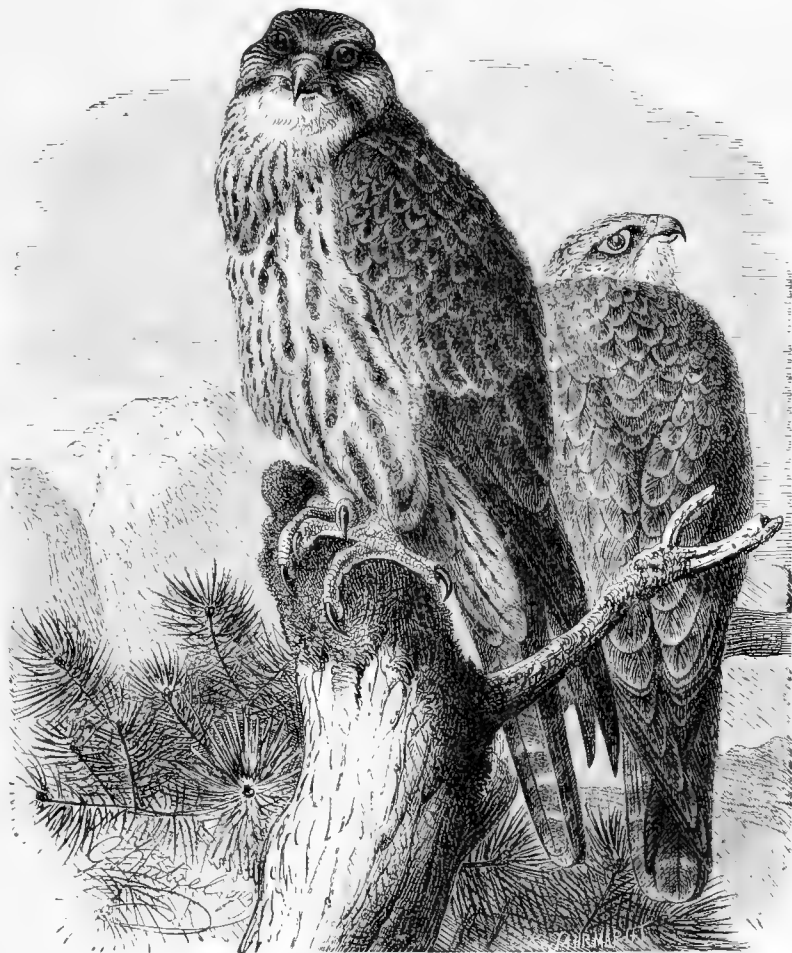
The dash and fury with which this hawk makes its stoop is almost incredible. In a coast town a part of a greenhouse had been divided off by wire, so as to form an aviary, the roof of the aviary being the glass tiling of the greenhouse. In this edifice were placed a number of small birds, which attracted the attention of a Peregrine Falcon that was passing overhead. Totally unmindful of all obstacles, he shot crashing through the glass without injuring himself in the least, seized one of the terrified birds, and carried it off in safety. Several other birds were found dead, apparently from fright, or perhaps by the shock of the hawk and glass which came flying among their number.

It is said that when the Peregrine Falcon takes up its residence near the moors it is a very mischievous neighbor, slaughtering annually great numbers of grouse. Although very fond of pigeons and similar game, the Peregrine Falcon seems to have sufficient sporting spirit to prefer the grouse to the pigeon, and never to trouble itself about the latter bird as long as it has a chance of obtaining one of the former.

The American Peregrine Falcon (*Falco peregrinus*), called also Duck Hawk, is one of the most graceful and powerful of the race. It is found over the entire continent and adjacent islands. A northern variety is thought to be identical with the European species.

This bird is a resident of New England throughout the year, usually seen on the sea shore; its trivial name indicates its favorite prey. It is a very powerful and swift flyer, the terror of water-fowl, its legitimate prey. It abounds in considerable number in Labrador. Audubon found them breeding on the same rocks with cormorants. With the hunter along our coast this bird has a reputation for most extraordinary daring. He rushes with intense impetuosity upon his prey, and often strikes it dead before it reaches the ground. He is known to attack wild geese and bear them down from the flock as they pass over at considerable height.

This is the bird *par excellence* known in heraldry. It is graceful and sagacious in aspect. Two prominent characters distinguish it from other species: a broad patch of black below the eye, and very large feet. Its extent of wing is three feet eight inches. It is notable that this bird is considerably smaller than several of the buzzards that feed on the insignificant insect food.



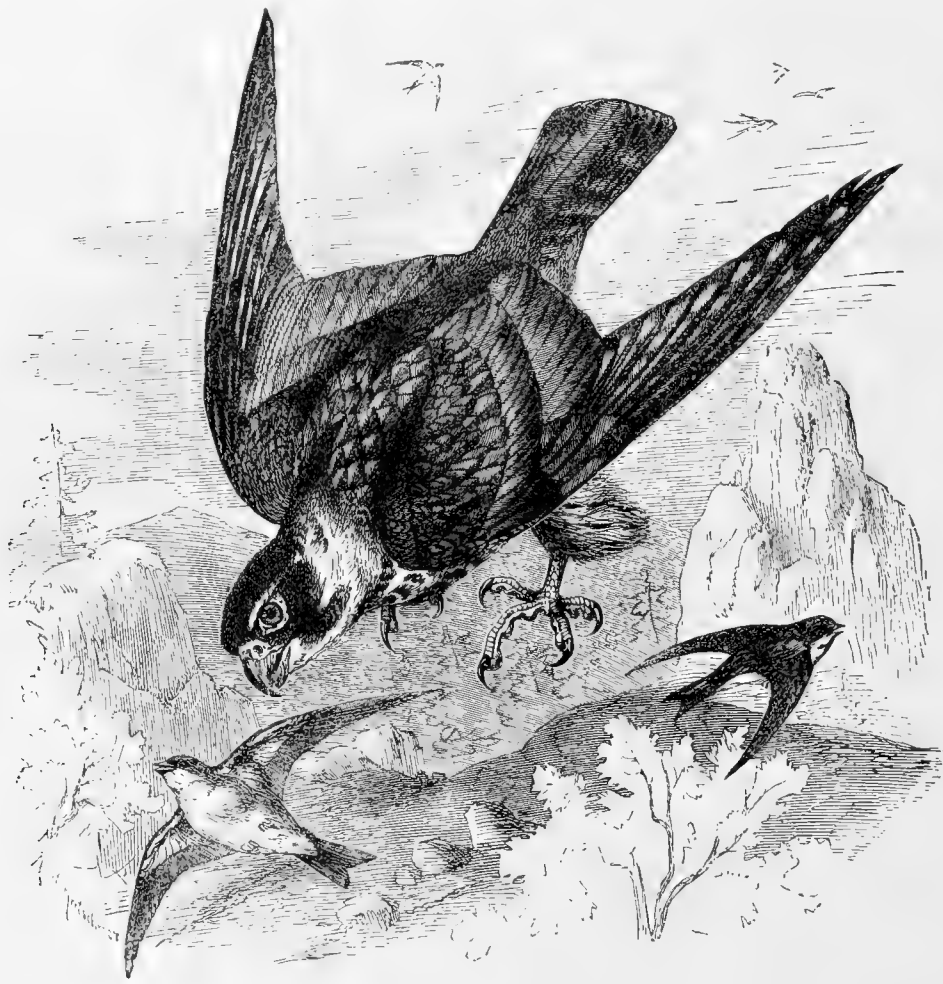
LANNER.—*Falco lanarius*.

THE true LANNER (*Falco lanarius*) is a native of northern Europe. It is a rather large bird, considerably exceeding the Peregrine Falcon in its dimensions, and being little inferior in size to the Jerfalcon itself. This bird was formerly

much esteemed for the purpose of falconry, and was specially trained to fly at the kite, a bird which is too strong to afford the ordinary Peregrine Falcon any possible hope of success. The male of this species is considerably smaller than his mate, and is therefore called a Lanneret.

THE PRAIRIE FALCON (*Hierofalco mexicanus*), called also the American Lanner, is, according to Prof. Baird, so near the European form that it is difficult to separate them. Dr. Cooper regards it as the shyest and swiftest of hawks. It frequents prairies, and feeds on hares, grouse, and even larger game at times.

THE small, but exquisitely shaped Hobby is found spread over the greater part of the Old World, specimens having been taken in northern Africa, and in many portions of Asia, as



HOBBY.—*Falco subbuteo*.

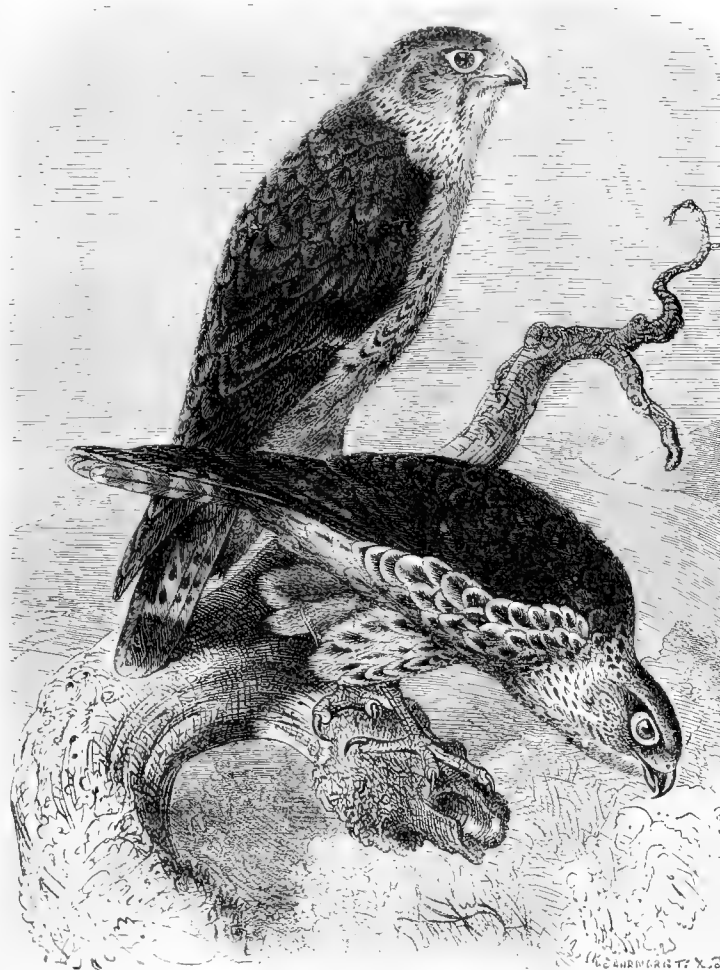
well as in Europe, which seems to be its chief residence. From all accounts, it seems to be rather a local bird, being partially influenced by the nature of the ground and the quantity of food which it is able to procure.

This bird appears to favor inland and well-wooded lands rather than the sea-shore or the barren rocks; thus presenting a strong contrast to the Peregrine Falcon. We may find an obvious reason for this preference in the fact that a considerable proportion of its food is composed of the larger insects, especially of the fat-bodied beetles, which it seizes on the wing.

ALTHOUGH the smallest of the Falconidae, being only from ten to thirteen inches in length, according to the sex of the individual, the MERLIN is one of the most dashing and brilliant of all the hawks.

This beautiful little bird is almost invaluable to the young falconer, as it is so docile in disposition, and so remarkably intelligent in character, that it repays his instructions much sooner than any of the more showy, but less teachable Falcons. Every movement of this admirable little hawk is full of life and vivacity; its head turns sharply from side to side as it sits on its master's hand, its eyes almost flame with fiery eagerness, and it ever and anon gives vent to its impatience by a volley of ear-piercing shrieks. There is, however, a singular capriciousness in the character of the Merlin, for it seems to be so sensitive to certain influences which are quite imperceptible to human organization, that the same individual which on one day or at one hour is full of fierce energy, chasing large and powerful birds of its own accord, following the erratic course of the snipe with a wing as agile and far more enduring than its own, or shooting suddenly through the tangled branches of the under-wood in pursuit of some prey that is fleeing to the leafy abode for refuge, will at another time become listless and inanimate, and even if it be induced to fly at its quarry, will turn suddenly away as if alarmed, and return languidly to its perch.

THE PIGEON HAWK (*Aesalon columbarius*). This is a small bird, but little larger than the domestic Pigeon. It is bold and swift of flight. It is a common visitor in New England during the spring and autumn. It is found in every portion of the continent of North America. Though so small, it has been used in falconry. Several varieties are known in different parts of the country.



MERLIN.—*Falco aesalon*.

THE APLOMADO FALCON (*Rhynchofalco fusco-caerulescens*) is a southern species, inhabiting all parts of South America, and reaching north as far as New Mexico. It is about the size of the latter species, and has been trained as a hunting Falcon. The Chilians esteem it highly as such.

The genus *Hypotriorchis* is rather rich in interesting birds, among which may be noticed the Pigeon Hawk of America and the Chicquera Falcon of India.

The former of these birds is found not only on our continent, but also in parts of the West Indies. Generally, however, it is found in Southern America, where it is rather plentiful, and may be seen hunting for its prey in the proper localities. It is a spirited and swift-winged bird, although not a very large one, measuring barely eleven inches in length, and not quite two feet in the expanse of wing. A rather remarkable peculiarity in its plumage is found in the feathery covering of the legs, which is singularly long, the tips of the feathers reaching nearly to the feet.

The usual prey of the Pigeon Hawk consists of mice, small birds, reptiles, and various

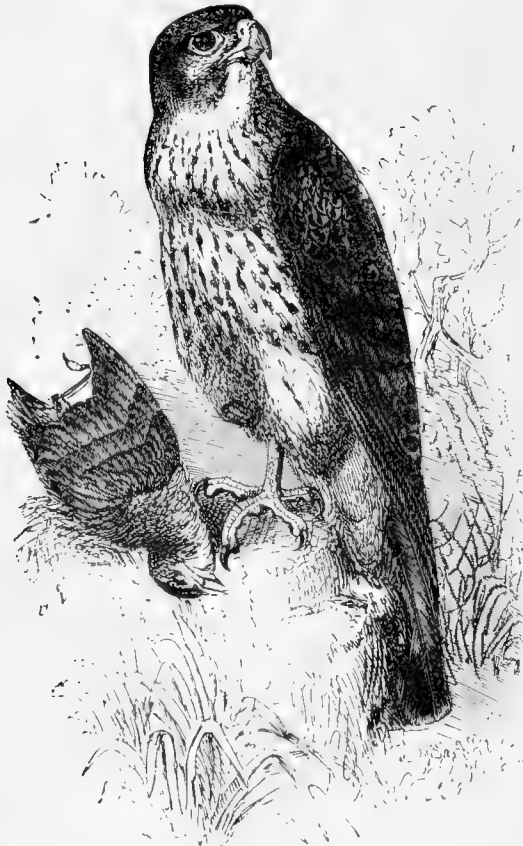
insects, and it has a remarkably sharp eye for any unfortunate half-fledged bird that may have strayed from its nest, or crippled itself in its first endeavors to fly. It is a terrible foe to the reed birds, grackles, and other similar members of the winged race; hovering continually about the crowded flocks, and picking off the stragglers or the weakly at leisure. Sometimes, however, the Hawk seems to lose patience, and dashing suddenly into the flock, will bear away an unfortunate bird from the midst of its companions. It has derived the name of Pigeon Hawk, because it is well known as one of the numerous birds of prey that hover around the myriad armies of the Passenger Pigeon, as they make their wonderful migrations which have rendered them so famous.

Further information concerning this bird may be obtained from the pages of Wilson and Audubon.

THE last member of this genus which can be separately noticed in the present work is the CHICQUERA FALCON, of India. This bird is often trained by the native sportsmen, and employed for the purpose of chasing the bustard and similar game. It is not good at an aerial flight, and therefore is not used against soaring game; but when employed in the pursuit of the running birds, its peculiar low, skimming flight is admirably adapted to the purpose. In order to keep the bustard from taking to wing, a Hawk of another species is trained to fly above the quarry and beat it down whenever it endeavors to raise itself into the air and escape by flight.

THIS fine bird, which is called the BROWN HAWK, or CREAM-BELLIED FALCON, by civilized men, and the BERIGORA by the natives, is an inhabitant of Van Diemen's Land and New South Wales.

It is a rather sluggish and slow-moving bird, easily obtaining a sufficiency of food, and then settling down upon some neighboring tree until the calls of hunger urge it to fresh exertions. The principal food of the Brown Hawk consists of insects, although it will also eat carrion, and kills mice, small birds, lizards, and other creatures. The land-holding colonists think it to be a great pest, because it sometimes picks up a young chicken or two; but in the opinion of Mr. Gould it is in reality one of the farmer's best friends, on account of its services in destroying the insect hosts with which Australia is overrun. Although it is not a gregarious bird, living only in pairs, it may be seen assembled in flocks of a hundred or more, congregated over the localities where the destructive caterpillars most abound. So plentiful is this bird, and so sluggish is its character, that they may be seen seated in the tall eucalypti, thirty or forty occupying a single tree, and all so ill-disposed to move that any number of them may be killed without difficulty.



KESTREL.—*Falco tinnunculus*.

THE common KESTREL is one of the most familiar of the European Hawks, being seen in almost every part of the country where a mouse, a lizard, or a beetle may be found.

It may be easily distinguished while on the wing from any other hawk, by the peculiar manner in which it remains poised in air in a single spot, its head invariably pointing towards the wind, its tail spread, and its wings widely extended, almost as if it were a toy kite raised in the air

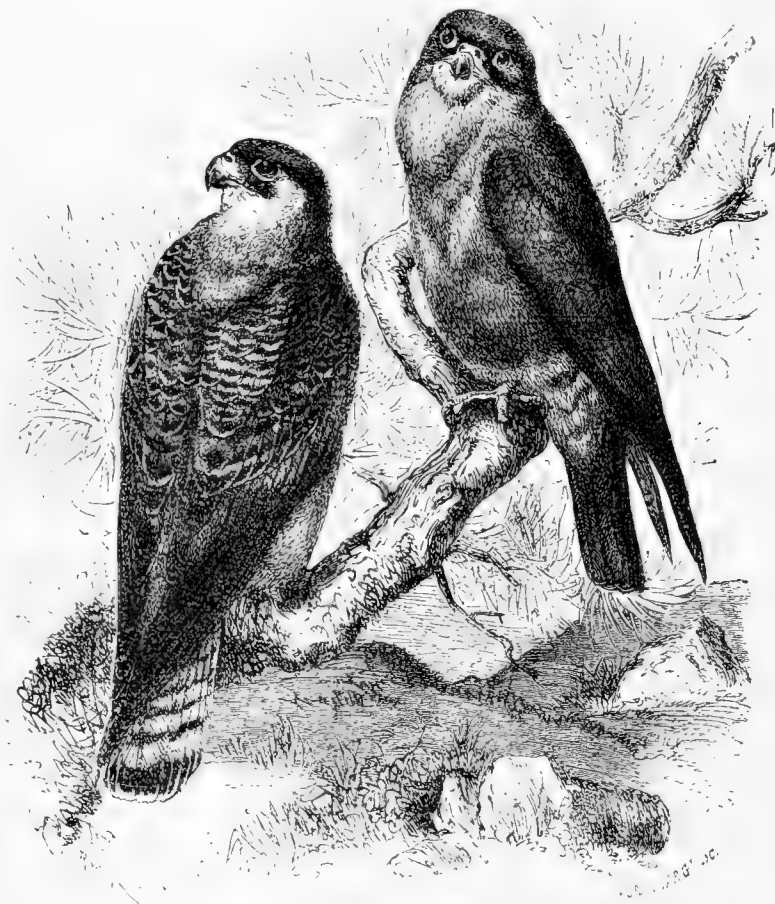


by artificial means, and preserved in the same spot by the trammels of a string. While hanging thus strangely suspended in the air, its head is bent downwards, and its keen eyes glance restlessly in every direction, watching every blade of grass beneath its ken, and shooting down with unerring certainty of aim upon any unhappy field-mouse that may be foolish enough to poke his red face out of his hole while the Kestrel is on the watch. The marvellous powers of the Kestrel's eye may be easily imagined by any one who has any experience of the field-mouse and the extreme difficulty of seeing the little creature while it is creeping among the grass straws. Its ruddy coat blends so well with the mold, and the grass blades bend so slightly under the pressure of its soft fur, that an unpractised eye would fail to detect the mouse even if its precise locality were pointed out.

The number of field-mice consumed by this hawk is very great, for it is hardly possible to open the stomach of a Kestrel without finding the remains of one or more of these destructive little animals. On account of its mouse-eating propensities, the Kestrel is a most useful bird to the farmer, who in his ignorance confounds all hawks together, and shoots the Kestrel because the kite steals his chickens.

ANOTHER species, which belongs to the same genus as the kestrel, is the RED-FOOTED FALCON OF INGRIAN FALCON (*Tinnunculus vespertinus*), having its usual residence in Austria, Russia, and Poland. Specimens have also been taken in Athens, Nepál, and Tunis, so that the species seem to have a very extensive range of country. It goes through considerable changes of tinting before its plumage attains the adult colors, but the full-grown bird may readily be distinguished from the common kestrel by the legs and toes, which are of a reddish flesh-tint, instead of the yellow hue which is found in the former bird. The claws, too, instead of being black, are yellowish-white, deepening into a grayish-brown on the tips.

AMONG other members of the same genus, we may notice the LITTLE FALCON (*Tinnunculus sparverius*) of America, an interesting account of which bird may be found in the pages of "Wilson's American Ornithology." Its habits are very similar to those of the common kestrel, and, like that bird, it preys chiefly on mice, lizards, grasshoppers, and the larger insects. It will, however, attack and carry off chickens and the young of other birds during the breeding-season. Its nest is always made on some elevated situation, and is generally found on the top of a lofty tree, although the bird sometimes builds upon rocks, in the crevices of towers, or even in the hollows of trees.



RED-FOOTED FALCON.—*Falco vespertinus*.

THE NOTCHED FALCON is remarkable for the peculiar form of the beak, which exhibits a double notch or tooth on each side, and has therefore been distinguished by the specific title of *bidentatus*, or "two-toothed."

This species is a native of southern America, being found most commonly in Brazil and Guinea. In size it is about equal to the common kestrel, its length being thirteen or fourteen inches. The general color of the Notched Falcon is a slaty-blue or blue-gray upon the upper surface of the body, and the tail is dusky-brown, marked with several transverse bars of grayish-white. The throat and under tail-coverts are white, and the breast and abdomen are rusty-red, marked with undulating streaks of yellowish-white. Very little is known of the habits of this species, but on account of the peculiar form of its beak, it cannot be passed over without notice.

THE members of an allied genus, termed *Ierax*, also possess a similarly formed beak, but the structure of the wings and arrangement of the feathers are so different as to give reason for placing the bird in a separate genus. One of the most beautiful examples of this genus is the little BENGAL FALCON (*Ierax cœrulescens*), a native of Java, Borneo, and many parts of



BENGAL FALCON.—*Falco cœrulescens*.

India. This tiny Falcon is barely six inches in length, and is popularly known in India by the name of "Mooty," a word which signifies "a handful," and is given to the bird because, when it is flown at game, it is taken in the hand and flung at the quarry as if it were a stone rather than a living missile. It is a most daring little bird, and has been known to strike in succession ten or twelve quails before alighting. The general color of this species is bluish-black above, and rusty-white below. The plumage of the thighs is long and silken, and the wings are comparatively short.

WE now come to a large and important genus of hawks, which is represented in England by the GOSHAWK.

This handsome bird is even larger than the jerrfalcon, the length of an adult male being eighteen inches, and that of his mate rather more than two feet. It is not, however, so powerful or so swift-winged a bird as the jerrfalcon, and its mode of taking prey is entirely different.

The jerrfalcon dashes at every flying creature that may take its fancy, and attacks successfully the largest winged game. But the Goshawk, although possessed of the most undaunted courage and of great muscular power, is unable to cope with such opponents, and prefers terrestrial to aerial quarry. Owing to the shape of the wing, and comparative shortness of the feathers, the Goshawk is unable to take long flights, or to urge a lengthened and persevering chase. Moreover, although its courage is of the most determined character, it soon loses heart if often baffled by the same quarry, and in such cases will turn sulky and yield the chase.

When trained, the Goshawk is best employed at hares, rabbits, and other furred game, and in this particular sport is unrivalled. Its mode of hunting is singularly like that of the chetah, which has already been mentioned in the volume on the Mammalia. Like that animal, it is not nearly so swift as its prey, and therefore is obliged to steal upon them, and seize its victim by a sudden and unexpected pounce. When it has once grasped its prey, it is rarely found to loose its hold, even by the most violent struggles or the most furious attack. The gripe is so enormously powerful, that a Goshawk has often been observed to pounce upon a large hare, and to maintain its hold even though the animal sprang high into the air, and then roiled upon the ground, in the vain hope of shaking off his feathered antagonist. Only the female bird is able to cope with so powerful a creature as a full-grown hare or rabbit; for the male, although more swift of wing, and therefore better adapted for chasing birds than the female, is comparatively feeble.

It never attempts to follow its quarry into cover, as is done by the Peregrine and Merlin, but if its intended prey should seek safety in some place of refuge, the Goshawk perches upon a convenient bough and waits patiently. As the hawk is very endurant of hunger, although sufficiently ravenous when it meets with a supply of food, it "wins, like Fabius, by delay," and pounces upon the unlucky quarry, as it steals out in search of food or water. When it has once seized its prey, it is full of exultation, and being generally rather of a ferocious disposition, is apt to turn savagely upon the hand that attempts to remove it from its victim. Its temper, indeed, is so bad, that if it should happen to escape from its jesses and get among other Falcons, it will almost certainly attack and kill as many of them as it can reach. For the same reason it needs to be kept constantly hooded, and is less to be trusted at liberty than any other Falcon. Its short flights, however, render its recapture a comparatively easy matter, so that there is but little danger of losing it.

Its constitution is very hardy, and as it will feed on almost any animal nourishment, it gives very little trouble to its owner.

This species is found spread over nearly the whole of Europe and Asia, and has also been seen in Northern Africa. The nest of this bird is generally placed on the topmost boughs of some lofty tree, and the eggs are of a uniform spotless blue-white. Their number is from three to four, and the young are hatched about May or the beginning of June.



GOSHAWK.—*Astur palumbarius*.

In color, the adult birds of both sexes are very similar to each other, the tinting of the plumage being briefly as follows: The top of the head and the entire upper portions of the body and wings are gray-brown, and the under portions of the body, together with a band over the cheeks and the back of the neck, are nearly white, diversified with numerous irregular spots, splashes, and partial bars of black. The cheeks and ear-coverts are dark grayish-brown, the upper surface of the tail is the same hue as the back, and barred with dark brown; the under tail-coverts are white. The cere, legs, and toes are yellow, the claws black, and the beak blue-black. In the female the gray brown of the back is a more ruddy hue, and in the young the plumage is curiously diversified with reddish-white, buff and gray.

THE AMERICAN GOSHAWK (*Astur atricapillus*)—Wilson says of this magnificent bird: "If this be not the celebrated Goshawk, formerly so much esteemed in falconry, it is very closely allied to it." Audubon says: "His flight is extremely rapid and protracted. He sweeps along the margin of the fields, through the woods, and by the edges of ponds and rivers, with such speed as to enable him to seize his prey by merely deviating a few yards from his course, assisting himself on such occasions by his long tail, which, like a rudder, he throws to the right or the left, upwards or downwards to check his progress, or enable him suddenly to change his course. At times he passes like a meteor through the underwood, where he secures hares and squirrels with ease. Should a flock of wild pigeons pass him, he immediately gives chase, soon overtakes them, and passing into the middle of the flock, scatters them in confusion, when you may see him emerging with a bird in his talons, and diving towards the depths of the forests to feed upon his victim. When travelling he flies high, with a constant beat of wing, seldom moving in large circles like other Hawks."

This Hawk is regarded as the one *par excellence* as a trained hunter. It is the species most frequently alluded to in falconry. The female is, as is common to the Hawks, much the largest. She is able to bear off a hare of considerable size.

The Goshawk is the handsomest of the falcons; its light-colored plumage and great size suggest the gerfalcons. The wonderfully erect and noble attitude of this bird is a pleasurable sight.

THE SHARP SHINNED HAWK (*Accipiter fuscus*) is a small, slender bird, with exceedingly delicate and long legs. It is known to the entire continent of North America.

It is one of the most common summer residents in New England. So impetuous is this little Hawk, Mr. Nuttall says he has been known to dash through two distinct glass doors in his effort to reach his prey. It is distinguished in its flight by a peculiar manner; its short wings and long tail giving it a characteristic aspect. It is a very much like the Goshawk in miniature.

Wilson was greatly impressed with the dash of this delicate little bird. Its long legs appear no larger than pipe-stems, yet they bear an important part in the action of the little creature. "It seemed to throw itself from one quarter of the heavens to another, with prodigious velocity; inclining to the earth, swept suddenly down into a thicket, and instantly reappeared with a small bird in his talons. The rapidity and seeming violence of these zigzag excursions were really remarkable, and appeared to be for seizing his prey by sudden surprise and main force of flight." The female of this species is remarkable for its greater size than the male.

Another species of *Nisus* is named for Dr. Cooper, of California. It is found in most parts of North America.

HARRIS' BUZZARD (*Antinor unicinctus*) is a southern species, with a limited range. Like most of the Buzzards it feeds on mice and reptiles, and is heavy and sluggish in habit.

GRUBER'S HAWK (*Onychotes gruberi*). This single species of a genus peculiar to this continent is so rare that only one specimen is known; that is preserved in the Smithsonian Institute.

A VERY beautiful species of this genus, the NEW HOLLAND WHITE EAGLE (*Astur nova hollandia*) is found in Australia, and is remarkable for the frequency with which its plumage

assumes a snowy-white hue, the ordinary coloring being gray above and white below. The eyes of this bird are very curious, for in some specimens they are of a rich brown, in others of a topaz-yellow, while in others they are ruby-red. The cere, legs, and claws are yellow, and the bill black. The disproportion between the comparative dimensions of the sexes is remarkably great in this species, the male being barely half the size of his mate.

THE well-known SPARROW HAWK is almost as familiar to us as the kestrel, the two birds being, indeed, often confounded with each other by those who ought to know better. This fine and active little bird is an inhabitant of many portions of the world, being very common in nearly all parts of Europe, equally so in Egypt and Northern Africa, and being very frequently found in India and other Asiatic countries. The genus *Accipiter* finds representatives in every quarter of the globe, species being found in North and South America, in Madagascar, in Western and Southern Africa, in Java, and Australia.

The Sparrow Hawk is not so often seen as might be imagined, for it is a most wild, shy, and wary bird, and never ventures near human dwellings, or within a considerable distance of human beings, unless urged by hunger or carried away by the ardor of pursuit. As a general rule, to get within ordinary gunshot of a Sparrow Hawk is no easy matter; but if the Hawk be watched as he is hovering about a flock of sparrows or rather small birds, he may be approached without much difficulty, his entire attention being engaged on his expected prey. Indeed, while engaged in the chase, the ardor of this bird is so great, that all its faculties seem to be absorbed in the gratifica-

tion of the ruling passion, and it is evidently unmindful of anything but its flying prey. A Sparrow Hawk has even been known to dash furiously at a man who endeavored to rescue a small bird which it had attacked.

The courage of the Sparrow Hawk is of the most reckless character, for the bird will fly unhesitatingly at almost at any other inhabitant of air, no matter what its size may be. Mr. Thompson relates the following curious instance of the exceeding audacity of this bird:

“Once, at the end of July, when walking along the sides of a river, I was attracted by the loud screams of herons, which appeared above the trees at the north-west extremity of a park. A couple of these giants of the air kept flying above the tops of the trees with tremendous uproar in consequence of the presence of a single Sparrow Hawk. This bird was circling about, and the herons awkwardly and quite unavailingly endeavoring to strike him. Flying quite



SPARROW HAWK.—*Astur nisus*.

at ease, his turns were so short, and at the same time so full of grace, that he seemed to laugh to scorn their heavy, lumbering movements.

“The herons’ savage cries were apparently—evidently might almost be said—caused by the Hawk’s make-believe attempts to carry off their young, as they were particularly violent and vociferous whenever he made a swoop—as I remarked him to do thrice—at the top of a particular tree. It seemed a mere play or bravado on the part of the Hawk, as he could easily, in spite of the herons, have borne off the contents of the nest any time, were the prey not too bulky for his purpose. Mr. R. Langton has not only observed a wild Sparrow Hawk strike his sea-eagles when perching on their sheds, but when his golden eagle was on the wing, has seen one of these birds strike it when passing, and once even witnessed the Hawk’s turning back and repeating the impertinence.”

The same author also mentions several instances of the extreme audacity of the Sparrow Hawk when urged by hunger. One of these birds actually snatched up a little white peachick, selecting it from the rest of the brood, while a lady was engaged in feeding it. A similar circumstance occurred to a gamekeeper who was feeding young pheasants, a Sparrow Hawk suddenly sweeping down upon them and carrying off one of their number. Next day it repeated the attempt, but as the keeper had taken the precaution to bring his gun, the Hawk fell a victim to his own temerity. Again, as some persons were shooting dunlins from a boat, a Sparrow Hawk suddenly shot through the smoke of the discharged gun, and poisoning itself for an instant, swept a wounded dunlin from the surface of the water with such marvellous dexterity, that it did not wet a feather of its wings.

In consequence of the headlong courage possessed by this handsome little Hawk, it is very valuable to the falconer if properly trained, for it will dash at any quarry which may be pointed out to it. Unfortunately, however, the Sparrow Hawk is one of the most difficult and refractory of pupils, being shy to a singular degree, slow at receiving a lesson and quick at forgetting it. Besides, its temper is of a very crabbed and uncertain nature, and it is so quarrelsome, that if several of these birds should be fastened to the same perch, or placed in the same cage, they will certainly fight each other, and, in all probability, the conqueror will eat his vanquished foe. Such an event has actually occurred, the *victrix*—for it was a female—killing and devouring her intended spouse.

Few birds are so easily startled as the Sparrow Hawk, for even when it is comparatively tame, the presence of a stranger, or even the shadow of passing bird in the air, will throw it into a paroxysm of excitement, during which it seems to lose all consciousness of external objects. This curious trait of character a practical falconer describes most graphically in the following terms: “The young falconer will naturally be disappointed to find the bird which came so well to hand yesterday, now on the first day of its being carried, stare wildly with its mad eyes, and bate violently. It will probably hang down at the end of the jesses and swivel, and dart off again the moment it is quietly replaced. More than this, the very power of standing will appear to have left it; the claws will be clenched and distorted; the whole creature will be changed; instead of a tolerably bold and very handsome bird, the transition of a few minutes will present you with a terrified, crouching, vicious, abject wretch; a horrible mixture of fright and feathers.

“Some people think that the helpless look of the feet and legs arises only from temper, and that it is a sham. It may arise from temper, but it is not a sham. It appears to me that this bird’s brain is overcharged with electricity or something fearfully subtle; and that on the smallest provocation, these fluids shoot through the whole frame, overturning and decaying everything that is healthy and regular. The Sparrow Hawk’s legs are, during these fits of fright and passion, in a temporary paralysis. Still, they are of short duration, and when the bird is trained, they pass away altogether.” The same writer sums up the character of the Sparrow Hawk as a pupil in the following energetic language: “The Sparrow Hawk is, in my opinion, the wildest, in some sense the most intractable, the most ungrateful, the most provoking and temper-trying of all birds or beasts that ever were taken under the care of man from the beginning of the world.”

With this writer's opinion my own experience to a very great measure coincides, though as I never attempted to train a Sparrow Hawk to falconry, I cannot answer for some of its deficiencies.

One of these birds afforded an excellent example of the shyness and timidity above mentioned. Although he was most kindly treated and liberally fed, he used to scream in the most ear-piercing manner when approached, even by the person who generally carried his food. The only companion whose presence he would tolerate, was a little Skye terrier, named Rosy, and the two strangely matched comrades used to execute the most singular gambols together, the dog generally taking the initiative, and persecuting the Hawk until she forced him to fly. The great object of the dog was to catch the Hawk by the wing, while the bird gave his attention to flying at the dog's throat, hanging on by his claws and boxing her ears with his wings until she was fain to shake him off. Once, Rosy caught the Hawk by his tail, and having the game all her own way, careered round the yard in great exultation, dragging after her the unfortunate Hawk, who could not possibly resist or retaliate, and was reduced to scream abjectly for succor.

Another Sparrow Hawk which I procured for some time was, curiously enough, a most arrant coward, and so far from chasing the little birds, as was his duty, and keeping them from eating the peas and fruit, he allowed them to bully him shamefully, and would run away from a wagtail. The little birds soon learned his incapacity, and the blue titmice used to watch the time when he was fed, and run off with the meat before his eyes. The bird was not a young one when it came into my possession, and had probably been broken in spirit by cruel treatment.

The credit of the race was, however, better kept up by a Sparrow Hawk that belonged to a lady friend, but it was not taught any artificial accomplishments. The bird took a great fancy to its mistress, and would perch on her shoulder or eat from her hand. But it would permit no other person to touch it, neither would it allow any one to approach its mistress while it was at hand. In such cases it would fly savagely at the fancied foe, and was so determined in its attack upon the ankles, that any one who attempted to cross its path was obliged to fend it off with an umbrella, which it would fight and scold as it was being pushed away.

It was a terrible thief, and crafty to a degree. Once, having made itself acquainted with the fact that a partridge was hanging in the larder, it hung about until it saw a servant approaching the spot. As soon as she opened the door, the Hawk shot noiselessly over her head, and sat quietly until she had retired. It then proceeded to demolish the partridge. Between this servant and the Hawk there was a deadly feud, owing to a depredation committed by the bird and resented by the servant. A chicken had just been plucked and was lying on the kitchen table, when the Hawk glided softly through the door, and perching on the chicken, had devoured its breast before the theft was discovered. The servant struck it with a broom, when the bird flew at her head, and pushing its claws into her hair, it buffeted her face with its wings, and could not be removed until it had torn out no small quantity of hair. After a while the bird disappeared, perhaps stolen, but very probably killed by its foe.

The propensity of the Sparrow Hawk to attack larger birds of prey has already been mentioned, and the creature only suffers poetical justice in being made the subject of similar attacks. The swallows and other swift-winged birds are wonderfully fond of mobbing the Sparrow Hawk, although in many instances they pay dearly for their audacity. I once saw a Sparrow Hawk that was being mobbed by a number of sand martins, and was flying about in a seemingly purposeless and bewildered manner, suddenly turn on its pursuers, seize one of them in its terrible grasp, and instantly sail away bearing its screaming victim in its talons. The Hawk was almost within reach when this circumstance occurred.

The general color of the adult male is dark brown upon the upper surface of the head, body, and wings, softening into gray as the bird increases in years. The entire under surface is rusty brown, marked with narrow bands of a darker hue; the long and slender legs and toes are yellow, as is the cere, but with a tinge of green; the long, sharp, armed claws are black, and the beak is a slate-blue, darkening towards the point. The length of the male bird is about one foot. The female, which is about fifteen inches in length, is colored differently from

her mate, the upper parts of her body and wings being hardly so rich a tint as in the male bird, and covered with numerous little white spots, caused by the white hue which is found on the base of each feather. The primaries and rectrices are of a lighter brown, and colored with transverse dark bars, and the under surface of the body is gray-white, also barred transversely. These hues are also found in the young male, who has in addition a reddish edging to the feathers of the back.

The nest of the Sparrow Hawk is placed in some elevated spot, and contains three or four eggs, rather variable in their marking, but always possessing a certain unmistakable character. The ground tint of the egg is a grayish-white, slightly tinged with blue, and a number of bold blotches of a very dark brown are placed upon the surface, sometimes scattered rather irregularly, but generally forming a broad ring round the larger end. The bird seldom troubles itself to build a new nest, but takes possession of the deserted tenement of a crow or rook.

THE AMERICAN SPARROW HAWK (*Tinnunculus sparverius*) is another of similar size, and of surpassing beauty of form and markings. It is known to every portion of North America. Several varieties or geographical races are known. A characteristic of the Falcons is a certain dash and boldness of action. They perch on some eminence, rock or tree, and scan closely the ground below them. If a bird is discerned, the Falcon drops from his place and fearlessly pursues his prey; even diving impetuously into a thicket of tangled boughs and vines; and seldom fails of his aim. It is consistent in its character of the bold, high-spirited warrior. The Sparrow Hawk will not eat food that it has not captured. It resembles closely the European kestrel. The manner of suspending itself in the air is exactly similar to that of the "Windover," which movement is considered to be peculiar to the kestrels. The true Falcons, we have seen, survey the ground leisurely, and lordly, from some eminence, or while sweeping the air in graceful flight, then stoop upon the prey with something like the velocity and force of lightning. They are, indeed, the personification of grace and nobility, with power and courage to match.

As a general rule, the voices of all the rapacious birds are notable for the rough, strident dissonance of the larger species, or for the piercing shrieks of the smaller birds. There is, however, an exception to this rule, which is supposed at present to be quite unique, in the person of the CHANTING FALCON of Africa.

In a certain sense, even the scream of the eagle and the shriek of the Falcon possess a sort of wild music, which is sufficiently appropriate to the localities in which they dwell, but is singularly out of place when the bird is seated on a perch or immured within the confines of wiry walls. The Chanting Falcon, however, possesses a really musical voice, its very peculiar notes having been compared to the thrilling sounds of musical glasses. Le Vaillant tells us that it sings in the morning and evening, and that its song lasts for about one minute, being very frequently repeated in the course of an hour, and with very short intervals. It is at all other times of the day a very shy and suspicious bird, but while singing is so occupied with its task, that it can be approached, and, if desired, shot without much difficulty.

It is rather a large and powerful bird, being nearly two feet in length, and somewhat resembling the jerrfalcon in proportion. Its prey consists of hares, rabbits, and similar quadrupeds, and it also wages successful war against the larger birds, such as the bustard or "pauw." The general color of this curious bird is grayish on the upper parts of the body, and white on the lower parts, barred with brown streaks.

THE very remarkable SECRETARY BIRD derives its name from the curious feathery plumes which project from each side of its head, and bear a fanciful resemblance to pens carried behind the ear by human secretaries. In allusion to the same peculiarity, the Arabs term the bird *Selazza Izn*, or *Thirty-ears*.

The Secretary Bird has long been a standing perplexity to systematic zoologists, having been placed by some writers among the wading birds on account of its long legs, while others consider its proper place to be among the hawks and other birds of prey. It is an inhabitant



of Southern Africa, and is most invaluable in destroying the serpent race, on which creatures it almost exclusively feeds. Undaunted by the deadly teeth of the cobra, the Secretary Bird comes boldly to the attack, and in spite of all the efforts of the infuriated and desperate reptile, is sure to come off victorious. Many other creatures fall victims to the ravenous appetite of the Secretary, and in the stomach of one of these birds which was found by Le Vaillant, were discovered eleven rather large lizards, eleven small tortoises, a great number of insects nearly entire, and three snakes as thick as a man's arm. The following description of the habits and mode of hunting which is employed by this bird has been kindly forwarded to me by Captain Drayson, to whom I have already been indebted for much curious information respecting the quadrupeds of Southern Africa.



CHANTING FALCON (*Melieria musicus*) AND SERPENT FALCON (*Polyboroides typicus*).

“The Secretary Bird is not very common in any part of South Africa, still one or two are frequently seen during a day's ride on the plains. Sometimes two or three of these birds may be seen stalking over the ground, with a bold, military, and jaunty stride, which is quite in character with the nature of the reptile-eating bird, but more frequently a solitary individual pursues his investigations of newly-burnt grass, or likely and deserted ant-heaps. Frogs and toads appear the more favored repast of the Secretary Bird, but a snake of even three or four feet in length is easily disposed of.

“On one or two occasions I have seen a Secretary Bird busily engaged with a snake, and it appeared that the bird by means of activity escaped from the deadly fangs of its prey. A Secretary Bird might be seen sailing slowly along at about a hundred yards from the ground; suddenly he would stop and descend, attracted evidently by some prey, towards which he would stalk. The bird would then appear very busy, now striking with his wings and pecking, as though engaged at thrust and parry; then, when his adversary made a fierce attack, the

bird would rise with a spring in the air, and descend some twenty feet from his foe. Advancing again to the attack, he seldom failed to dispose of his enemy by eating him at once, or he would carry him off wriggling vainly in attempts to escape.

“The Secretary has a curious habit of occasionally breaking from his staid military step, and running in a fussy excited way for about ten or twelve paces, with apparently no object and again resuming his march. This bird is very wary, and rarely allows of a nearer approach than one hundred yards. He is rarely if ever shot, for a sportsman values the bird for its deeds, and there is a fine in the Cape Colony imposed upon those who are known to have shot one”



SECRETARY BIRD. (*Gypogeranus serpentarius*.)

In these combats the wing of the bird is its most important weapon, and answers equally all the purposes of a shield and a club. As the serpent rises to strike, the Secretary presents the front of its wing as a buckler, and almost immediately dashes the snake to the ground by a blow from the same member. It also kicks with considerable force, and almost invariably concludes the combat by a violent blow on the head from its beak, which lays the skull of the enemy completely open. Sometimes, when the serpent is very full of vitality, the Secretary makes a sudden snatch at its neck, soars to a great height in the air, carrying the struggling

foe with it, and then drops it upon the hard ground, a process which effectually expels the last remnant of life. When domesticated it has been known to go through a similar series of manœuvres, by way of gamesomeness; the snake being represented for the nonce by a straw or a twig.

One of the most notable peculiarities of this strange bird, is the manner in which it runs and walks. While young its mode of walking is ungraceful in the extreme, and can but be characterized as a hobble. When it has attained adult age, however, its gait, although rather odd, and like a person walking on stilts, is yet easy and constrained, but when the bird puts forth its speed, it runs with a swiftness so remarkable that the Arab has given it the name of Ferras Seytan, or devil's horse. This astonishing speed is probably useful in carrying out the great business of its life, and in attacking or avoiding the onset of its poison-bearing enemies. The nest of the Secretary is built on the summit of a lofty tree, and contains two or three large white eggs.

The ordinary length of the adult Secretary bird is about three feet, and its color is almost wholly a slaty-gray. The peculiar feathers which form the crest are black, as are the primaries and the feathers of the thigh. There is a lighter patch towards the abdomen. The tail is black with the exception of the two central rectrices, which are gray with a white tip and a broad black bar towards their extremities.

### THE HARRIERS.

WE now arrive at the Harriers, probably so called because they "harry" and persecute the game. Of the several species of this genus, the most common one is the HEN HARRIER.

The Harrier may be readily distinguished from the other hawks by the manner in which the feathers radiate around the eyes, forming a kind of funnel-shaped depression, somewhat similar to but not so perfect as that of the owl. This structure is thought to be serviceable to the bird in giving it a wide range of vision in its hunting excursions. The flight of the Harrier is very low, seldom being more than a few yards above the ground, and as the bird flies along it beats every bush, and pries into every little covert in search of prey. There are few of the smaller animals that do not fall victims to the Hen Harrier, which is always ready to pick up a field-mouse, a lizard, a small snake, a newt, or a bird, and will even pounce upon so large a bird as a partridge or pheasant. Sometimes it sits on a stone or small hillock, and from that post keeps up a vigilant watch on the surrounding country, sweeping off as soon as it observes indications of any creature on which it may feed.

The flight of the Hen Harrier, although it is not remarkable for its power, is yet very swift, easy, and gliding, and as the bird quarters the ground after its prey, is remarkably graceful. The Harriers prefer to live on moors and similar localities, where they can pursue their rather peculiar mode of hunting, and where they may find a secluded spot for a secure home. Like the kestrel, the Hen Harrier appears to have regular hunting-grounds, and is very punctual in its visits. The nest of this bird is generally placed under the shadow of some convenient furze-bush, and is composed of a few sticks thrown loosely together, in which are deposited four or five very pale blue eggs. The young are hatched about the middle of June.

The two sexes differ very greatly in color, and until comparatively recent times were recorded as distinct species. The general color of the adult male is ashen gray from the beak and upper parts, the only exception being the primaries, which are black. The throat and chin are nearly of the same hue as the beak, but the chest and abdomen are white, with a slight blue tinge which is lost upon the plumage of the thigh. On the under surface of the tail are several indistinct dark bars, and the hair-like feathers between the eye and the base of the beak are black. The legs, toes, and cere are yellow, the claws black, and the beak nearly black, with a blueish tinge. The length of the male bird is about eighteen inches.

The female is a much darker bird, the head being mottled brown, and the back and upper portions of a deep dusky-brown, the primaries being but a little darker than the plumage of the back. The feathers of the under parts are lighter brown, with pale margins, so as

to present a kind of mottled buff and chestnut aspect; the upper surface of the tail is marked with partial dark bands and its under surface is very distinctly bound with broad bands of black and grayish-white. The funnel-shaped depression round the eyes, technically called the concha, or shell, is brown towards the base of the feathers, but merges into a white eyebrow above, reaching to the cere, and in a white streak below, edged with brown. The length of the female is about two inches more than that of the male, and her spread of wing is about three feet six inches.

ANOTHER example of this genus is to be found in the MOOR BUZZARD as the bird has very wrongly been termed, or the MARSH HARRIER, as it ought more properly to be named. The bird is also known as the Duck Hawk and Harpy.

This handsome bird is considerably larger than the preceding species, the female being about two feet in length, and the male about three inches shorter. It is not a very uncommon bird, being found most extensively upon marshy ground, where it can obtain abundance of food. It generally preys on water birds, mice, water rats, various reptiles, frogs, rats, and fish. It is rather partial to young game, and is apt to be a dangerous neighbor to a preserve, snatching the young partridges and pheasants from their parents. Sometimes it is sufficiently bold to enter the precincts of the farm, and to carry away a young chicken or a duckling. Rabbits also, both young and old, fall victims to this rapacious bird, which sweeps on noiseless wing over the common, carefully choosing the morning and evening, when the rabbits are almost sure to be out of their burrows.

The Marsh Harrier appears never to take up its residence in dry localities, but always to prefer the fenny district, whether of the coast or inland. The nest of this species is placed on the ground, and is composed of twigs or stems of coarse grass, and is sheltered from observation by an overhanging bush, or by a tuft of rushes, fern, or long grass. The eggs are white, and about three or four in number.

Like the hen harrier, the male Marsh Harrier is of a much grayer-tint than his mate, the gray hues being not fully assumed until the bird has completed his third year, and spreading more widely on each successive year.

THE MARSH HAWK (*Circus hudsonius*) is the only one in America of numerous species. It is called American Harrier from its supposed resemblance in habit to the English bird of that name. It is especially a meadow or marsh bird. It is held in good esteem by the planters of the Southern States, as it drives away the rice birds while it hunts the fields for its own prey. It is widely distributed; in New England it is very common.

THE ASH-COLORED FALCON, sometimes called MONTAGUE'S HARRIER, is frequently found in Nepál and other parts of Asia, but it is also a resident of Europe.

This species is more slender in its form than either of the two preceding birds, being hardly more than two-thirds of the weight of the hen harrier, although its length is nearly the same. In its habits it is very like the hen harrier, skimming over the ground in much the same manner, but with a more rapid flight. Its food consists chiefly of small birds and reptiles, to the latter of which creatures the Ash-colored Falcon appears to be especially partial, no less than five lizards having been found in the stomach of one of these birds. It is not very uncommon in fenny districts of Europe. Specimens of this bird have also been obtained in Nepál and other parts of India, and it is also said to be an inhabitant of Southern Africa.

The color of the adult male is bluish-gray on the upper parts of the body, the secondaries being marked with three bars of dark-gray brown, and the primaries black. The upper surface of the tail is bluish-gray upon the central feathers, and white upon those at the side, marked with several bars of orange-red; their under-surface is grayish-white, with several transverse bars of grayish-brown. The under parts of the body are nearly white, barred with numerous transverse streaks of orange-red, like those on the tail. The legs and toes are yellow, the cere is yellowish-green, and the beak is almost black. The length of the bird is about seventeen inches.



HARRIERS.



THE very remarkable bird which is now known as the *JARDINES HARRIER* is one of the myriad strange creatures which are produced by Australia, that land of wonders.

According to Gould, it is generally found in plains, and specially frequents the wide and luxuriant grass flats that intervene between the mountain ranges. Like all the birds of the same genus, it is never seen to soar, but sweeps over the surface of the ground at a low elevation, seeking after the mice, reptiles, small birds, and other creatures on which it feeds. It is very fond of small snakes and frogs, and in order to obtain them may be seen hovering over the marshes, or beating the wet ground after the fashion of the hen harrier. It is seldom known to perch on trees, preferring to take its stand on some large stone or elevated hillock from which it may survey the surrounding land. The nest of this bird is supposed to be built on the ground, overshadowed by some brush or tuft of grass, like that of other harriers, and placed upon the top of one of the numerous "scrub" hills.

The coloring of this bird is quite unique, and would attract attention even if it were not an anomaly among birds of this genus. The head, cheeks, and ear-coverts are dark streaked chestnut, the streaky appearance being given by a deep black line down the centre of each feather. A gray collar or band passes round the neck and the back of the head, the primaries are buff towards their base, and black for the latter two-thirds of their length. The tail is barred alternately with dark brown and gray, the extremity being brown. The back and scapularies are dark-gray sprinkled with a number of little white dots, and the entire under surface is a bright ruddy chestnut, covered profusely with nearly circular white spots of considerable size. The legs are yellow, and the bill dark slaty-blue, becoming black at the extremity.

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## OWLS.

THERE are few groups of birds which are so decidedly marked as the OWLS, and so easy of recognition. The round, puffy head, the little hooked beak just appearing from the downy plumage with which it is surrounded, the large, soft, blinking eyes, and the curious disk of feathers which radiate from the eye and form a funnel-shaped depression, are such characteristic distinctions, that an Owl, even of the least Owl-like aspect, can at once be detected and referred to its proper place in the animal kingdom. There is a singular resemblance between the face of an Owl and that of a cat, which is the more notable as both these creatures have much the same kind of habits, live on the same prey, and are evidently representatives of the same idea in their different classes. The Owl, in fact, is a winged cat, just as the cat is a furred Owl.

These birds are, almost without an exception, nocturnal in their habits, and are fitted for their peculiar life by a most wonderfully adapted form and structure. The eyes are made so as to take in every ray of light, and are so sensitive to its influence, that they are unable to endure the glare of daylight, being formed expressly for the dim light of evening or earliest dawn. An ordinary owl of almost any species, when brought into the full light of day, becomes quite bewildered with the unwonted glare, and sits blinking uncomfortably, in a pitiable manner, seemingly as distressed as a human being on whose undefended eyes the meridian sun is shining. The nictitating membrane, or inner eyelid, with which the Owl, in common with many other birds and animals, is furnished, stands it in good stead under such circumstances, and by repeatedly drawing its thin membranous substance over the aching eyeball, the Owl obtains some relief from the pain which it is suffering.

The eyes of Owls are very curiously formed, as are their ears and plumage, and their structure will be briefly described in the course of the next few pages.

THE transition from the falcons to the Owls is evidently through the harriers, as may be seen by comparing the engraving of any harrier with that of the *CANADA OWL*, or *HAWK OWL*, as it is often termed. In the harriers we find the commencement of the peculiar

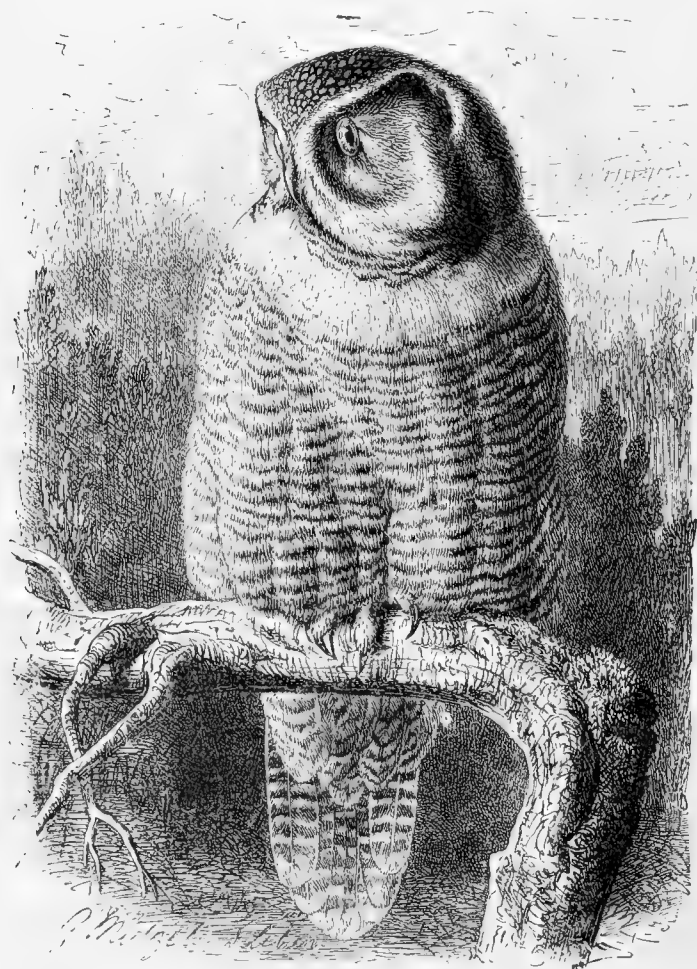
facial disk, and in the Hawk Owl this disk, or "concha," is not nearly so large or so well defined as in the other members of the same group. The eyes, too, are rather differently formed, as the bird is able to follow its prey by day as well as in the dark, and therefore requires a character of eye which will not be injured or half blinded by ordinary daylight. The plumage is closer than that of the generality of Owls, whose feathers are fringed with delicate downy filaments, for the purpose of enabling them to float noiselessly through the air, for the Hawk Owl is a swift-winged bird, and obtains its prey by fair chase.

The food of the Canada Owl consists chiefly of rats, mice, and insects, during the summer months; but in the winter, while rats and mice keep within their homes, and the insects are as yet in their pupa state, the Canada Owl turns its attention to birds, and will even chase and

kill so powerful a prey as the ptarmigan. It is a very bold bird, and has been known to pounce upon and carry away wounded game that has fallen before the sportsman's gun. While chasing the ptarmigan it follows the course of their migration, hanging about the flocks and making sad havoc in their numbers.

The Hawk Owl is an inhabitant of the more polar regions, being most commonly seen in the extreme north of Asia and America, though it sometimes pays a visit to Northern Europe. Richardson tells us that it seldom travels farther south than Pennsylvania, but very few specimens having been noticed in that locality, and those only when the winter has been more than usually severe.

Although so bold and so successful a hunter, the Hawk Owl is by no means a large bird, being only from fifteen to seventeen inches in length, and therefore not equalling the common hen harrier in dimensions. Its nest is generally made on the summit of a tree, contrary to the usual habit of Owls, which usually take possession of a hollow in some dead branch and lay their eggs on the soft decay-



HAWK OWL.—*Surnia ulula*.

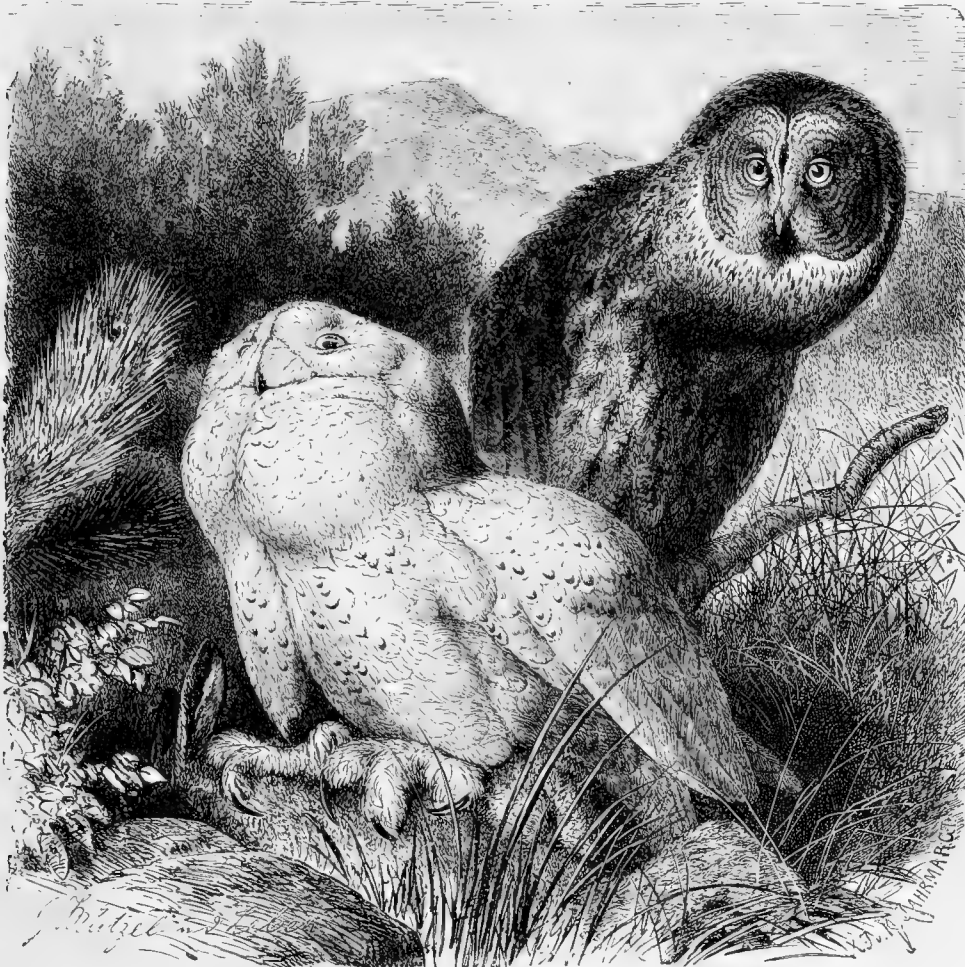
ing wood, or make their home in a convenient crevice of some old building. The male Hawk Owl is rather less than the female, as is the case with most predaceous birds.

The general color of this bird is dark spotted brown above and striped white below, arranged briefly as follows: The top of the head and back is brown, covered with white spots, the spots disappearing at the insertion of the wings, where a large patch of very dark brown is placed. The outer edge of the concha is jetty black, and its inner surface is grayish-white. The throat is also white, and the chest and abdomen are of the same tint, marked with a number of irregular stripes of ashen-brown. The tail is brown, covered with a few narrow intercepted black bands. The legs are feathered as far as the claws, and the bill is yellow with a few spots of black. These colors are slightly variable in individuals, owing most probably to the difference of age, and in the female they are not so bright as in her mate.



THE SNOWY OWL is one of the handsomest of this group, not so much on account of its dimensions, which are not very considerable, but by reason of the beautiful white mantle with which it is clothed, and the large orange eyeballs that shine with a lustre as of a living topaz set among the snowy plumage.

This bird is properly a native of North America and Europe. Like the Hawk Owl, it is a day-flying bird, and is a terrible foe to the smaller mammalia, and to various birds. Mr. Yarrell remarks that "one wounded on the Isle of Balta disgorged a young rabbit whole; and that one in my possession had in its stomach a young sandpiper with its plumage entire." It is rather remarkable that the bird should have thus been swallowed whole, as I have always

SNOWY OWL.—*Nyctea nivea*.BEARDED OWL.—*Syrnium lapponicum*.

remarked that when an Owl devours a little bird, he tears it to pieces before eating it, though he always swallows a mouse entire.

In proportion to its size the Snowy Owl is a mighty hunter, having been detected in chasing our American hare, and carrying off wounded grouse before the sportsman could secure his prey. According to Yarrell, the Swedish name of Harfang, which has been given to this bird, is derived from its habit of feeding on hares. It is also a good fisherman, posting itself on some convenient spot overhanging the water, and securing its finny prey with a lightning-like grasp of the claw as it passes beneath the white-clad fisher. Sometimes it will sail over the surface of the stream, and snatch the fish as they rise for food, but its general mode of angling is that which has just been mentioned. It is also a great eater of lemmings; and in the destruction of these quadrupedal pests, does infinite service to the agriculturist and the population in general.

The large, round eyes of this bird are very beautiful, and even by daylight are remarkable for their gem-like sheen, but in the evening they are still more attractive, and glow like two balls of living fire. There is an amusing anecdote respecting one of these Owls, which settled on the rigging of a ship by night to rest itself after a long journey. The bird was quietly seated on one of the yards, when it was suddenly roused by a sailor who was sent aloft upon some nautical duty. The man, terrified at the two glowing eyes that suddenly opened upon him, descended precipitately from the rigging, declaring that "Davy Jones" was sitting on the main yard. Several instances are known where Snowy Owls have made use of a ship as a temporary resting-place. On one such occasion, the ship was visited by no less than sixty of these birds, which were so fatigued that they permitted themselves to be captured by the crew.

The color of an old Snowy Owl is pure white without any markings whatever; but in the earlier years of its life, its plumage is covered with numerous dark-brown spots and bars, caused by a dark tip to each feather. Upon the breast and abdomen, these markings form short, abrupt curves, but on the back and upper surface they are nearly straight. The beak and claws are black. The length of the male Snowy Owl is about twenty-two inches, and that of the female twenty-six or twenty-seven.

The Snowy Owl (*Nyctea nivea*). This great bird is an attractive creature, particularly in the depth of winter, when it is seen perching on some snow-clad bough or rock. It is often driven from the arctic regions in winter, when the prey is scarce. At such times it visits the sea-shore, and feeds on the refuse of the beaches. It is common to both continents. This bird is not strictly nocturnal in its habit, as it feeds equally by daylight or dark. Audubon says it catches fishes by seizing them in its claws.



COQUIMBO, OR BURROWING OWL.—*Speotyto cunicularia*.

THE quaint, long-legged little Owl which is represented in the accompanying illustration is a native of many parts of America, where it inhabits the same locality as the prairie dog. The description of that curious marmot and its peculiar burrow may be found in Volume I.

The prairie dogs and BURROWING OWLS live together very harmoniously; and this strange

society is said also to be augmented by a third member, namely, the rattlesnake. It is now, however, ascertained with tolerable accuracy that the rattlesnake is nothing but a very unwelcome intruder upon the marmot, and, as has been shown by experiments, is liable to be attacked and destroyed by the legal owner of the burrow. If all had their rights, it would seem that the Owl is nearly as much an intruder as the snake, and that it only takes possession of the burrow excavated by the prairie dog in order to save itself the trouble of making a subterranean abode for itself. Indeed, there are some parts of the country where the Owl is perforce obliged to be its own workman, and in default of convenient "dog" burrows, is fain to employ its claws and bill in excavating a home for itself.

The tunnel which is made by the Owl is not nearly so deep or so neatly constructed as that which is dug by the marmot, being only eighteen inches or two feet in depth, and very rough in the interior. At the bottom of this burrow is placed a tolerably-sized heap of dried grass, moss, leaves, and other soft substances, upon which are deposited its white-shelled eggs.

The Burrowing Owl is peculiar to America, where it is distributed over the whole of the western and southern portion of the continent. It congregates in great numbers, and differs from any of the other members of the Owl family by breeding under ground.

Dr. Kennedy says: "When molested, they commence bowing and chattering in a somewhat ludicrous manner at the intruder." Mr. Darwin says the South American Owl digs its own burrow.

THE GENUS *ATHENE* is a very large one, and contains many curious and interesting birds which cannot be described at length except in a monograph of the Owl tribe. Among these may be mentioned two remarkable birds, the BOOBOOK OWL (*Athene boo-book*), and the WINKING OWL (*Athene connivens*), both natives of Australia.

The former of these birds is popularly called the Australian Cuckoo by the colonists on account of its cry, which bears no small resemblance to the well-known song of "Spring's harbinger." As the bird, after the manner of Owls, utters its cry by night, it is often noted as an instance of the perversity of the Australian climate, which reverses the usual operations of nature, and forces the cuckoo to take the place of the nightingale, and pour forth its song at night. This species is diurnal in its habits, and remarkably swift and agile on the wing, being able to chase successfully the quick-winged insects that are so numerous in Australia. When roused, it is said by Mr. Gould to resemble the woodcock in the manner of its flight, and to further carry out the likeness in its habit of rising out of gun-shot, and diving rapidly into the nearest covert, where it lies safely housed until its enemies have withdrawn from the neighborhood. The quaint title of Boobook is the name by which it is known among the natives.

THE WINKING OWL is also a day flyer, strong and powerful on the wing, though with flight nearly as noiseless as that of the common barn Owl of England. It is a large and powerful bird, delighting to capture the young koala, or native bear, together with other prey of equal strength and magnitude. Berries have been found in the stomach of one of these Owls; but Mr. Gould thinks that they have probably come from the crop of some unfortunate bird which had fallen a prey to the Winking Owl. The cry of this species is remarkably resonant, and is said to resemble the lowing of an ox. If wounded it becomes a very dangerous opponent, flinging itself on its back, striking fierce and rapid blows with its well-armed feet, and seeking to seize its foe in the terrible clutch of its curved talons.

The general color of this species is a dark clove-brown, diversified by many bars and stripes.

THIS genus finds another representative in the person of the LITTLE OWL (*Athene passerina*).

The name of Little Owl is very appropriate, for it is only eight inches in length including the plumage, and when stripped of its feathers appears hardly so large as a common starling. It is properly a native of Germany, Holland, France, and Austria, and has sometimes been

called the Austrian Rufous Owlet, or the Sparrow Owl. Although so small a creature, its food is the same as that of any of its larger relatives, consisting of small birds, bats, mice, and various insects. The general color of this curious little Owl is clove-brown, banded and marked



LITTLE OWL.—*Athene passerina*.

with yellowish-brown, gray, and white. It may easily be distinguished from other Owls by the legs, which are very long in proportion to the dimensions of the bird, and instead of being feathered down to the toes, are covered with very short hair-like plumage, becoming very scanty over the toes. It is easily domesticated, and in a tamed state is so voracious that, according to Bechstein, it can swallow five mice at a single meal.

ANOTHER curious little Owl is the TENGMALM'S OWL, or DEATH BIRD; the latter name having been given to it on account of a common superstition that reigns among several of the North American Indian tribes. When an Indian hears one of these birds uttering its melancholy cry, he whistles towards the spot from whence the sound proceeded, and if the bird does not answer him, he looks for a speedy death.

This species is at first sight not unlike the Little Owl, but may be at once distinguished from that bird by the structure of its legs and toes, and the thick feathery coating with which they are clad. It is a very common bird over the whole of the

inhabited portions of North America, but is frequently found in Norway, Sweden, Russia, and even in Northern France and Italy. It is a nocturnal bird, seldom wandering from its home during the hours of daylight, as it is almost blinded by the unaccustomed glare, and may be easily captured by hand while thus bewildered. The nest of the Tengmalm's Owl is generally made of grass, and is placed about half-way up some convenient pine-tree. The eggs are seldom more than two in number, are pure white in color, and not quite so globular as is the case with the generality of Owls' eggs.

The color of this bird is more rich and better defined than that of the Little Owl. The whole of the upper parts of the body are a rich chocolate-brown, dotted and splashed with many white markings, which are very minute upon the top of the head, and larger upon the back and wings, some indeed being arranged on the lower portions of the wings so as to form irregular stripes. Similar white spots are placed on the tail, which is usually of a dark brown. The eye disk is grayish-white, excepting a bold black-brown ring just round the eye. The under portions of the body are grayish-white, covered with numerous brown bars and spots, and the plumage of the legs and toes is also gray-white sprinkled with brown spots. The size of the Tengmalm's Owl is nearly the same as that of the Little Owl.

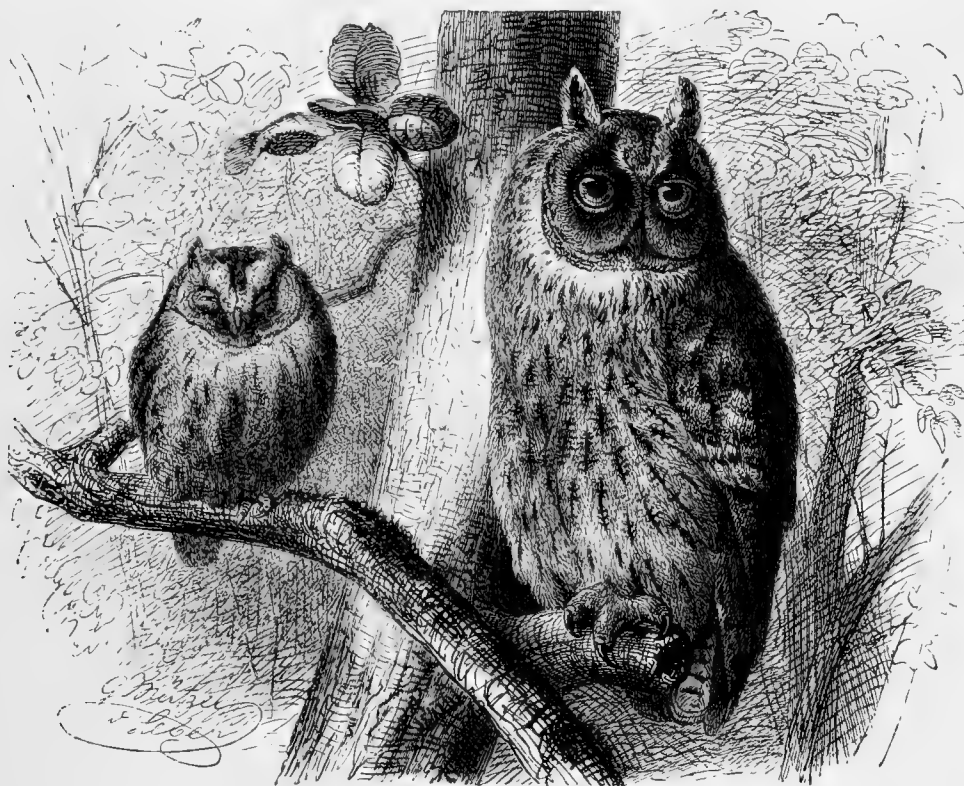
WE now arrive at a large group of Owls which are remarkable for two tufts of feathers which rise from the head, and occupy nearly the same relative position as the ears of quadrupeds. These "ears," as they are called, have, however, nothing to do with the organs of hearing, but are simply tufts of feathers, which can be raised or depressed at the will of the bird, and give a most singular expression to the countenance.

The first of these birds is the SCOPS EARED OWL, a most singular little creature, which is sometimes, though rarely, taken in England, and has therefore been placed in the catalogue of British Birds.

The geographical range of this species is very great, specimens now in the museums having been taken in Germany and several parts of Europe, India, Malacca, China, Gambia, and the

Cape of Good Hope. It is by no means an uncommon bird in Southern Europe. A very good description is given of the habits of the Scops Eared Owl by Mr. Spence.

“This Owl, which in summer is very common in Italy, is remarkable for the constancy and regularity with which it utters its peculiar note or cry. It does not merely ‘to the moon complain,’ but keeps repeating its plaintive and monotonous cry of *Kew! kew!* (whence its Florentine name of *Chiù*, pronounced almost exactly like the English letter Q) in the regular intervals of about two seconds the livelong night, and until one is used to it, nothing can well be more wearisome. Towards the end of April, last year, 1830, one of these Owls established itself in the large *Jardin Anglais*, behind the house where we resided at Florence, and until our departure for Switzerland in the beginning of June, I recollect but one or two instances in which it was not constantly to be heard, as if in spite to the nightingales, who abounded there



LONG-EARED OWL (page 86)—*Asto americanus*, and SCOPS EARED OWL—*Scops carniottaca*.

from nightfall to midnight (and probably much later), whenever I chanced to be in the back part of the house, or took a friend to listen to it, and always with precisely the same unwearied cry, and the intervals between each as regular as the tickings of a pendulum.

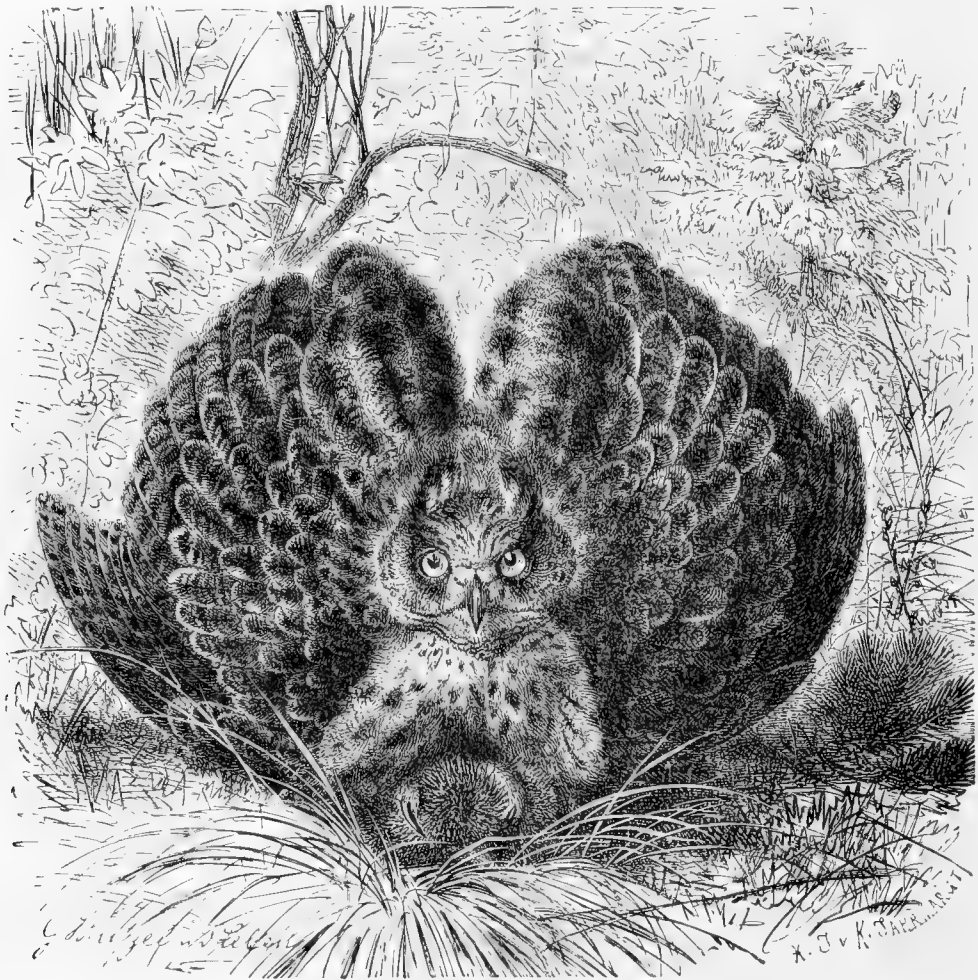
“This species of Owl, according to Professor Savi’s excellent *Ornitologia Toscana*, Vol. I. p. 74, is the only Italian species which migrates; passing the winter in Africa and Southern Asia, and the summer in the south of France. It feeds wholly upon beetles, grasshoppers, and other insects.”

The length of this tiny Owl is only seven inches and a half, the female being a little longer than her mate. The nest is generally placed in a hollow tree or the cleft of a rock, and contains from two to four white eggs. It is a pretty little bird, the general coloring being much as follows. The head is light brown, marked with several narrow dark-brown streaks; the back is variegated brown and chestnut, marked with dark bands and gray mottlings. The wing is brown, speckled largely with white and gray, and the tail is similarly barred and dashed with black and pale brown. The facial disk is grayish-white, thickly covered with small brown spots, and the two feather tufts of the head are similarly tinted. The under portions

of the body are grayish-white, with several streaks and dashes of dark brown, and the legs are covered as far as the toes with short speckled feathers. The claws are nearly white at their base, declining to blackish-brown at the tip; the toes are brown and the beak black.

ALTHOUGH seemingly exceeding the golden eagle in dimensions, the GREAT OWL is in reality a very much smaller bird, owing its apparent magnitude to its feathers and not to its body. In weight it hardly exceeds one quarter of that of the eagle, but in power of muscle it is little inferior even to that royal bird itself.

The Great Owl, or EAGLE OWL, as it is often called, inhabits the northern parts of Europe, being especially common in Sweden, Norway, Switzerland, and Russia, and being found even



GREAT OWL.—*Bubo ignavus*.

in some parts of Italy and Turkey. When captured, however, the Eagle Owl is easily reconciled to its habitation, and has frequently been known to hatch and bring up its young while in captivity. In its wild state it makes a very rude nest upon some convenient ledge of rock or other similar locality, and lays two or three pure white, rather globular eggs. The young, when in their first few days of independent life, would hardly be recognized as Owls at all, being mere shapeless lumps of gray woolly down. The parent birds take great care of their young, and are so fond of their offspring, that when an Eagle Owl's nest has been harried, and the young birds removed, the parents have been known to supply them with food for a period of fourteen days, laying dead partridges and other prey before the bars of the cage in which the young birds were confined.

The food of this Owl consists generally of grouse, partridges, hares, and other similar game, and the bird is so powerful that it will successfully chase even larger prey. Mr. Lloyd,

in his well-known "Field Sports," gives the following description of the Eagle Owl as it appears in the Scandinavian forests.

"These Owls, Dr. Mellerborg assured me, will sometimes destroy dogs. Indeed, he himself once knew an instance of the kind. He states another circumstance, showing the ferocity of these birds, which came under his notice. Two men were in the forest for the purpose of getting berries, when one of them happening to approach near to the nest of the Owl, she pounced on him while he was in the act of stooping, and fixing her talons in his back, wounded him very severely. His companion, however, was fortunately near at hand, who, catching up a stick, lost no time in destroying the furious bird.

"Mr. Nilsson states that these Owls not unfrequently engage in combat with the eagle himself, and that they often come off victorious. These powerful and voracious birds, that gentleman remarks, occasionally kill the fawns of the stag, roebuck, and reindeer. The largest of the birds common to the Scandinavian forests, such as the capercali, often become their prey. The hooting of these Owls may often be heard during the night-time in the northern forests; the sound, which is a most melancholy one, and which has given rise to many superstitions, is audible at a long distance." This bird is also most invaluable in destroying the lemmings.

The cry of the Eagle Owl is a very deep and doleful note, sounding most lugubriously in the depth of the lonely forests during the hours of night. When angry, the bird utters a sharp hiss, not unlike the sound which is produced by the common brown Owl when irritated. It is generally seen during the twilight hours, although it sometimes continues to search after prey during the entire night. While engaged in hunting, it flies low over the ground, and displays great quickness of eye and wing in discerning and pouncing upon everything that has life and can be eaten. This bird has been employed for the purpose of decoying falcons towards the snare, by being fastened in a convenient spot where it can be seen by any passing bird. The falcon cannot possibly resist the pleasure of dashing at the great, solemn, winking bird, and is accordingly captured in the fowler's ready net as he swoops after the Owl, which runs for refuge precisely in the direction of the toils.

The length of this fine bird is rather more than two feet, and the aspect of its outstretched wings is wonderfully magnificent. The general color of the Eagle Owl is brown, mingled with a yellow tinge, and covered on the upper surface with bars, dashes, and streaks of blackish-brown. The facial disc is pale brown, decorated with many small spots of black, and the under surface of the body is nearly yellow, traversed by longitudinal stripes of black upon the chest, and barred transversely with many bars of dark brown on the abdomen. The legs and thighs are pale brown, with many narrow bars of a darker hue. The long armed claws are black, and the beak is also nearly black. The eyes are of a bright radiant orange, and have a very fierce appearance when the bird looks the spectator in the face. The female is rather larger than the male, the difference in length being about four inches.

THE VIRGINIAN EARED OWL holds the same place in America as the eagle Owl in Europe, and is even now a familiar bird, though it has been extirpated from many localities where it once reigned supreme.

It is a very large bird, nearly equalling the great Owl in magnitude, and being in no way its inferior in strength or courage. This species is found spread over the greatest portion of North America, and in former days did great damage among the poultry of the agriculturists, being as bold as well as a voracious bird. Now, however, the ever-ready rifle of the farmer has thinned its numbers greatly, and has inspired the survivors with such awe, that they mostly keep clear of cultivated lands, and confine themselves to seeking after their legitimate prey.

The Virginian Eared or Horned Owl is a terrible destroyer of game, snatching up grouse, partridges, hares, ducks, sparrows, squirrels, and many other furred and feathered creatures, and not unfrequently striving after larger quarry. The wild turkey is a favorite article of diet with this Owl; but on account of the extreme wariness of the turkey nature, the depredator finds an unseen approach to be no easy matter. The usual mode in which the Owl catches the turkey is, to find out a spot where its intended prey is quietly sleeping at night, and then to

swoop down suddenly upon the slumbering bird before it awakes. Sometimes, however, the Owl is baffled in a very curious manner. When the turkey happens to be roused by the rush of the winged foe, it instinctively ducks its head and spreads its tail flatly over its back. The Owl, impinging upon the slippery plane of stiff tail feathers, finds no hold for its claws, and glides off the back of its intended victim, which immediately dives into the brushwood before the Owl can recover from the surprise of its unexpected failure.

The following admirable description of the Virginian Eared Owl, as it used to be in the earlier days of cultivation, is given by Audubon in his well-known History of the Birds of America.

"It is during the placid serenity of a beautiful night, when the current of the waters moves silently along, reflecting from its smooth surface the silver radiance of the moon, and when all else of animated nature seems sunk in repose, that the great Horned Owl, one of the Nimrods of the feathered tribes of our forests, may be seen sailing silently and yet rapidly on, intent on the destruction of the object destined to form its food.

"The lone steersman of the descending boat observes the nocturnal hunter gliding on extended pinions across the river, sailing over one hill and then another, or suddenly sweeping downwards and again rising in the air like a moving shadow, now distinctly seen, and again mingling with the sombre shades of the surrounding woods, fading into obscurity.

"The bird has now floated to some distance, and is opposite the newly-cleared patch of ground, the result of a squatter's first attempt at cultivation in a place lately shaded by the trees of the forest. The moon shines brightly on his hut, his light fence, the newly-planted orchard, and a tree which, spared by the axe, serves as a roosting-place for the scanty stock of poultry which the new-comer has procured from some liberal neighbor. Amongst them rests a turkey-hen, covering her offspring with extended wings.

"The great Owl, with eyes keen as those of any falcon, is now seen hovering above the place. He has already espied the quarry, and is sailing in wide circles, meditating his plan of attack. The turkey-hen, which at another time might be sound asleep, is now, however, so intent upon the care of her young brood, that she rises on her legs, and purrs so loudly as she opens her wings and spreads her tail, that she rouses her neighbors, the hens, together with their protector. The cacklings which they at first emit soon become a general clamor.

"The squatter hears the uproar, and is on his feet in an instant, rifle in hand; the priming examined, he gently pushes open the half-closed door and peeps out cautiously, to ascertain the cause by which his repose has been disturbed. He observes the murderous Owl just alighting on the dead branch of a tall tree, when, raising his never-failing rifle, he takes aim, touches the trigger, and the next instant sees the foe falling dead to the ground. The bird is unworthy of his further attention, and is left a prey to some prowling opossum or other carnivorous quadruped. In this manner falls many a Horned Owl on our frontier, where the species abounds."

The flight of this bird is remarkably powerful, easy, and graceful, as may be gathered from the enormous expanse of wing, in comparison with the weight and dimensions of the body. Its voice is of a hollow and weird-like character, and when heard by night from some spot on which the Owl has silently settled, is apt to cause many a manly but superstitious cheek to pale. As Wilson well observes, the loud and sudden cry of Waugh O! Waugh O! is sufficient to alarm a whole garrison of soldiers. Probably on account of the peculiar sounds which are uttered by this bird, the Cree Indians know it by the name of Otowuck-oho!

The Virginian Horned Owl takes up its residence in the deep swampy forests, where it remains hidden during the day, and comes out at night and morning, heralding its approach with its loud, unearthly cries, as of an unquiet, wandering spirit. Sometimes, according to Wilson, "he has other nocturnal solos, one of which very strikingly resembles the half-suppressed screams of a person suffocating or throttled."

Sir W. Jardine, in his notes to his well-known edition of Wilson's American Ornithology, gives the following account of a captive Owl, which affords an excellent idea of the peculiar sounds that can proceed from an Owl's throat.



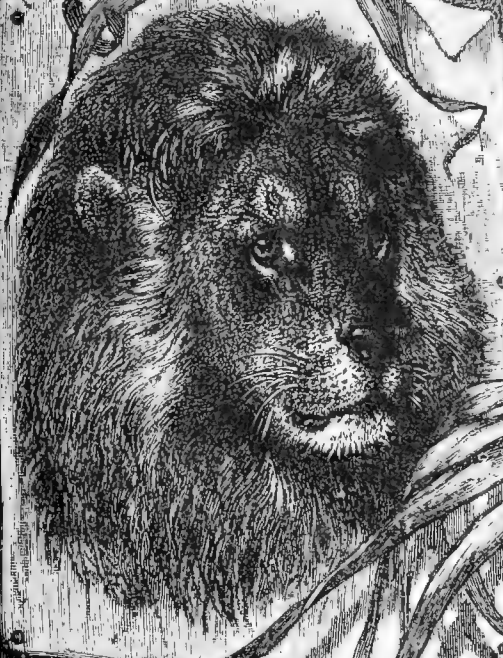
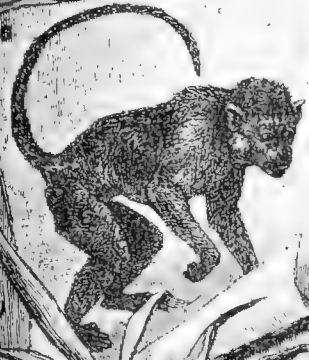
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# Animate Creation

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New York



“An Eagle Owl in my possession remains quiet during the day, unless he is shown some prey, when he becomes eager to possess it, and when it is put within his reach, at once clutches it, and retires to a corner to devour it at leisure. During night he is extremely active, and sometimes keeps up an incessant bark. It is so similar to that of a cur or terrier, as to annoy a large Labrador house-dog, who expresses his dissatisfaction by replying to him, and disturbing the inmates nightly. I at first mistook the cry also for that of a dog, and, without any recollection of the Owl, sallied forth to destroy the disturber of our repose; and it was not until tracing the sound to the cage, that I became satisfied of the author of the annoyance. I have remarked that he barks more incessantly during a clear winter night than at any other time, and the thin air at that season makes the cry very distinctly heard to a considerable distance. This bird also shows a great antipathy to dogs, and will perceive one at a considerable distance, nor is it possible to distract his attention so long as the animal remains in sight. When first perceived, the feathers are raised, and the wings lowered as when feeding, and the head moved round, following the object while in sight. If food is thrown, it will be struck with the foot and held, but no further attention paid to it.”

The nest of this bird is extremely large, and consists of a large bundle of sticks, grass, leaves, and feathers, placed in the fork of some large bough, and containing three or four white eggs. The color of the Virginian Eared Owl is reddish brown upon the upper surface, mottled with various splashes of black, and covered with regular bands of the same hue. The facial disc is brown, edged with black. The under surface is of a light reddish-brown color, covered with numerous transverse bars of dusky brown, with a few white lines and dashes among them. The throat is pure white, the beak and claws are black, and the eyes are of a bright orange, gleaming out strangely even by day and burning with double radiance in the twilight.

THE GREAT HORNED OWL, or VIRGINIAN EARED OWL (*Bubo virginianus*) has a range of *habitat* from Eastern North America, south of Labrador, west to the Missouri, and south through the Atlantic region to Mexico. Three very marked varieties are known, in as many different and remote parts of the country.

The two trivial names and the specific term *virginianus* are absurdly chosen for this bird. There are neither horns nor ears showing in the prominent tufts of feathers on the bird's head. It is by no means especially Virginian.

This bird is a permanent inhabitant in New England. Wilson says of him: “His favorite residence is in the deep solitude of swamps covered with a growth of gigantic timber; and here, as soon as evening draws on, and mankind retires to rest, he sends forth such sounds as seem scarcely to belong to this world, startling the solitary pilgrim, as he slumbers by the forest fire, making night hideous.”

THE common BROWN OWL, or TAWNY OWL, as it is often named, is, with the exception of the Barn Owl, one of the best known of the Owls.

Although rather a small bird, being only about fifteen inches in total length, it is possessed of a powerful pounce and audacious spirit, and when roused to anger or urged by despair, is a remarkably unpleasant antagonist.

The following is a curious account of the conduct of a pair of Brown Owls, who built a nest in the attic of an untenanted house. The writer of this account proceeds to say: “I should have been a little afraid of molesting them, so ferocious did the old gentleman look when his wife and children were approached. One morning the cat was missing, and I found, on inquiry, that some strange sounds had been heard the evening before in the room where the Owls were. On going up that evening I found poor puss quite dead, one of her eyes actually picked out, and her antagonist, also killed, lying on the side of the nest. The mamma Owl was absent, probably in search of food, but she may have been present and have assisted at the death. I have seen a cat on another occasion cowed by an old Owl that came down the chimney into the dining-room.”

There is recorded another anecdote of a pair of Brown Owls that were kept in confinement, and which, when approached by any stranger, would fly at him and fasten their talons into his head with such angry violence that they could but be removed by direct force.



BROWN OWL.—*Syrnium aluco*.

THE fine bird known by the name of the URAL OWL (*Syrnium uralense*) belongs to the same genus with the Barn Owl. This bird is nearly two feet in length, and preys on hares, rabbits, grouse, and other large quarry, after the manner of the Eagle Owl. It is a native of the colder regions of Europe and Asia. The BEARDED OWL, so called from a beard-like spot upon its throat, is a species of the same genus, and found in the same countries. See p. 77.

WE now come to a familiar example of the Owls, a bird that has attracted great notice on account of its singular aspect. This is the LONG-EARED OWL, its popular name being derived from the great length of the "ears," or feather-tufts which are placed upon the head, and erect themselves whenever the bird is excited. It is illustrated on page 81, together with the Scops-eared Owl.

The Long-eared Owl is found in almost all parts of Europe, and also inhabits portions of Asia, Africa, and America, so that it possesses a very large geographical range. It is not a very large bird, being only fourteen or fifteen inches in length, but is a most rapacious being, preying upon all the smaller mammalia, and capturing the finches and other small birds with as much success as if it were a hawk rather than an Owl. Even moles fall victims to the Long-eared Owl, and in the "castings" of this species have been found the remains of mice, rats, and various birds.

While the young are still in the nest, the parent birds display a singular assiduity in collecting food for their infant charge, and make sad havoc among the half-fledged nestlings of the neighborhood. The nest of this species seems seldom to be built by the bird itself, as the Owl prefers to take to the deserted nest of some other bird, and to fit up the premises for its own use. According to Mr. Yarrell, this Owl has been known to take possession of the nest of a squirrel, and therein to rear its young. The eggs of the Long-eared Owl are generally four or five in number, and white, as is the case with nearly all Owls' eggs.

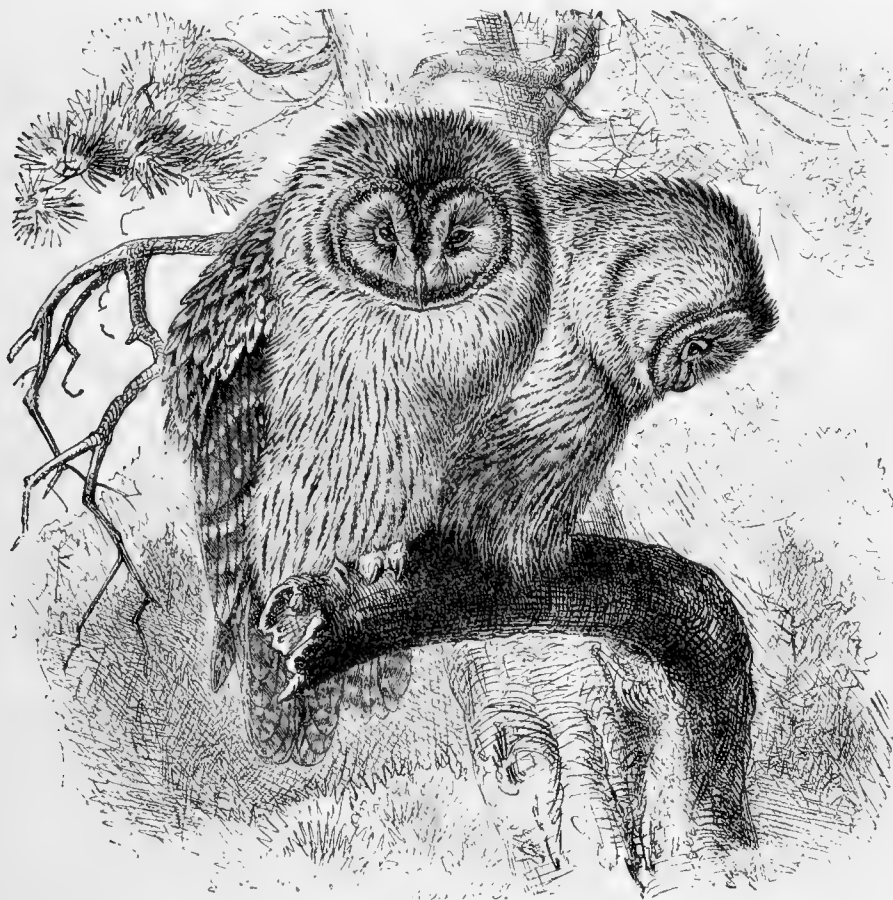
It is a decidedly nocturnal bird, seldom being seen in the light of day, and being always greatly disturbed if it should chance to issue from its concealment while the sun is above the horizon. When it can take its choice of locality, it seems always to prefer some spot where the foliage is thick, dark, and heavy, and if possible will build its nest in the shade of some large evergreen.

The color of this bird is very handsome, but so complicated that it is not easy to describe. The color of the back and upper feathers of the body is pale brown, diversified on the neck and shoulders by sundry longitudinal streaks of black-brown. The upper surface of the wings is variously splashed with black, fawn, and brown, and the primaries are light chestnut barred and spotted with dark brown. The facial disc is curiously marked with several shades of

brown and white, and the "ears" are composed each of seven or eight blackish-brown feathers. The under surface of the body is grayish-white intermixed with fawn and various longitudinal brown streaks, and the legs are covered up to the claws with pale-brown plumage. The sharp curved claws are black, as is the bill, and the eyes are of a light orange.

As the facial disc is very conspicuous in this species, I shall take the opportunity of inserting a few remarks upon that portion of the Owl's structure which have already appeared in "My Feathered Friends."

"It is said that the use of this circle is to collect the rays of light and throw them upon the eye, a provision necessary in dark nights. This principle is apparently carried out in the



URAL OWL.—*Syrnium uralense*.

case of the Barn Owl, where the feathery circle, being of a whitish hue, may be supposed to act as a reflector of the light. But it must be remembered that in the Brown Owls this circle is also brown, and therefore would rather absorb than reflect the light. Besides, objects are seen by the light reflected from *them* to the eyes, while light reflected upon the eyes from the sky would rather distract than aid the vision. When, on a bright day, we put our hands to our eyes in order to view a distant object, we do so not to collect scattered rays and to force them to converge upon the pupil, but rather to keep these scattered rays from interfering with those that proceed directly from the object of vision. The same thing may be observed when people look at a picture through a tube.

"In my own opinion the radiating feathery circle is very simple in its operation, being only a kind of circular splay window cut through the thick mass of plumage in which the head of the bird is enveloped, in order to give it a wider sphere of vision, just as architects cut a splay window in the thick wall of a fort so as to permit a musket-barrel to be pointed in any direction. And the radiating formation of the feathers is preserved, because the natural elasticity of their stems presses aside the softer downy plumage of the head, and preserves the circular

form complete. If examined, they will be found to be formed in a very peculiar manner, and quite distinct from those on which their extremities press."

For the following interesting account of the habits of a tame Long-eared Owl, I am indebted to the kindness of a correspondent.

"The Horned Owlet has a peculiarly cat-like expression of face, and this I think was the chief attraction possessed by a downy grayish-white ball, that was thrust into my lap by one of my boy friends, who at the same time announced its name and nature.

"With great delight I proceeded to introduce him to my other bird pets, but the intense excitement caused by his appearance compelled me to remove him with all speed. The small birds were all afraid of him, but the jackdaw and magpie both charged poor 'Blinker' at once. It then struck me that the cat-like face and nocturnal mousing-habits of the creature indicated the deep secret of its nature, and if so, that it would have more sympathy with the feline establishment than with that of the birds.

"Acting upon this impression, I at once conveyed him to pussy's closet, and introduced him to its occupants, namely, Mrs. Fanny and her blind kitten. Pussy regarded him at first with very suspicious looks; but the poor bird, feeling pleased with the dim light and pussy's soft warm coat, soon nestled up to her. This act of confidence on Blinker's part appeared to affect Fanny favorably, and she at once purred him a welcome. From this time they were fast friends, and many mice did she good-naturedly provide Blinker with, in common with her own kitten. When he grew large enough, he used to sit on the side of her basket, and would never settle quietly for the night until the two cats were asleep in their bed.

"It was quite beautiful to observe the warm affection which grew up between the Owlet and the kitten. The only cause of discord that we ever noticed between the two was when the kitten would play with a living mouse. This evidently hurt Blinker's feelings, for he would always pounce down and seize the mouse by the back of its neck, and kill it in a moment. Still he had a sense of justice in his nature; for when the mouse was dead, he would drop it down to its rightful owner.

"I had him for a year, and was much attached to him; but he fell ill, and went the way of all pets."

The Long-eared Owl (*Asio americanus*). This bird is pretty evenly distributed over the continent of North America, and is one of the most familiar Owls in the Northern States. It is entirely nocturnal in habit; its large golden irides are a striking feature. It is the most numerous of all American Owls.

ANOTHER species of Eared Owl is nearly as common as the preceding bird. This is the SHORT-EARED OWL, or SHORT-HORNED OWL, as it is sometimes called.

The Short-eared Owl (*Asio accipitrinus*) is much smaller than the preceding. It is found on every portion of the continent, but is rare in New England. Though nocturnal properly, it is often seen in company with the Marsh Hawk, hunting over meadows, in cloudy days. Mice and small reptiles are its natural prey.

This species is remarkable for the very small size of the head, which is even smaller than the neck, and gives a very un-Owl-like look to its aspect. In its habits the Short-eared Owl is very unlike its relations, as it flies much by day, and haunts the heaths and open lands in preference to the woods. The eggs of this bird are laid upon the bare earth, which is scraped away by the parent bird until a small hollow is made, and is undefended by the slightest lining. Richardson, however, says that in North America its nest is formed of dried grasses and moss laid on the ground. Sometimes the eggs are laid on a depression among sedges or heather, and there are instances where Owls' eggs, supposed to be of this species, have been found in rabbit-burrows. The eggs are seldom more than three in number. On account of its small head and day-hunting propensities, it is sometimes known by the local name of Hawk Owl.

It does not seem to be very powerful on the wing, seldom flying for more than a hundred

yards, and at a very low elevation. If observed, it seeks the nearest covert, and dives so deeply among the brushwood that it is not easily seen, and cannot be driven out if the covert



SHORT-EARED OWL.—*Ctus brachyotus*.

should be of any great extent. Its food consists chiefly of mice and birds; and Mr. Yarrell mentions that he has discovered in the stomach of a Short-eared Owl the remains of a bat and a half-grown rat.

THE GREAT GRAY OWL (*Uluia cinerea*). This is much the largest of American Owls, indeed of any known species. Its total length is thirty inches; extent of wing, about forty inches. This is properly an arctic bird. It has been rarely captured, or seen in New England or the Northern States. The small size of its eyes indicate its diurnal habit. The feet are small, also, which naturally point to adaptation for small prey. The head has the appearance of being unusually large; the plumage has, however, a large share of the space.

THE BARRED OWL (*Strix nebulosa*) is quite nearly related to the preceding. It has the same soft, cinereous plumage. Its *habitat* is throughout New England, west to Missouri, and south to the Rio Grande. It is remarkable for its soft, rapid, and noiseless flight; the great breadth of wings giving it extraordinary power. In the South it is called the Hoot Owl.

There are twenty-six species of Owls in North America, besides several varieties having variations of marking, and differing somewhat in size.

THE best known of the Owls is the WHITE, BARN, or SCREECH OWL, by either of which appellations the bird is familiarly known everywhere.

This delicately colored and soft-plumed bird is always found near human habitations, and is generally in the vicinity of farm-yards, where it loves to dwell, not for the sake of devouring the young poultry, but of eating the various mice which make such havoc in the ricks, fields, and barns. The "feathered cat," as this bird has happily been termed, is a terrible foe to mice, especially to the common field-mouse, great numbers of which are killed daily by a single pair of Owls when they are bringing up their young family. In the evening dusk, when the mice begin to stir abroad in search of a mole, the Owl starts in search of the mice, and with noiseless flight quarters the ground in a sportsmanlike and systematic manner, watching with

its great round eyes every movement of a grass-blade, and catching with its sensitive ears every sound that issues from behind. Never a field-mouse can come within ken of the bird's eye, or make the least rustling among the leaves within hearing of the Owl's ear, that is not detected and captured. The claws are the instruments by which the Owl seizes its victim, and it does not employ the beak until it desires to devour the prey.

It is curious that the Owl should have two modes of eating, which, as far as my own experience goes, are invariably followed. If the bird has caught a mouse and is going to eat it, the mouse is first bitten smartly across the back so as to destroy all life, and when it hangs motionless from the bird's beak, it is thrown up into the air in a most adroit manner, so as to fall with its head downwards. The Owl then catches the little quadruped in such a manner that its head falls into the bird's mouth, where it hangs for a few seconds. A sharp toss of the head then sends the whole of the mouse down the Owl's throat with the exception of the tail, which hangs out of one side of the beak, generally the left side, and is then rolled about just as a boy rolls a stick of sweetmeats between his lips. After carrying on this process for two or three minutes, the Owl again jerks its head, and the mouse vanishes wholly from sight. But when the Owl has to deal with a bird, it eats it after the manner of the hawks, partially plucking it, and tearing it to pieces with its beak before swallowing it.

A cat with which I am well acquainted always follows the example of the Owl in its method of eating prey. If it catches a mouse, she disposes of it without ceremony, beginning at the head and gradually eating towards the tail; but if she has captured a bird, she places her feet upon its body, and with her teeth seizes the feathers and deliberately pulls them out before she will attempt to eat the carcase. It may be that while the Owl is twisting and turning the mouse in its mouth, it may be lubricating its skin in order to admit of its easier passage down the throat. The feathers of birds are too stiff and absorbent to admit of this process, and are therefore removed by the Owl before it swallows its prey.

Some doubts have been raised respecting the bird-killing propensities of the Barn Owl, many writers having asserted that it never kills adult birds, and that at the worst it only takes a young finch or so out of the nest. Now, as my own Owl was always delighted with a full-grown bird, and proceeded to eat it in a very business-like manner, it seemed to me as if the process were by no means a new one, and these suspicions were confirmed by some "castings" of a Barn Owl which were sent to me, and which contained, among other matters, the bones of birds and an entire skull of a full-grown sparrow. Since that time, I have seen several accounts of similar objects being discovered in the "castings," and it is rather a curious fact that the skull is always unbroken. Generally, the "castings" are composed of the bones and skins of mice, together with the hard portions of various beetles, mostly in the specimens which I have examined belonging to the genera *Carabus*, *Abax*, *Agonum*, and *Steropus*.

Sometimes the Owl has been detected in robbing the pigeons' nests of their young; but such conduct seems to be very exceptional, as there are many instances on record where the Owl has actually inhabited the same cote with the pigeons without touching their young or disturbing the peace of the parents. This Owl is also an experienced fisher, and has been seen to drop quietly upon the water, and return to its nest bearing in its claws a perch which it had captured.

This bird is easily tamed when taken young, and is a very amusing pet. If properly treated, and fed with appropriate diet, it will live for a considerable time without requiring very close attendance. Even if it be set at liberty, and its wings permitted to reach their full growth, it will voluntarily remain with its owner, whom it recognizes with evident pleasure, evincing its dislike of strangers by a sharp hiss and an impatient snap of the bill. One of these Owls, belonging to a friend, was, although a sufficiently amusing bird to its owner, so incorrigibly mischievous and spiteful, that it was at last doomed to death.

It seemed to fear nothing, and to care for nothing with one curious exception, in the person of a free but tame skylark, which was accustomed to sleep in a cage with the door open, and to forage for food on its own account when it was not satisfied with the quantity or quality of the diet that was daily furnished. With this lark the Owl contracted a firm alliance, permitting its little friend to sit upon its back and bury itself among the mass of soft plumage



with which it was clad. This Owl always welcomed the approach of its friend, and when it perched upon its back, seemed as pleased as a horse when his favorite cat comes to bear him company. No other bird was so honored, and a pair of goldfinches that were kept in a cage were constantly persecuted by the Owl, which could never understand that they were not to be killed, and was in the habit of pushing his feet through the bars, in vain attempts to secure the inmates.

It was a confirmed murderer of bats, and small birds as well as mice, and was accustomed to push its prey into a hole in an old wall that had been occasioned by the fall of a brick. In this odd larder were constantly found a strange variety of slaughtered game. Six to eight small birds were often counted when the hole was explored in the early morning, and once the Owl had poked fourteen bats into the aperture. On several occasions, the bird had contrived to pack a moderately sized eel into its storehouse, having always killed the eel by a bite across the back of the neck. The Owl was always attracted by bright and glittering objects, and once was seen to pounce upon a knitting-needle that lay glistening in the moonshine, and to carry it away to its usual receptacle.

This bird was remarkably fond of half-cooked chicken, and was wonderfully delighted if its meal were seasoned with a very slight sprinkling of sugar and salt, a fact which is rather remarkable, because, as a general rule, the predaceous birds do not care for sugar.

The hunting hour of this Owl varied much according to the time of year, and was about six P. M. in April and May, and eight in June and July. It was a spiteful bird, and very much given to attacking strange men and beasts. His last escapade was of such a serious nature, that he was summarily handed over to the executioner. He dashed at a pony which was coming towards the house, and fastening on its nose with its claws, battered the poor beast with his wings to such an extent that it became quite frantic, and by a powerful toss of the head flung its assailant violently on the ground and broke one of his legs. Nothing daunted by this mishap, the Owl returned to the attack, and, grasping the pony's nose with the sound foot, struck his curved beak into its face and recommenced his buffeting. He was at last torn away by main force, and paid the penalty of his mischief with his life.

This species is generally considered to be the typical example of the Owl tribe, as it exhibits in great perfection the different characteristics of the Owls, namely, the thick coat of downy plumage, the peculiar disc round the eye, the large eye-balls, and the heavily feathered legs and toes. The feathers are so thickly set upon this bird, that it appears to be of much greater dimensions than is really the case. When standing on its feet, or while flying over the fields like a huge bunch of thistle-down blown violently by the night breeze, the Barn Owl appears to be rather a large bird; but when the creature is lying on the bird-stuffer's table, after its skin and feathers have been removed, the transformation is really astonishing. The great round head shrinks into the shape and size of that of a small hawk, the body is hardly larger than that of a pigeon, and but for the evident power of the firm muscles and their glistening tendinous sheaths, the bird would appear absolutely insignificant.

Although so small, it is a terrible bird to fight, and when it flings itself defiantly on its back, ire glancing from its eyes, and its sharp claws drawn up to its breast ready to strike as soon as its antagonist shall come within their range, it is really a formidable foe, and will test the nerves of a man to some extent before he can secure the fierce little bird, as I can assert from experience, having had my hands somewhat torn in such an encounter. So fiercely does this bird strike, that I knew an instance where a dog was blinded by the stroke of a Barn Owl's claws. The Owl was a tame one, and the dog—a stranger—went up to inspect the bird. As the dog approached the Owl, the bird rolled quietly over on its back, and when the dog put his head to the prostrate bird, it struck so sharply with its claws that it destroyed both the eyes of the poor animal, which had to be killed on account of the injury. While its young are helpless, the White Owl watches over their safety with great vigilance, and if any living thing, such as a man or a dog, should approach too closely to the domicile, the Owl will dash fiercely at them, regardless of the consequence to itself.

The nest of this species is placed either in a hollow tree, or in a crevice of some old building, where it deposits its white, rough-surfaced eggs upon a soft layer of dried "castings."

These nests have a most ill-conditioned and penetrating odor, which taints the hand which is introduced, and cannot be removed without considerable care and several lavations. The young are curious little puffs of white down, and the Barn Owl is so prolific that it has been known to be sitting on one brood of eggs while it is feeding the young of a previous hatching.

As may be supposed from its popular title of White Owl, this species is very light in its coloring. The general color of this bird is buff of different tints, with gray, white, and black variegations. The head and neck are light buff, speckled slightly with black and white spots, and the back and wings are of a deeper buff spotted with gray, black, and white. The tail is also buff, with several broad bars of gray. The facial disc is nearly white, becoming rusty-brown towards the eye, and a deeper brown round the edge. The under surface of the male bird is beautifully white, the claws are brown, the beak nearly white, and the eyes blue-black. The sexes are very similar in their coloring, but the females and young males may be distinguished by the under surface of the body, which is fawn instead of white.

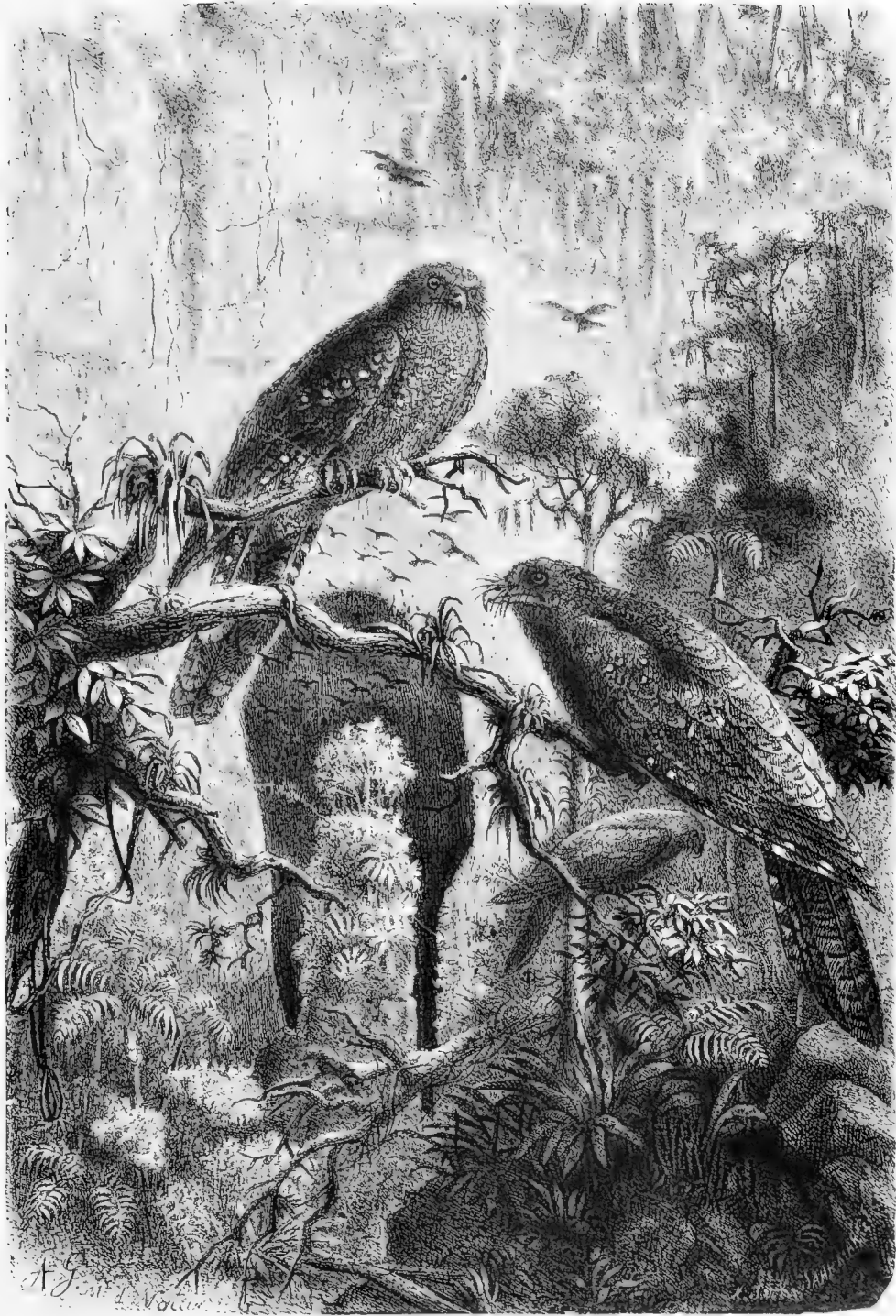
THE AMERICAN BARN OWL (*Aluco flammens*) is common to the more southern portions of the United States, especially near the sea-coast, in Mexico and California. It is rarely seen north of Pennsylvania.

THE SAW WHET OWL (*Nyctale acadica*), called also Acadian Owl. This is rare in New England. Audubon says: "The sound of its love notes bears a great resemblance to the noise produced by the filing of the teeth of a large saw. These notes, when coming from the depths of the forest, produce a very peculiar effect upon the traveller, who, not being aware of their real nature, expects, as he advances on his route, to meet with shelter under a saw mill at no great distance." This is also called Kirtland's Owl. It seems to have something like a ventriloquial voice. At times its voice is like the tones of a distant bell. Audubon noticed this, and asserts that he had never heard the like in any other bird. Its voice was as illusive as the aspect of the "will-o'-the-wisp."

THE LITTLE RED OWL (*Scops asio*). Several varieties of this little Owl are known. It is called Screech Owl and Mottled Owl. It is entirely nocturnal in habit. Its flight is wonderfully silent, being quite imperceptible.

THE SPARROW OWL (*Nyctale richardsoni*), named for the Arctic traveller, Dr. Richardson, inhabits the Arctic regions, but occasionally is seen in New England. It is regarded nearly allied to the European (*N. funerea*). Felner's Owl is a Central American bird.





TRINIDAD GOAT-SUCKER.



# PERCHERS

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## GOAT-SUCKERS.



WITH the owls closes the history of those birds which are called predaceous, although to a considerable extent nearly all birds are somewhat predaceous, even if they prey upon smaller victims than do the vultures, eagles, falcons, or owls. Next to the Accipitres come the Passeres, distinguished by their cere-less and pointed beak, their legs feathered as far as the heel, their tarsus covered in front with shield-like scales, and their slightly curved and sharply pointed claws. This order is a very large one, and embraces a vast variety of birds.

First among the Passerine birds are placed the Fissirostres or cleft-beaked birds, so called from the enormous gape of the mouth, a structure which is intended to aid them in the capture of the agile prey on which they feed. Some of the birds, such as the goat-suckers, swallows, bee-eaters, and others, prey upon insects, which they take upon the wing; while some, such as the kingfishers, feed upon fish, which they snatch from the water and bear to their homes in spite of their hard, slippery, scale-covered armor, or the watery element in which they dwell.

The GOAT-SUCKERS, as they are familiarly termed, from a stupid notion that was formerly in great vogue among farmers, and is not even yet quite extinct, that these birds were in the habit of sucking the wild goats, cows, and sheep, are placed first among the Fissirostres on account of the wonderfully perfect manner in which their structure is adapted to the chasing and securing of the swift-winged insects on which they feed. The color of all these birds is sombre; black, brown, and gray being the prevailing tints. The gape of the mouth is so large that when the bird opens its beak to its fullest extent, it seems to have been severely wounded across the mouth, and the plumage is lax and soft like that of the owl.

THE singular bird which is known by the name of the TRINIDAD GOAT-SUCKER, or GUACHARO, is remarkable for the peculiarity from which it derives its name of *Steatornis* or Fat-Bird.

The Guacharos congregate in vast multitudes within the shelter of certain dark caverns, the greater portions of which remain unexplored owing to the superstitious fear of the natives, who fancy that the spirits of their ancestors hold their gloomy state in the innermost recesses of the caverns where the Guacharos reside. So strongly is this idea imprinted in their minds, that to "join the Guacharos" is, in the native language, an expression which signifies the death of the person of whom it is said. In these caverns the Guacharos build their nests, choosing for that purpose certain holes which exist in the roof, some forty or fifty feet in height.

THE members of the genus *Podargus* are chiefly remarkable for the great width of their beaks, which at their base are broader than the forehead of the bird. The tip of the beak is hooked, and the upper mandible overlaps the lower at its edges. They are all handsome birds, and many of them are of considerable dimensions.

The TAWNY-SHOULDERED *PODARGUS* is a native of Australia, and an admirable account of the bird, as well as good figures, may be found in Gould's magnificent work on the Birds of Australia.

*THE TAWNY-SHOULDERED PODARGUS.*

This bird is one of the drowsiest of creatures, being less easily roused by day than any other slumberer of night. All the day long it sits sleeping upon a branch, its body crouched



TAWNY-SHOULDERED PODARGUS.

closely to the bough, its head buried amid the masses of soft feathers upon the neck and shoulders, and its whole form as motionless as if it were carved out of the branch on which it reposes. It is worthy of notice that the Podargi always sit across the branch on which they rest, whereas the generality of Goat-suckers recline longitudinally upon the bough. This

bird however, is so quiet, and its sombre color harmonizes so well with the bark of the branch to which it clings, that even by day it needs a quick and practised eye to discern its form.

These birds almost invariably sit close together in pairs, and they are so incorrigibly drowsy, that if one of the pair be shot, its mate will not be disturbed even by the report of the gun or the fall of its companion, but sit quietly in its place, and may either be knocked down with a stick, shot with a second charge, or taken by hand, as is most convenient. If pushed off the branch by a long rod, the Podargus can barely summon sufficient energy to save itself from falling to the ground, and flapping its wings languidly to the nearest bough, settles, and is almost immediately wrapped in sleep, thus practically carrying out the complaint of Dr. Watts' sluggard, "You have waked me too soon, I must slumber again." Sometimes, however, it is known to fly by day without being thus violently disturbed, but such instances of diurnal liveliness are extremely rare, and may be considered exceptional.

As soon, however, as the daylight fades out of the sky, the Podargus awakes from its stupor, and after a few shakings and plumings of feathers, becomes a most lively and ani-



NEW HOLLAND GOAT-SUCKER.—*Egotheles novæ-hollandiæ*. (See page 96.)

mated bird, quick, light, and active in all its movements, and scarcely to be recognized as the same being which but a few hours ago seemed hardly able to move a head or limb without difficulty. At the earliest approach of nightfall the Tawny-shouldered Podargus sets off on its travels in search of food, and chases the insects on which it feeds with great agility and perseverance.

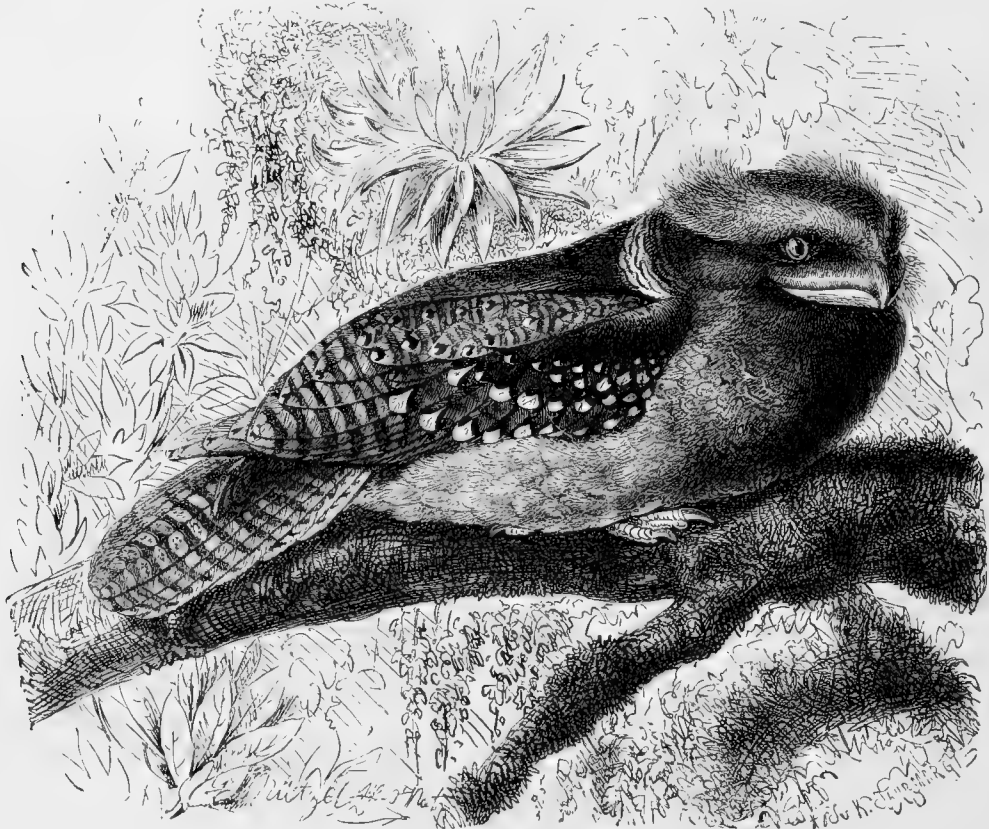
A MUCH smaller but very beautiful example of the Podargi is the MOTH PLUMED PODARGUS (*Podargus phalaenoides*), so called on account of the exquisitely soft tinting of its feathers, which bear a very close resemblance to the velvet plumage of the large moths. The moth-like hues are most perceptible upon the wing-coverts, which are thickly sown with markings that closely resemble the "eyes" found upon the wings of so many large moths, and that add so much to their beauty. These "eyes" are very like those which decorate the wings of the well-known Emperor moth, but are devoid of the brilliant colors of that insect, and are composed of different shades of gray and brown.

LASTLY, the PLUMED PODARGUS deserves notice on account of the singular development of the feathers of the nostrils, which rise to a considerable height, and are richly spotted with black, brown, and white, forming a kind of plume over the forehead. It is a large and hand-

some bird, and is generally found in the deepest bushes upon the banks of rivers of New South Wales. Its scientific title is *Podargus plumiferus*.

THE NEW HOLLAND GOAT-SUCKER is a very fine and beautifully marked bird, its plumage being richly mottled with black and brown upon its upper surface, while the under surface is rusty gray, curiously variegated with buff. The tail is barred with darker bands.

This bird is very owl-like in its appearance and many of its habits, and has therefrom received the popular title of OWLET NIGHTJAR. In the shape of its head, and the steady upright carriage, it bears a great resemblance to the Coquimbo Owl, a likeness which is further



GREAT-EARED GOAT-SUCKER.—*Batrachostomus auritus*.

carried out by the sharp, angry hiss which it emits when irritated. Like the owls, it also possesses the habit of twisting its head so that the beak is brought on a level with the spine.

The New Holland Goat-sucker resides in the hollow branches of the eucalypti, technically called "spouts" by the colonists. When the sportsman wishes to know whether a "spout" is occupied by one of these birds, he has nothing more to do than to administer a sharp tap to the branch with a stick or axe. Should the bird be at home, it runs quickly to the entrance, pops out its head, and, after surveying the intruder for a moment, retires into the seclusion of its domicile. It will repeat this process several times, but at last loses patience at the frequent interruptions, and fairly takes to flight. In these "spouts" the eggs are laid, being placed simply upon the soft decaying wood. The eggs are white in color, and from three to five in number. There are generally two broods of young in the year. The bird is nocturnal, and its principal food consists of insects, mostly of the coleopterous order.

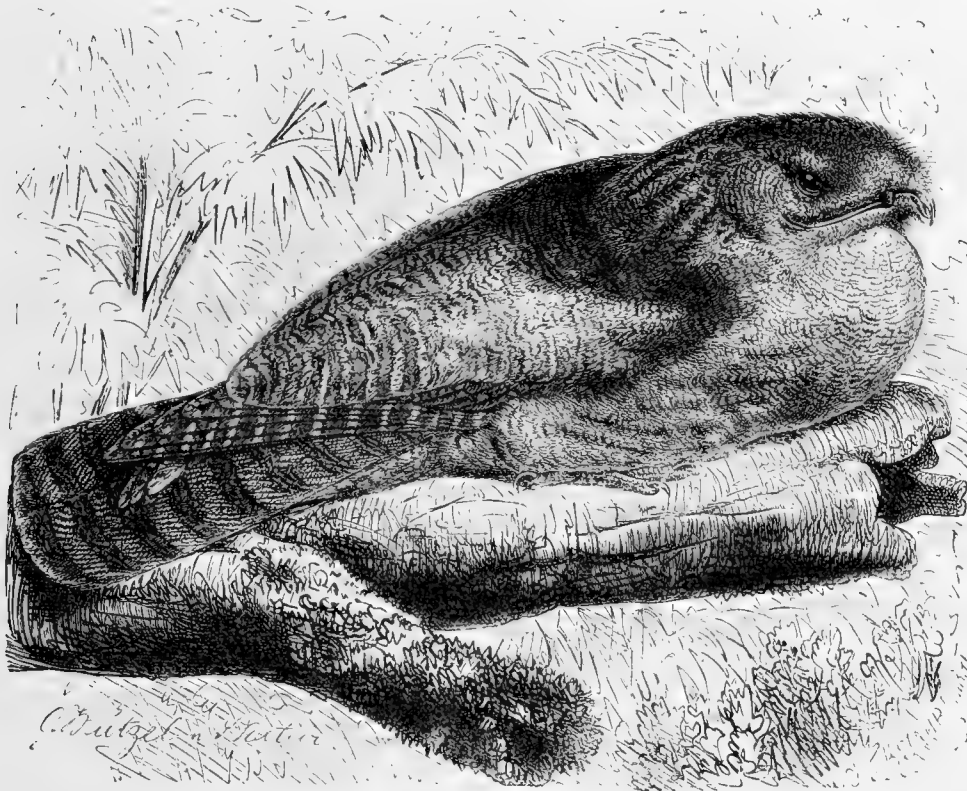
A CLOSELY allied species is worthy of notice on account of the very singular arrangement of color upon its head.

This is the WHITE-BELLIED NIGHTJAR (*Zegothéles leucogaster*), which may be distinguished from all its relatives by the white hue of the under surface of its body, and the three broad



dark bands which surround its head and the upper part of its neck. One of these bands is short, and is placed just above the beak, while the other two sweep in bold curves, being very wide upon the top of the head, and narrowing rapidly to the corner of the eye, where they cease. It is extremely shy, but withal a dull bird, and when alarmed flies leisurely to the nearest tree, and, perching upon a branch, turns round to reconnoitre the cause of its alarm. When it sits in this manner it has very much the aspect of a common hawk.

ON account of a difference in the arrangement of the quill feathers of the wing, the birds which form the genus *Batrachostomus* have been separated from the Podargi. The generic name is of Greek origin, and is very appropriate, as it signifies "frog-mouthed," and is anal-



GREAT IBIGAU.—*Nyctibius grandis*.

ogous to the French name of Crapaud-volant, or Flying Toad, which is given to all the Goat-suckers. The birds of this genus are not equal in dimensions to the Podargi, and they are all inhabitants of the Indian Archipelago, instead of being found in Australasia.

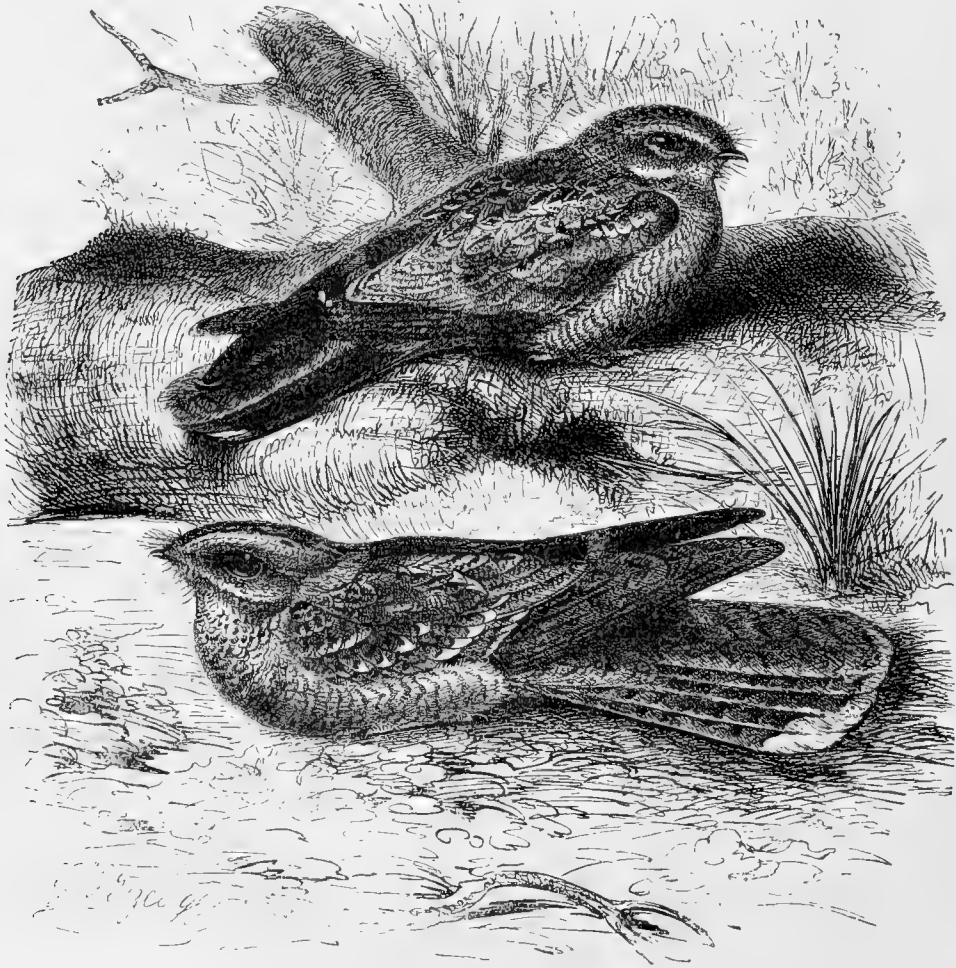
THE GREAT-EARED GOAT-SUCKER is chiefly remarkable for the extreme length of certain feathers which start horizontally from the upper part of the head, and are evidently analogous to similar structures in the eared or horned owls. The gape of the bill is wonderfully wide in this bird, and with its soft plumage, great round eyes, and large head, with its tufts of feathers at each side, it has a peculiarly owl-like aspect. The color of its plumage is black, gray, buff, and brown, all curiously mottled and intermixed with each other in a manner almost similar to the Goat-sucker, and which cannot be described without a needless expenditure of time and space. It is a nocturnal bird, and seems to be very shy in disposition.

ONE of the largest examples of the Goat-suckers is the GRAND GOAT-SUCKER (*Nyctibius grandis*), sometimes called the GREAT IBIGAU.

This fine bird is nearly thirteen inches in length, and in its habit resembles closely the common Goat-sucker of Europe. It is a nocturnal bird, as may be gathered from its generic

title of *Nyctibius*, a word derived from the Greek, and signifying Night-liver. It is stronger on the wing than the preceding birds, and is capable of chasing its insect prey as they fly through the air in the dusk of evening, or just before the dawn of morning. In its outward form there is little to attract notice, and its coloring is the same as that of its allies, excepting that some dark bars extend across the head, neck, and lower parts. It is a native of South America, and has been taken in Cayenne.

THERE are many well-known proverbs relating to the power of calumny, and the readiness with which an evil report is received and retained, notwithstanding that it has been repeatedly



EUROPEAN GOAT-SUCKER.—*Caprimulgus europæus*.

proved to be false and libellous. The common GOAT-SUCKER is a good instance of the truth of this remark, for it was called *Aigothéles* or Goat-sucker by Aristotle in the days of old, and has been religiously supposed to have sucked goats ever afterwards. The Latin word *caprimulgus* bears the same signification. It was even supposed that after the bird had succeeded in sucking some unfortunate goat, the fount of nature was immediately dried up, and the poor beast also lost its sight. Starting from this report, all kinds of strange rumors flew about the world, and the poor Goat-sucker, or NIGHTJAR, as it ought more rightly to be called, has been invariably hated as a bird of ill omen to man and beast.

As usual, mankind reviles its best benefactors, for there are very few creatures which do such service to mankind as the Nightjar. Arriving in the north of Europe in the month of May or June, it reaches the northern shores just in time to catch the cockchaffers, as they fly about during the night in search of their food, and does not leave us until it has done its best to eat every chaffer that comes across its path.

The damage which is done by these brown-backed, white-ribbed, hook-tailed beetles is almost incredible, for they are not only extremely destructive in their larval states, but are scarcely less voracious when they have assumed their perfect form. Passing a life of three years or so below the level of the ground, the larvæ of the cockchaffer shear away the grass-roots and other subterranean vegetation with their scissor-like jaws, and are constantly busy in satiating the hunger of their huge stomachs, which occupy nearly the whole of the body of the grub. When they have passed through their earlier changes of form, the cockchaffers rise from the ground, and, taking to flight, settle upon the trees and devour the foliage just as they had previously fed upon the roots. Sometimes a whole series of trees may be seen, which have been entirely stripped of their leaves by the chaffers. I well remember seeing a row of trees that extended along a country road that had been totally despoiled of their foliage, and which stretched their naked branches abroad as if they had been blasted by the destroying breath of the Simoom.

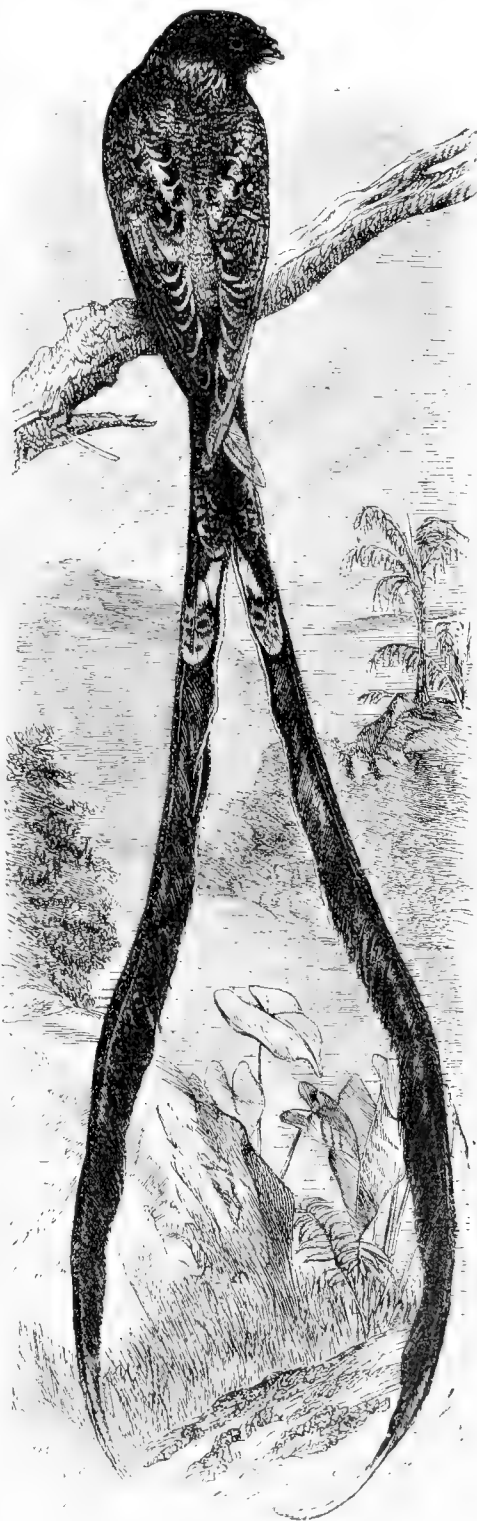
A VERY remarkable form of plumage is seen in the LYRE-TAILED GOAT-SUCKER.

This beautiful bird is a native of Columbia, and is notable for the extraordinary development of the outer tail-feathers. Although the bird itself is by no means large, very little exceeding the common Nightjar in dimensions, the total length of an adult male Lyre-tailed Goat-sucker is nearly three feet. Indeed, the general contour of the body and plumage remind the observer strongly of the resplendent Trogon, a bird which will very shortly be described and figured.

The general color of this species is the mottled dark and light brown which is universal among the Goat-suckers, but is diversified by a band round the neck of rich chestnut. The primaries are nearly black, with the exception of a few chestnut spots scattered irregularly upon their necks. The extremely elongated tail-feathers are deep brown-black, edged with a warm band of pale brown upon the inner web. The outer web is hardly a quarter of an inch wide, while the inner is almost an inch and a half in width. Several feathers of the tail project for some distance, and lie upon the base of the elongated feathers.

THE CAROLINA GOAT-SUCKER is more popularly known under the title of CHUCK-WILL'S-WIDOW, a name which it has earned in consequence of its repeated utterance of a cry that exactly resembles those words.

This pretty and interesting bird resides in the deepest ravines, swamps, and pine ridges, where it cannot only obtain shelter and a convenient nesting-place, but is also sure of finding a plentiful supply of insect prey. It prefers to roost in the hollows of decayed trees, or other

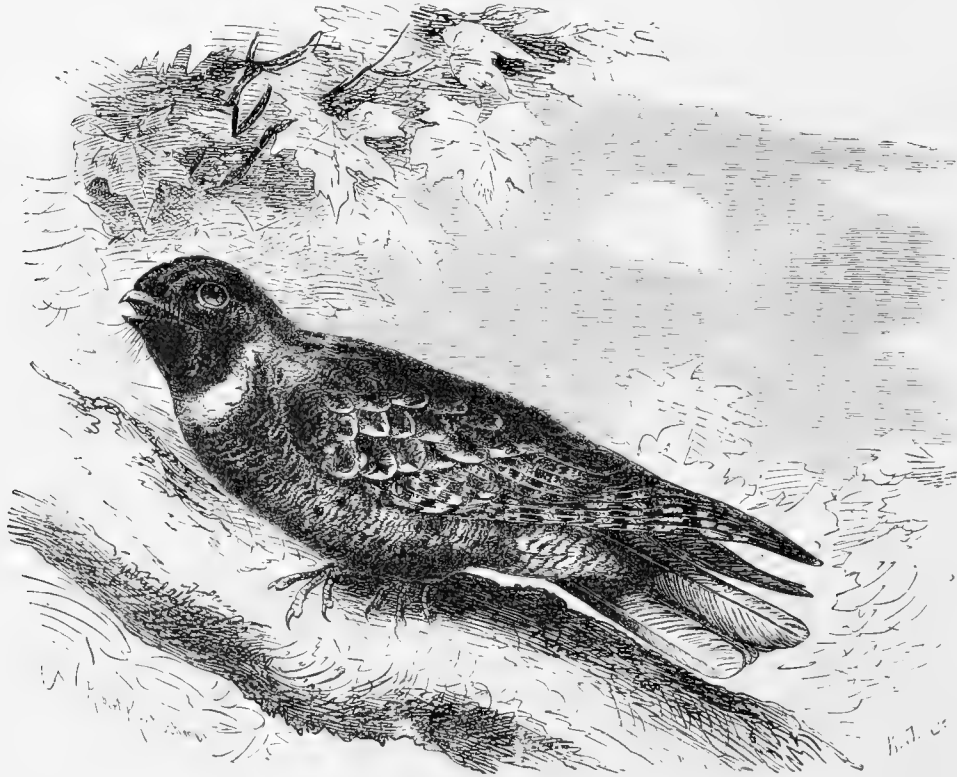


LYRE-TAILED GOAT-SUCKER.—*Caprimulgus lyra*.

retired spots, and is not unfrequently found tenanted the same habitation together with a large company of bats.

The nest is as open and undefended as is the case with most of the Goat-suckers, and the eggs and young would probably be exposed to considerable danger, were it not for the wonderful care and ingenuity displayed by the parents when their offspring are in danger. The following account of the behavior of the bird when it fears that its nesting-place has been discovered, is given by Audubon :

“When the Chuck-Will’s-Widow, either male or female, for each sits alternately, has discovered that its eggs have been touched, it ruffles its feathers, and appears extremely dejected for a minute or two, after which it emits a low murmuring cry, scarcely audible



CAROLINA GOAT-SUCKER.—*Caprimulgus carolinensis*.

to me as I have lain concealed at a distance of eighteen or twenty yards. At this time I have seen the other parent reach the spot, flying so low over the ground that I thought its little feet must have touched it as it skimmed along. After a few low notes and some gesticulations, I have witnessed each take an egg into its large mouth, and both fly off together, skimming closely over the ground, until they disappeared among the branches and trees. But to what distance they remove their eggs I have never been able to ascertain, nor have I ever had an opportunity of witnessing the removal of the young.”

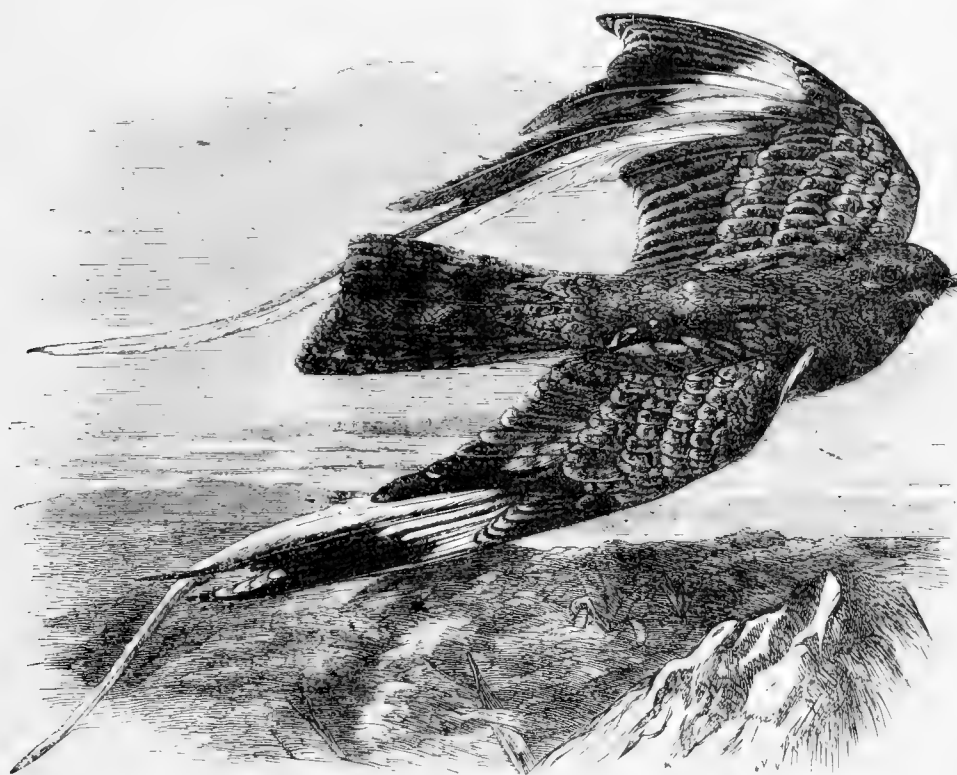
M. Audubon proceeds to say that the birds do not carry away the eggs unless they have been touched, and that if the parent bird be merely frightened from her nest by the sudden shout of a stranger, she will return to her eggs as soon as the intruder has left the spot.

THE LONG-TAILED GOAT-SUCKER is one of the most conspicuous of this group of birds ; the long and slightly curved feathers of its tail giving it some resemblance in outline to the European Cuckoo. The body of this species is by no means large, but the bird appears to be considerably above its real dimensions on account of the great length of its tail.

In the color of its plumage it is rather a handsomer bird than the generality of Goat-suckers, owing to the quantity of white which is laid in bold markings on several parts of its

feathers. The chin is white, as is also a streak that passes from the corner of the mouth. A broad band of white passes across the extremities of the lesser wing coverts, and there is a smaller band of cream color upon the tips of the greater coverts. Another beautifully white band is drawn across the middle of the first six primary feathers, and the remaining primaries have a spot of white on their tips. The rest of the plumage is variegated with black and brown, warmed here and there with a more ruddy hue. The tail is also white in several parts, and has a number of very narrow dark bars across the middle pair of feathers. The Long-tailed Goat-sucker is an inhabitant of Western Africa.

THE LONG-WINGED GOAT-SUCKER is a scarcely less wonderful bird than the Lyre Goat-sucker which has already been mentioned, the extraordinary development of feather being in the present case transferred from the tail to the wing.



LONG-WINGED GOAT-SUCKER.—*Cosmetornis vexillarius*.

The color of the Long-winged Goat-sucker is generally of the usual tints of chestnut and brown, but is diversified by a broad grayish-white irregular band, which passes across the centre of the secondaries, and part of the base of the primaries. From the white band, a dark-brown stripe runs towards the back, the feathers composing it being tipped with white. The elongated feathers of the wing increase the length of the bird to two feet or even more, and their color is very dark brown on the outer web, and grayish-white on the inner. The Long-winged Goat-sucker is an inhabitant of Western Africa.

THE LEONA NIGHTJAR affords another example of the singular form which plumage so often takes without any apparent object.

In the male bird, a pair of very long and very elastic feather shafts rise from the middle of the wing-coverts, and extend to a length of eight-and-twenty inches, according to the individual. These shafts are totally destitute of barbs, except at the extremity where they suddenly give out a broad web of four or five inches in length. The transition from the bare shaft to the broad web is so abrupt that the bird looks as if it had originally possessed a pair of very long perfect feathers, which had been stripped with the exception of a few inches at

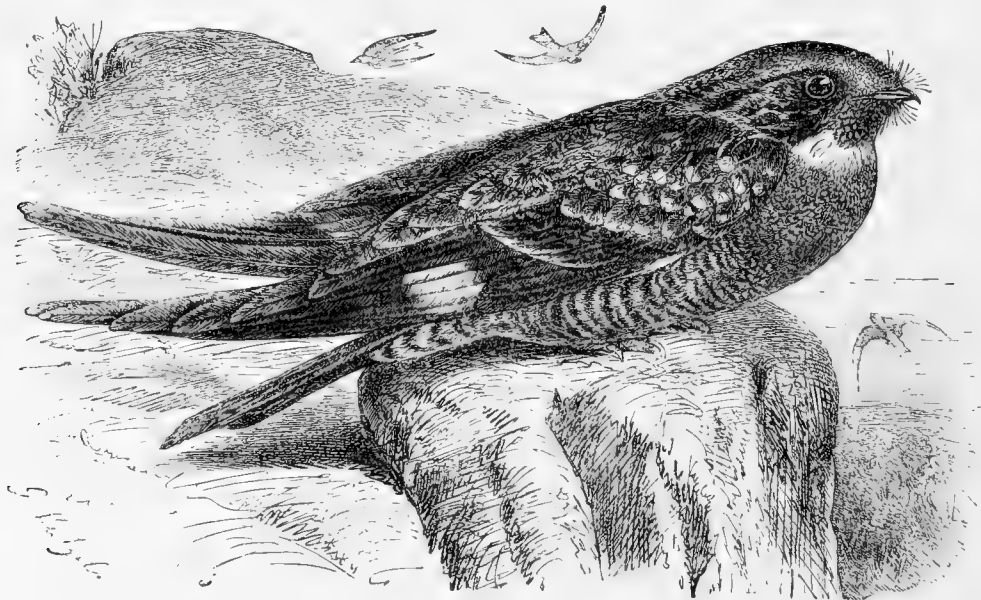
their extremities. The shafts are very slight indeed, and as the webbed ends are easily acted upon by the wind, they are continually moving, and float about in the breeze in a most graceful manner. The inner web of these curious feathers is nearly two inches in width at its broadest part, while the outer web is barely one fourth of that measurement.

The object of these curious appendages is not known. They are only found in the male bird, and evidently bear an analogy to the train of the peacock and the long tail-feathers of the pheasant among the birds, as well as to the beards, horns, tusks, manes, and similar appendages of male quadrupeds. The plumage of the Leona Nightjar is very prettily marked with spots and bars of rusty-red and black upon the usual brown ground. Every primary feather possesses nine rusty-red spots, and as many of a black hue, and there are many other spots and bars scattered over the body and wings. There is a considerable amount of creamy white upon the scapularies, a few white mottlings upon the throat of the male, and a reddish-white stripe down the outer web of the two exterior tail-feathers.

The beak of this species is not so powerful as in many of its relatives, but the vibrissæ are long and well developed. The wings are long, overpassing the tip of the tail while the bird is at rest, and showing that the powers of flight are considerable. The bird is not a large one, measuring only eight or ten inches in total length. It is a native of Western Africa.

THE VIRGINIAN GOAT-SUCKER, MOSQUITO HAWK, OR NIGHT-HAWK, inhabits the northern parts of the American continent, and in the summer months is seen even in the Arctic regions.

It is not so exclusively nocturnal a bird as most of the Goat-suckers, but will voluntarily leave its home on a cloudy day, and commence its task of hunting after flies, moths, beetles,



VIRGINIAN GOAT-SUCKER.—*Chordeiles virginianus*.

and other insects on which it feeds. It is a bird of vigorous and active wing, and follows its insect prey even into the loftier regions of the air, where it seems as much at its ease as the swift or the swallow. While chasing the insects, the Night-hawk constantly utters a shrill, squeaking kind of cry, reminding the spectator of the screaming cries of the common swift. It also has a curious habit of hovering over its mate as she sits on her eggs, darting down upon her from a considerable elevation, and then suddenly sweeping up again with a loud booming sound, occasioned either by the wings or by the vocal organs. This strange manœuvre is constantly repeated, and appears to be performed for the purpose of showing a delicate attention to the sitting bird, and amusing her during her long and tedious task.

The eggs of this bird are placed on the bare ground, and when a stranger happens to approach the spot where they are lying, the parent bird immediately flings herself in the way of the intruder, and by tumbling about in front of him, as if she had broken a wing or otherwise disabled herself, endeavors to induce him to leave the sacred spot and give chase. If she succeeds in decoying him from the locality, she darts into cover, and takes the earliest opportunity of returning quietly to her nest. Many birds pursue this curious contrivance, the common peewit or lapwing being a very familiar instance among ourselves.

The eggs of this species are generally two in number, grayish-white in color, covered with a number of streaks and dashes of brown. The young are odd little creatures, clothed with a quantity of fine, brownish-gray down, and of a very indeterminate shape. The tail of this bird is forked, and the long wings overpass the tail when they are closed. The bill is rather small. The color of the Night-hawk is rather different from that of the ordinary *caprimulgidæ*, being notable for a greenish gloss upon the dark-red brown of the general plumage. A number of yellowish spots occur upon the head, neck, and wing coverts, there is a well-defined white band across the middle primaries, together with a white patch on the throat, and an irregular stripe above the eyes. The total length of this bird is between nine and ten inches.

THE WHIP-POOR-WILL also belongs to this group of birds, and is familiarly known by the peculiar melancholy cry, which very much resembles the other odd names by which it is called.

THE birds which belong to the genus *Podargus* have less of the peculiar Goat-sucker aspect than any of their relatives, owing to the comparative paucity and scantiness of the vibrissæ, the naked legs, the shortness of the tail, and the comparatively small gape of the mouth. The wings of these birds are extremely long, and the powers of flight are very considerable.

THE NACUNDA GOAT-SUCKER, one of the best examples of this genus, is a diurnal bird, like the Virginian Goat-sucker, and excepting on very bright days, may be seen abroad even at noon, chasing the insects at a great elevation, and wheeling and diving after them with the activity of the swallow. It also descends close to the ground, and pursues the gnats and other aquatic flies as they rise from the surface of the water, or attempt to settle for the purpose of depositing their eggs. It is a handsome bird, possessing a brilliantly variegated plumage. On the upper parts of the body, the feathers are generally of a grayish-brown variegated with large spots of black-brown, edged with rusty-red, and mottled here and there with the same tint. The under parts of the body are nearly white, the chin being tinted with cream-yellow, and covered with a few grayish bars, and the breast white, striped with gray-brown horizontal lines. The tail is beautifully mottled with yellow and brownish-black, and crossed by a number of black bars, sprinkled with dots of brown. The Nacunda Goat-sucker is a native of Brazil and Paraguay.

THE absurd designation Goat-sucker, Latinized to *Caprimulgida*, should be discontinued, and were it not for the stern law of priority in nomenclature, it would undoubtedly be very quickly. Yet, there is no other name to distinguish the group.

The Whip-poor-Will (*Caprimulgus vociferus*) has a very appropriate trivial name, as it exactly represents the curious note of the bird.

The larger species, called Chuck-Will's-Widow, is well represented in the original text and figure.

A small species is found in the Rocky Mountains called Poor-Will, as the note is similar to that of the former, but is cut short.

The Night-hawk (*Chordeiles*) is much like the preceding forms, but has very different habits. It is well represented in the figure, where it is called Virginian Goat-sucker. The former title is the more common. This bird builds its nest on the flat roofs of city houses. In early May the *peep-peep* of the male bird is heard overhead, near where its mate is preparing

its nest. This curious habit of the Night-hawk is seen in New York City. Its singular booming sound, alternating with *peep-peep*, is quite distinct above the noise of the streets.

Two other species of Night-hawks are seen in the Northern States.

These birds are active about the early morning hours and during twilight, while the Whip-poor-Will is wholly nocturnal in habit, spending the day in sleep, sitting on some limb lengthwise.

## SWALLOWS.

### THE SWIFTS.

THE close-set plumage of the SWALLOW TRIBE, their long, sickle-like wings, their stiff, firm tail, forked in most of the species, and their slight legs and toes, are characteristics which mark them out as birds which spend the greater part of their existence in the air, and exercise their wings far more than their feet.

They all feed upon insects, and capture their prey in the air, ascending at one time to such a height that they are hardly perceptible to the naked eye, and look merely like tiny dots moving upon the sky, while at other seasons they skim the earth and play for hours together over the surface of the water, in chase of the gnats that emerge in myriads from the streams, during the time and season when they assume the perfect form. The gape of the mouth is therefore exceedingly great in these birds, reaching as far as a point below the eyes. The bill itself is very short, flattened, pointed, slightly curved downwards, and broad at the base.

The group, which is scientifically termed the Hirundinidæ, is a very large one, and is divided into two lesser groups, the members of one being classed together under the title of Swifts, while the others are known by the name of Swallows. With the former birds we have first to deal.

THE Swifts, technically called the "Cypselinæ," or Cypseline birds, are readily distinguished from the Swallows by the very great comparative length of the two first primary feathers of the wing, which are either equal to each other, or have the second feather longer than the first. The secondaries are remarkably small, being nearly concealed under the coverts. There are ten primaries in the wing, and the same number of quill feathers in the tail.

THE AUSTRALIAN SPINE-TAILED, NEEDLE-TAILED SWALLOW, or SWIFT, as it ought rather to be called, is the largest of all the Swallow tribe, measuring no less than twenty-eight inches in total length when the wings are closed, and twenty inches to the extremity of the tail.

The title of NEEDLE-TAIL has been given to this bird on account of the curious formation of the tail-feathers, which are short and even, and have their extremities devoid of web, so as to form a row of sharp, short points, as if a number of needles had been thrust through the shaft of each feather. This species is a native of Australia, and as may be seen from the following extract from Mr. Gould's work on the Birds of Australia, is very interesting and curious in its habits, and worthy of special attention from any naturalist who may chance to have an opportunity of watching it.

"The keel or breast-bone of this species is more than ordinarily deep, and the pectoral muscles more developed than in any other bird of its weight with which I am acquainted. Its whole form is especially and beautifully adapted for aerial progression, and, as its lengthened wings would lead us to imagine, its power of flight, both for rapidity and extension, is truly amazing. Hence it readily passes from one part of the country to another, and if so disposed may be engaged in hunting for flies on the continent of Australia at one minute, and in half-an-hour be similarly employed in Van Diemen's Land.

"So exclusively is this bird a tenant of the air, that I never in any instance saw it perch, and but rarely sufficiently near the earth to admit of a successful shot; it is only late in the evening and during lowery weather that such an object can be accomplished. With the excep



tion of the crane, it is certainly the most lofty as well as the most vigorous flyer of the Australian birds. I have frequently observed in the middle of the hottest days, while lying prostrate on the ground with my eyes directed upwards, the cloudless blue sky peopled at an immense elevation by hundreds of these birds, performing extensive curves and sweeping flights, doubtless attracted thither by the insects that soar aloft during serene weather. Hence, as I have before stated, few birds are more difficult to obtain, particularly on the continent of Australia, where long droughts are so prevalent; on the contrary, the flocks that visit the more humid climate of Van Diemen's Land, where they necessarily seek their food nearer the earth, are often greatly diminished by the gun during their stay.

"I regret that I could ascertain no particulars whatever respecting the nidification of this fine bird, but we may naturally conclude that both rocks and holes in the larger trees are selected as sites for this purpose, as well as for a roosting-place during the night. Before retiring to roost, which it does immediately after the sun has gone down, the Spine-tailed Swallows may frequently be seen either singly or in pairs, sweeping up the gullies or flying with immense rapidity just above the top of the trees, their never-tiring wings enabling them to perform their evolutions in the capture of insects, and of sustaining themselves in the air during the entire day without cessation."

The Australian Needle-tailed Swallow is a most beautiful bird in its coloring, as well as handsome in size and elegance of shape. The general color of this bird is olive brown, exceedingly dark in the chest and abdomen, and washed with a dark green tinge upon the back of the head, the wings, and the tail. Before the eyes there is a velvet-black patch, and a large portion of the under parts of the body is white, including the chin, throat, under tail-coverts, and the inner web of the secondaries. There is also a white band extending across the forehead.

A CLOSELY allied species is the Aculeated Swallow (*Chætura pelasgia*).

This bird is a native of many parts of America, being found in Louisiana, Carolina, and even in Pennsylvania. It is chiefly remarkable for the ingenuity which it exhibits in the construction of its singular nest. Choosing some convenient locality, such as a rocky crevice, or the unused chimney of a house, the bird commences its labors by putting together a slight platform of dry twigs, which it cements together with certain vegetable gums. So large is this platform, that it sometimes causes considerable inconvenience to the inhabitants of the house where the Swallow has taken up its residence, as it completely stops up the orifice of the chimney. Upon this platform is formed a kind of cradle nest, also composed of small twigs, which are woven into a kind of rude basket, and also cemented together.

The eggs of this species are very large in proportion to the dimensions of the parent bird; their color is grayish-white, streaked and spotted with black and brown towards the large end. The general color of the plumage is brown, and the throat is whitish-gray.

THE birds which belong to the genus *Macropteryx*, or Long-winged Swifts, possess wings of very great comparative length, owing to the development of the two first primary feathers of the wings, which are nearly equal to each other in length, the second being slightly the longer of the two. They may, however, be easily distinguished from the members of the genus *Acanthylis*, by the formation of the tail, which, instead of being composed of feathers of nearly equal length, and tipped with sharp points, is forked after the manner usually observed in the smaller tribes. The feet are furnished with four toes, the hinder toe being directed backward.

THE KLECHO SWALLOW, or LARGE-WINGED SWIFT, as it is more rightly termed, as it belongs to the ranks of the Cypseline birds, is considered of great value by ornithologists as supplying a link in the chain that connects the Swifts with the Swallows. Like the Swifts in general, its feet are well adapted for climbing, and supplied with firm curved claws; and like the Swallows, its hinder toe is directed backwards, and cannot be brought round in a line with the remaining toes. It is a very handsome bird, in its coloring nearly equalling the Needle-tailed Swift which has just been described. The color of the upper parts of the body is deep

brown, through which runs a strong tinge of green that gives a beautiful glossy aspect to that part of the plumage. The throat and breast, together with the under tail-coverts, are very light gray, and the abdomen, part of the scapularies, and a well-defined streak over the eye, are white.

This bird is a native of many parts of India, and has been taken in Java and Malacca.



KLECHO SWALLOW.—*Dendrochelidon longipennis*.

The true SWIFTS, of which one is known very familiarly, while the other is a very rare and almost unnoticed species, are remarkable for the feathered tarsus, the long wings, and the peculiar form of the feet. In this member, all the toes are directed forward, a structure which is admirably adapted to the purpose which it fulfills. The Swifts build their nests, or rather lay their eggs, for the nest is hardly worthy of the name, in holes under the eaves of houses, or in similar localities, and would find themselves greatly inconvenienced when seeking admission into their domiciles, but for the shape of the feet, which enables them to cling to the slightest projection, and to clamber up a perpendicular surface with perfect ease and safety. In one species, the White Collared Swift (*Cypselus cayenensis*), the feet are clothed with feathers to the base of the claws.

THE WHITE-BELLIED, or ALPINE SWIFT, which the reader will find illustrated together with the next bird, is the largest of the Hirundinidæ, being rather more than eight inches in total length. It is common on the continent of Europe, and in many parts of Africa and Asia.

Unlike the common Swift, which is possessed of a loud and stridulous note, the Alpine Swift is sweet of voice; its cry, although loud, being musical in its intonation. The popular name of this bird is given to it on account of the white hue of the under portions of its body, the only excep-

tion being a broad dusky bar across the breast. The toes are brown with an orange tint, and the black beak is longer than that of the common Swift. The general color of its plumage is brown. The nest of this bird is made in crevices of lofty cliffs or buildings, and is composed of straw, hay, moss, and other substances, connected firmly together with a glutinous secretion furnished by certain glands, and rendered very hard and firm when the cement is dry. The eggs are four or five in number, white, and very long in proportion to the breadth.

The following interesting account of the habits of this bird is given by Mr. Thompson:—

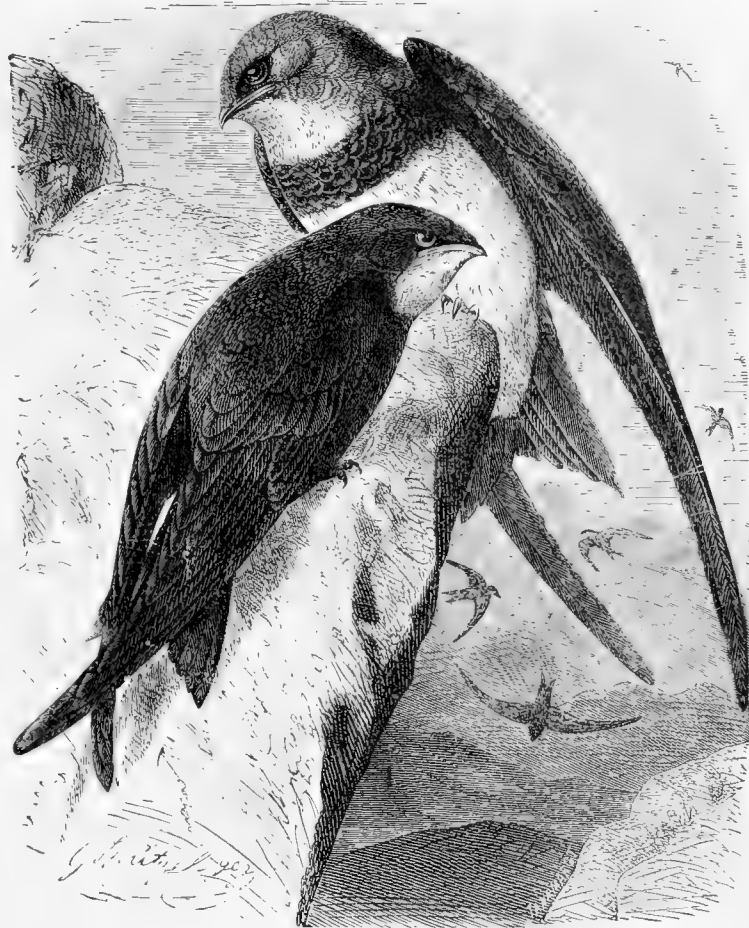
“The first place I met with the Alpine Swift was almost ten miles to the north of Naples, on the 12th of August, 1826, when a great number were observed associated together in flight, at a high elevation. Their evolutions in the air were similar to those of a common Swift. Independently of their superior size, which at once distinguishes them from that bird, the white color of a portion of the under plumage, from which they have received the name of White-bellied Swift, is conspicuous, even when the bird is at a considerable altitude.

“When on the Continent, in 1841, with my friend, Professor E. Forbes, this species was first seen by us on the 9th of April, as we descended the Rhone, from Lyons to Avignon. About half way between these cities, several appeared flying over the river, and a few at all suitable places thence to Avignon. On the morning of the 28th of April, as we entered the

splendid bay of Navarino, great numbers appeared careering high overhead. When walking through the pretty town of the same name, later in the day, Alpine Swifts were observed flying very low over the streets and houses, though the weather was delightfully warm and fine. On my visiting the island of Sphaacteria, the western boundary of the bay, on the 29th, these birds were very abundant. The attraction here was a range of noble precipitous cliffs rising directly above the sea, at the western side of the island. These Swifts inhabited the cliffs, which are similar to those tenanted by the common species in the north of Scotland.

“Although the day was as fine and as warm as our northern summers ever are, these birds, as I walked along the top of the cliffs, swept about low and in numbers, occasionally within a few yards of my head. This remark is made from the circumstance of the common Swift being generally high in the air in fine weather; we do, however, occasionally observe it sweeping near the earth at such times. Though larger, they in general appearance and flight strongly resemble the common Swift: they are very noisy, almost constantly uttering a loud twitter, beside which, they occasionally give a brief scream, no-wise resembling the long-drawn and shrill cry of the common species. Towards the end of May, I saw a few Alpine Swifts at Constantinople, wheeling about the heights of Pera, and near the high tower of Galata, in which they probably build. In the month of June, I met with this species at the island of Paros, and about the Acropolis of Athens.

“Throughout this town, the common Swift was more frequently seen than the *Cypselus alpinus*, and at one locality only did they both appear—this was at Constantinople, where the former species was abundant, and a few of the latter were observed. This seemed rather remarkable, as in no scene did I meet with the one species, in which the other would not have appeared equally at home. The only difference in their habits which struck me, was, that the Alpine Swift is apparently more partial to cliffs than buildings, the common Swift more partial to artificial structures than to rocks.”



WHITE-BELLIED SWIFT—*Cypselus melba*, and SWIFT—*Cypselus apus*.

THE WHITE-COLLARED SWIFT (*Cypselus cayenensis*), to which bird a passing reference has already been made, is a native of the Brazils, and is easily to be distinguished by the peculiarity of coloring from which it derives its name. The general tint of the plumage is the deepest violet-blue, so deep, indeed, that except in certain lights it appears to be velvet-black. Round the neck runs a band or collar of the purest white, the two contrasting tints having a remarkably fine effect.

The nest of this species is very singular in its form, being a short, truncated cone, the

bottom being about five inches in diameter, and the middle about three inches. The material of which it is built is dog's-bane, and the young are defended from the air by a quantity of the soft, woolly down that grows on that plant, and it is pressed into the cavity so as to form a sort of plug. The nest is usually made within houses, after the common fashion of many swallows.

DEVOID of all pretensions to the brilliantly-tinted plumage which decorates so many of its relations, and clad only in sober black and gray, the SWIFT is, nevertheless, one of the most pleasing and interesting birds; resting its claims to favorable notice upon its graceful form, and its unrivalled powers of wing.

There are very few birds which are so essentially inhabitants of air as the common Swift, which cuts the atmosphere with its sabre-like wings with such marvellous ease and rapidity, that at times its form is hardly discernible as it shoots along, and it leaves the impression of a dark black streak upon the eyes of the observer. The plumage of this bird is constructed especially with a view to securing great spread, as may be seen by an inspection of the closely set and firmly webbed feathers with which the entire body and limbs are clad. The muscles which move the wings are enormously developed, and in consequence the breast-bone is furnished with a remarkably strong and deep "keel."

The flight of the Swift is quite peculiar to the bird, and cannot be mistaken even for that of the swallow by any one who has a practical acquaintance with the habits of the two species. The Swift does not flap its wings so often as the swallow, and has a curious mode of shooting through the air as if hurled from some invisible bow, and guiding itself in its headlong course by means of its wings and tail. While flying, the Swift makes very great use of its tail, a habit which has been admirably described by Mr. Thompson:—

"It was highly interesting to watch their motions as they flew noiselessly a few yards above my head. The tail would at one moment be drawn to a point, the root appear square at the end; would then present a 'tender fork,' and the root its full formation; again, it would be expanded to the uttermost, with the feathers simply touching at their margins, and the whole tail appearing so membraneous, that the light shone through it; lastly, it would be thrown into the form of an arch, which had a singular effect, and generally, when thus exhibited, the whole body was like a well-strung bow, an appearance which was several times observed with very high interest. Within a few seconds of time all these appearances were assumed by the same bird."

After making some further remarks on the subject, the same writer proceeds to observe that a similar habit is also found in the common swallow, as seen by himself when looking down upon the birds from the summit of a hill. "The swallows, as they gently floated on the bosom of the air a few yards beneath, exhibited the tail expanded to such a degree, that the beautiful white portion towards its base was quite conspicuous; presenting in this respect so great a difference from its ordinary appearance, that I did not feel certain at the moment of their being our own common bird."

There are few hours of the day when this ever active bird may not be seen on the wing, employed either in sport with its companions, or in pursuit of the insects on which it feeds, and of which it carries such numbers to its young. Several authors have said that the Swift prefers the morning and evening for its aerial evolutions, remaining quietly in the dusky recesses where it has built its nest during the fierce heat of the summer's noon. The bird is also reported to retire to the same retreat while rain falls and wind blows, and to rest at home until the weather changes for the better. As far as my own personal observations go, both these assertions are too sweeping, if not entirely erroneous. The Swift has a special love for the bright heat of a July noon, but it must be sought, not near its usual haunts, but far up in the sky, where it may be seen like a little black mote against the blue heavens, and hardly visible except to experienced observers.

As to the alleged habit of keeping under cover during a storm, it has been decidedly contradicted by Mr. Thompson, who has observed the Swifts engaged in the pursuit of their prey during stormy as well as in fine weather. I am able to contradict this assertion from the

events of a July day. The whole of the day had been most stormy, the rain falling heavily and without cessation, and the wind howling furiously in intermittent gusts. While standing at the window, and watching the black clouds come sweeping over the sky, I saw numbers of Swifts dashing through the air at a very low elevation, seldom rising above the roofs of the adjoining houses, and especially affecting some small gardens and the fruit trees therein planted. The same fact was observable on the two preceding days, but as an occasional respite from the rain was enjoyed on those days, the presence of Swifts was not so remarkable.

This indefatigable bird is an early riser, and very late in returning to rest, later indeed than any of the diurnal birds. Though engaged in flight during the live-long day, the Swift appears to be proof against fatigue, and will, during the long summer days, remain upon the wing until after nine in the evening. As the days become shorter, the Swift is found to retire earlier, but during its stay in the north, it is almost invariably later than other birds, sometimes being on the wing together with the owl. Indeed, the air seems to the Swift even a more familiar element than the earth, and the bird is able to pass the whole of its life, and to perform all the bodily functions except those of sleep and repose, while upborne on the untiring pinions with which it is furnished. The Swift that has a nest to take care of is forced to descend at intervals for the purpose of supplying its family with food, but except when urged by such considerations, it is able to remain in the air for many successive hours without needing to rest.

The Swifts may generally be found near buildings, rocks, and cliffs, for in such localities they build their nests, and from their homes they seldom wander to any great distance, as long as they remain in the country. These birds appear to be singularly susceptible to home influence, and will return year after year to the same nest, attracted by some subtle but most powerful influence, which guides them across sea and land to the spot in which they had first settled themselves, and cherished their young families. One of these birds was marked in order to ascertain its powers of returning to the same spot, and was observed to make its appearance regularly for seven successive years.

In general, the Swift loves to build its nest in a hole under a roof, whether slated, tiled, or thatched, preferring, however, the warm, thick straw-thatch to the tile or slate. Sometimes it makes a hole in the thatch, through which it gains access to the nest, but in most instances it makes use of some already existing crevice for that purpose. In all cases, the nest is placed above the entrance, and generally may be found about eighteen inches or two feet from the orifice. Even by the touch, the eggs of the Swift may be discerned from those of any other bird, as their length is singularly disproportionate to their width.

The activity with which the Swifts enter their holes is really remarkable, and is well worthy of observation. The bird stoops suddenly from its aerial flight, and with a loud scream shoots under the eaves of the house in which it has fixed its residence. Turning quickly aside, it glides towards the orifice of the tunnel, and settling for a moment with closed wings, runs nimbly into the hole, like a rat or mouse.

When the Swifts have become accustomed to human beings, they become wonderfully indifferent to their presence, and will permit their movements to be watched without displaying any signs of fear. I well remember a certain street which was copiously favored by the Swifts, who congregated in such great numbers, that they became a positive nuisance on account of the continual screaming which they kept up. The houses were mostly of a very ancient fashion, and their eaves were so low, that a man could introduce his hand into the Swifts' tunnels merely by standing on a chair. Yet the birds cared nothing for their apparent danger, even though their nests were several times robbed of their contents. At one time, the small boys, who abounded in the neighborhood, took a fancy to manufacture bows and arrows, with which they kept up a persevering fire upon the Swifts as they went to and fro upon their avocations, or visited and returned from their nests. The birds, however, looked upon these weapons with supreme contempt, and never troubled themselves in the least about them.

The sound which these birds utter is of the most piercing description, and can be heard at a very great distance, thus betraying them when they are hawking after the high-flying insects

at such an altitude that their forms are hardly perceptible to the unassisted eye. Whether the Swift uttered this cry as a call or serenade to his mate, was once a mooted point, but is now clearly settled. The bird certainly uses its cry when it is far away from its mate, but it also employs its voice in giving encouragement to its mate as she sits upon her eggs in the dark recesses of her home. Darting closely by the orifice of the hole, the Swift gives forth a loud and piercing scream, as a signal of his presence, and is answered by a soft chattering twitter from the female bird, in acknowledgment of his courtesy. While thus employed, the agility with which it sweeps along by the loved spot is truly marvellous, and the manner in which it shoots round any projecting angle is almost incredible to one who has not observed this bird while performing this feat.

The nest is a very firmly made but yet rude and inartificial structure. The materials of which it is made are generally straw, hay, and feathers, pieces of rag, or any soft and warm substance which the bird may find in its rambles, and when woven into a kind of nest, are firmly cemented together with a kind of glutinous substance secreted by certain glands. In Norway and Sweden the Swift builds in hollow trees. The eggs are from two to five in number, not often, however, exceeding three, and in color they are pure white. The shell is very fragile, and the inexperienced collector will often break the shell in attempting to remove the contents.

The young of the Swift are rather later in appearing than most young birds, seldom being hatched until the end of June, and often delaying their advent until the beginning of July. While in their juvenile plumage, they may be distinguished from the older birds by their white chins and the yellowish white spots which appear on various parts of the body. Owing in all probability to the lateness of the hatching time, there is only one brood in the year.

To northern countries the Swift pays but a very short visit, as the bird evidently requires a very high temperature, and is forced to depart as soon as the weather becomes chilly. Africa seems to be the true home of this species, and in various parts of that continent the Swifts may be found throughout three-fourths of the year, forming a curious link between countries so far removed from each other. Generally the Swifts leave the north by the end of August, but there are often instances where a solitary bird has delayed its voyage for some good reason. Sometimes the migrating instinct has conquered the parental feelings, and the old birds have taken flight in company with their neighbors, leaving their unfortunate young to perish miserably in their nests.

It appears that the cause of a brood being delayed until so late in season, may be found in the fact, that an accident had occurred to the former brood, and that the reproductive instinct of the birds forced them to fulfil their destiny, and to rear a pair of living young, in spite of the bitterness of the season. Such, at all events, was the case with the birds whose strange behavior was so well recorded by Gilbert White. Even in this instance the male bird yielded to the migrating impulse, and flew away with or after his companions, leaving his mate to the hard task of bringing up her young without his aid :—

“Our Swifts in general withdrew this year about the first day of August, all save one pair, which in two or three days was reduced to a single bird. The perseverance of this individual made me suspect that the strongest of motives, that of an attachment to her young, could alone occasion so late a stay. I watched, therefore, until the twenty-fourth of August, and then discovered that under the eaves of the church, she attended upon two young, which were fledged, and now put out their white chins from a crevice. These remained till the twenty-seventh, looking more alert every day, and seeming to long to be on the wing.

“After this day they were missing at once, nor could I ever observe them with their dam, coursing round the church in the act of learning to fly, as the first broods generally do. On the thirty-first I caused the eaves to be searched, but we found only two callow dead Swifts, on which a second nest had been formed.”

As a general fact, Swifts and Swallows hold little communion with each other, though they inhabit the same localities, and pursue the same description of prey. When, as is often the case, they make their residence in the same street, it has been observed that the two species occupied different sides of the street, the Swifts taking the north, and the Swallows preferring

the south. Even when upon the wing, the Swallows and Swifts seem to have nothing in common with each other, but hold aloof in little parties of the same species.

The color of the Swift is remarkably sombre, more so, indeed, than that of almost any British bird. The whole of the plumage is a dark sooty-black, devoid of the rich green and purple gloss which is seen upon the rook and other dark-feathered birds, and only relieved from its dull monotony by a gray patch below the chin. The beak is black in color, and very small, but the gape of the mouth is remarkably wide. The legs, toes, and claws are of the same dull black as the beak, and the eyes are brown. The entire length of a full-grown Swift is about seven inches, the end of the wing reaching more than an inch beyond the tip of the tail. The second primary is the longest feather in the wing.

THE Swifts are embraced under the family *Cypselidæ*. They were formerly classed with the swallows, but are found to have nearer affinities with the goat-suckers.

THE CHIMNEY SWIFT (*Cypselus pelagica*) is a familiar form in the north, where it is called the Chimney Swallow. Its short tail and rounded wings give it the appearance of a bat in flying. Three other species are known to North America—in the western and southern portions.

### THE TRUE SWALLOWS.

AMONG the many "travellers' tales" which called forth such repudiation and ridicule from the skeptical readers of the earlier voyagers, the accounts of the Chinese cuisine were held to be amongst the most extravagant.

That civilized beings should condescend to eat dogs and rats specially fattened for the table, was an idea from which their own better sense revolted; that the same nation should reckon sharks' fins and sea-slugs among their delicacies, was clearly an invention of the writer; but that the Chinese should make soup out of birds' nests, was an absurdity so self-evident, that it destroyed all possibility of faith in the writers' previous assertions. Very witty remarks were made on the subject, and many jokes made on the manner of cooking a bird's nest, so as to convert it into soup, the humorist having no conception of the possibility that a bird's nest could be made of anything but sticks, moss, feathers, and mud. Yet it is now a well-known fact, that certain birds have the faculty of producing or discovering a curious substance with which they make these very singular nests, and which is perfectly capable of being cooked and eaten.

The birds that make these remarkable nests belong to several species, four of which have been acknowledged. There are the ESCULENT SWALLOW, the Linchi (*Collocalia fuciphaga*), the White-backed Swallow (*Collocalia troglodytes*), and the Gray-backed Swallow (*Collocalia francica*).

These nests could hardly be recognized as specimens of bird architecture by any one who had not previously seen them, as they look much more like a set of sponges, corals, or fungi, than nests of birds. They are most irregular in shape, are adherent to each other, and are so rudely made, that the hollow in which the eggs and young are intended to live, is barely perceptible. They are always placed against the face of a perpendicular rock, generally upon the side of one of the tremendous caverns in Java and other places where these strange birds love to dwell. The men who procure the nests are lowered by ropes from above, and their occupation is always considered as perilous in the extreme.

While adherent to the rocks, or when gathered into baskets, the nests are not at all attractive in their aspect, and it is not until they have been carefully washed and cleansed, that they begin to show their semi-fibrous structure, shining through its partially transparent substance. The nests are of very different value, those which have been used in rearing a brood of young being comparatively low in price, while those which are quite new and nearly white, are held in such esteem, that they are worth their weight in silver. When placed in water and allowed to remain in soak, the nests, being made of a partially gelatinous substance, begin to soften

and swell, and, when thoroughly dressed, are said to bear some resemblance to rather stiff turtle fat. To European palates, however, they appear very insipid, and not worthy of the great value which is set upon them by the Chinese.

It is rather remarkable, that the Esculent Swallows have a habit of building their curious nests in horizontal layers.

The substance of which these nests are composed is evidently of an animal nature to some extent, although certain vegetable matters, such as the gelatinous fuci or sea-weeds may be admixed with it. Whatever may be the basis of the nutriment that forms these nests, it



ESCULENT SWALLOWS.—*Collocalia nidifica*.

is clear that a very large portion of it is furnished by certain glands, which pour out a viscid secretion.

The trade in these strange articles of diet is a very large one, and still holds its ground, the annual weight of nests that is obtained from the various caves in which the Esculent Swallows take up their residence being upwards of fifty thousand pounds, and the value of the goods more than a million dollars. In the Philippine Islands the bird is called the Salangana. The tribe of the genus *Collocalia* approach very nearly to the true Swallows in their structures, but have many points which are identical with the Swifts. The second primary feather is the largest, the first three toes point forward, and the fourth toe backward, and the tail is moderate in length.

The nests are harried about three times in every year, and it is said that the natives who are employed in procuring them are careful to destroy the old and deep-colored nests, in order to force the birds to build new habitations, which command a high price in the market. The





**Testimonials to the "Tafeln" of Brehm's Thierleben.**

The late CHARLES DARWIN writes:—"The illustrations are the best I ever saw in any work. I find it superfluous to enter here into particulars, as I already, in the 'Descent of Man,' have willingly and openly confessed how much I have profited by Mr. Brehm's book, and how highly I esteem it."

Sir JOHN LUBBOCK, Bart., D.C.L.:—"You have, I think, done good service in publishing them. They are certainly very admirable."

W. B. CARPENTER, M.D., LL.D., writes:—"I can quite endorse the favorable opinions already given by distinguished zoologists as to the high character of the illustrations generally."

WE have concluded to submit for public patronage a work with the above title, being a series of exquisite Engravings representing the ANIMAL WORLD, executed with great scientific accuracy, and accompanied by full Descriptive Text, written in popular terms, so as to delight and instruct the people. Anyone who has considered the subject must be at a loss to understand why an ILLUSTRATED NATURAL HISTORY, comprehensive and at the same time popular, has not before this been published in this country. Indeed any lover of animals who has visited the great museums and zoological gardens and has had access to books of engravings in the public libraries, could not fail to remark the wealth of material in existence devoted to this subject. Being confirmed in our conviction of the desirability of such a work, we laid under contribution the best existing authorities for the production of most perfect representations of all the more important living creatures, and among the artists whose delineations will delight the reader, we may mention Harrison Weir, Wolf, Coleman, Fr. Specht, and Mutzel. By far the majority of the engravings in these volumes are from drawings made from the *living* animals, many at the Zoological Society's Gardens in London, England.

We purpose that our patrons shall be aided and interested in their study by such an array of pictures as has never before embellished any Natural History. In numerous instances the engraving is printed in oil-colors, and this portion of the illustrations has been taken charge of by Messrs. L. Prang & Co., of Boston, who we believe rank foremost for high artistic results in this department of printing. These Oleographs were copied under the superintendence of Mr. Prang from the renowned "Tafeln" of "Brehm's Thierleben," so that they may be declared perfectly reliable.

We sought competent advice from various sources as to the most suitable text that should accompany this panorama of handsome Engravings. It was found impossible to embody all the present ideas of naturalists in a single work like this on account of the rapid advances and constant changes in their knowledge of, and habits of thought respecting, the Animal World. And it seemed to us correct that the true object of Zoology is not to arrange, to number, and to ticket animals in a formal inventory, but to inquire into their life-nature, and not simply to investigate the lifeless organism.

What do we know of "Man" from the dissecting-room? Is it not Man, the warrior, the statesman, the poet, etc., that we are interested in? With all veneration which attaches itself to those who are the accredited possessors of abstruse learning, their inordinate use of phraseology detracts too much, we fear, from the fascination that the study of the Animal World would otherwise yield, and as we are not content to have our work restricted to a favored few, we thought the task placed in our hands to be to keep the work free from a repellant vocabulary of conventional technicalities. Our endeavor has been to find an author whose work would be noted for its fund of anecdote and vitality rather than for merely anatomical and scientific presentation, and we arrived at the conclusion that we could not do better than avail ourselves of the Rev. J. G. Wood's comprehensive work—a work most popularly approved by speakers of the English language. It would be superfluous to say one word concerning the standard character of his book, from the pages of which old and young at the other side of the Atlantic have obtained so much instruction and rational amusement. Avoiding the lengthened dissertations and minute classifications of specialists, he presents to his readers in popular terms a complete treatise on the Animal Kingdom of all climes and countries. The one objection that could be urged against it was, that animal life in America might be treated more fully, and American forms given more consideration. In order to obviate this drawback and to do full justice to the creatures of our own country, we secured the aid of Dr. J. B. HOLDER, of the American Museum of Natural History in New York, an undoubted American authority, who has adapted Wood's work to American wants and given prominence to American forms of Animal life.

The splendid work on Rodentia, by Allen, Coues, and others, will be fully consulted. The valuable work on North American Birds, by Baird, Brewer, and Ridgway, will be the guide in the treatment of birds. The late arrangement of the classification and nomenclature of North American Birds, by Mr. Ridgway, and the Committee on that subject of the Ornithologists' Union, will be utilized in full. The arrangement of Mammals will be after the latest classification by Professor Flower, of the Zoological Society of London. So that this will be the first popular Natural History worthy of the name that has made its appearance here, which gives due and full recognition to the animate world surrounding us.

**Terms of Publication.**

The extent of the work will be 68 parts of 28 pages, at the price of 25 cents each. The entire publication will contain 34 Oleographs and 68 Full Page Engravings on Wood, besides many hundreds of exquisite Illustrations interspersed through the text. The parts will be issued every two weeks, and are payable only as delivered. No subscriber's name will be received for less than the entire work, and anyone removing, or not regularly supplied, will please address the Publisher by mail.

N. E.

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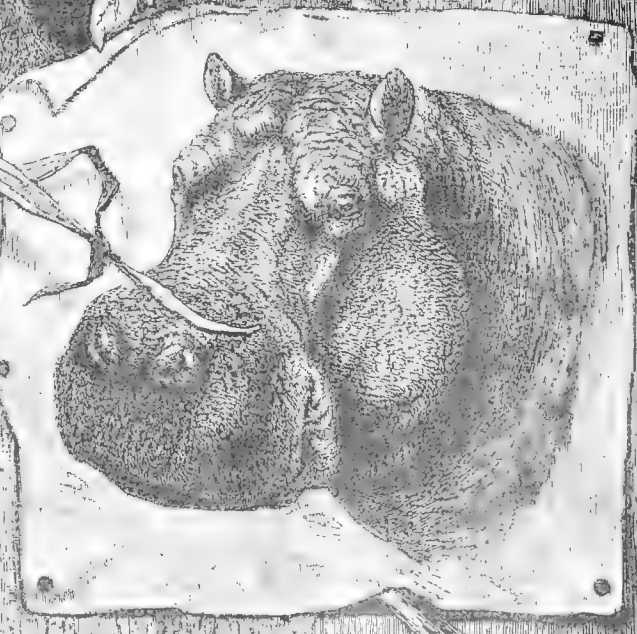
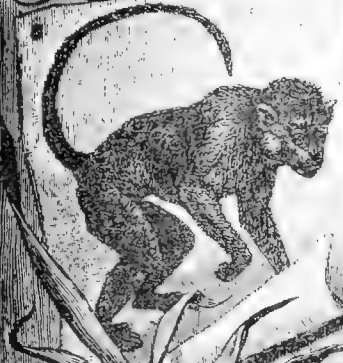
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# Animate Creation

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construction of a single nest is a work of considerable time, occupying nearly two months, and the structure of these wonderful habitations seems to show that the bird forms them by procuring out of its mouth a viscid secretion, and which hardens into adhesive threads as it comes in contact with the air. A close examination of the nest shows that it is composed of a great many layers of irregular net-work, the meshes of which connect them in every direction. Whatever it may be, it certainly possesses great strengthening and restorative powers when cooked, and is said to be an excellent specific in cases of indigestion.

The Esculent Swallow is a small bird, and its color is brown on the upper parts of the body, and white beneath. The extremity of the tail is grayish-white. The British Museum possesses specimens of all the Swallows which are known to make these curious edible nests, and have for that reason been somewhat wrongly termed edible Swallows. In point of fact, a Swallow is not at all an edible bird, possessing a most nauseatingly sweet flavor, as I can testify from personal experience.

THE elegant little WHITE-BREADED SWALLOW is the Australian representative of the genus *Atticora*.

It is a very small bird, the total length being only about three inches and a half. The color is chiefly of two sorts, white and black-brown of different depths, according to the individual, and the position of the feathers. The crown of the head is light brown, dotted with darker spots, and succeeded by a white ring. A black band passes from the corner of the mouth round the back of the head, embracing the eyes in its course. The chin, throat, and chest are pure white, and the remainder of the plumage is deep black-brown, the line of demarcation between the two tints being very strongly drawn.

All that is known of the habits of this pretty little bird is contained in the notes of Mr. Gilbert, quoted in Gould's "Birds of Australia":

"I only observed this bird in the interior, and, as far as I can learn, it has not been seen to the westward of York; I am told it is merely a summer visitor. It is a very wandering species, never very numerous, and is generally seen in small flocks of from ten to twenty in number, flying about, sometimes in company with the other Swallows for about ten minutes, and then flying right away. I noticed this singular habit every time I had an opportunity of observing the species. It usually flies high, a circumstance which renders it difficult to procure specimens. Its flight more nearly resembles that of the Swift than the Swallow; its cry also at times very much resembles that of the former. Its food principally consists of minute black flies.

"This bird chooses for its nest the deserted hole of either the Dalgyte (*Perameles lagotis*), or the Boodee (a species of *Bettongia*), in the sides of which it burrows for about seven or nine inches in an horizontal direction, making no nest, but merely laying its eggs on the bare sand.

"The White-breasted Swallow is termed by the colonists the Black-and-white Swallow, in allusion to the bold contrasts of the colors with which its plumage is decorated, and the natives know it under the title of Boo-de-boo-de."

THE elegantly shaped and beautifully colored SWALLOW, which is illustrated together with the House Martin, may be readily distinguished from any of its relations by the very great elongation of the feathers which edge its tail, and which form nearly two-thirds of the bird's entire length.

It is the most familiar of all the Hirundinidæ, and from its great familiarity with man, and the trustfulness with which it fixes its domicile under the shelter of human habitations, is generally held as an almost sacred bird, in common with the robin and the wren. In eastern countries of Europe, the protection of man is extended towards this beautiful little bird even more extensively than in England, where too often it is killed or wounded by the unfeeling possessor or hirer of a gun merely by way of practice in "shooting flying."

Independently of any question of humanity or the barbarity of a disposition which can find amusement in the death and cruel maiming of beings full of life and enjoyment, it is a matter of very bad policy to shoot a Swallow. There are some birds which afford some excuse to their destroyers by reason of their fondness for grain and fruit, but the Swallow

is exclusively an insect-eating bird, and plays a most important part in preserving the balance between the various departments of the animal kingdom. There are many noxious insects which are most valuable in themselves, and which, until the conditions which cause their existence be removed or altered, are actual visible providences towards mankind. But these very creatures are necessarily so extremely prolific, that their increase outgrows their task, and they would themselves become nuisances, did not the Swallow and other similar birds keep down their numbers by day, and the goat-suckers and bats by night.

To ascertain the truth of this observation, nothing more is necessary than to open the mouth of a Swallow that has been shot while flying, and to turn out the mass of small flies which will be found collected there, and which the bird was intending to take home to its hungry little family. The extraordinary amount of flies and other insects which a Swallow can thus pack into its mouth is almost incredible, for when relieved by the constant pressure to which it is subjected, the black heap begins to swell and enlarge, until it attains nearly double its former size.

The Swallow wages a never-ceasing war against many species of insects, and seems to be as capricious in its feeding as are the roach and other river fish. At one time it will feed almost exclusively upon gnats and other small flies, and will destroy many thousands of these obnoxious flies in a single day. At another time it will prefer beetles, chasing the *Geotrupidæ* rather than those of any other order. On another occasion it will confine itself to May-flies, catching them as they emerge from their pupal envelopes and flutter soft, fat, and languid on the river bank. Sometimes the Swallow flies at larger prey, and frequenting the neighborhood of bee-hives, swoops with unerring aim upon their inmates as they enter or leave their straw-built houses. It is a very remarkable fact, that the working bee is generally unharmed by the Swallow, which directs its attack chiefly upon the comparatively useless drone. Perhaps the bird may possess an instinctive knowledge of the poisoned weapon with which the worker is armed, and may therefore prefer to attack the large but stingless drone.

Owing, in all probability, to this insect diet, the flesh of the Swallow is quite unfit for the table, and possesses a very disagreeable flavor. Out of curiosity I once cooked and tried to eat some Swallows that had been shot, and was effectually deterred from the attempt by the peculiar and nauseous character of the flesh, which has some resemblance to a sweet potato in its flavor. Like the generality of predaceous birds, the Swallow ejects the legs, wings and other indigestible portions of its insect prey in little pellets, or "castings."

The flight of this bird is very rapid and graceful, and is readily distinguished from that of the Swift by certain peculiarities which are not easy to be described, but can be recognized without difficulty. Unlike the Swift, which never settles except on some elevated spot, the Swallow is fond of resting a while on the ground, and may often be seen dusting itself after the fashion of the common sparrow. I have often seen it settle on the patches of sand that are left among the rocks at low water, and from the busy activity which it displayed on such occasions imagine it to have been engaged in chasing the sand-flies, or perhaps even the sand-hoppers that swarm so abundantly in such localities.

When taken young, the Swallow is easily tamed, and after having passed the season of emigration, becomes reconciled to its enforced home and is a very docile and lovable little pet. The poor bird must suffer greatly during this period when its brothers are voyaging to warmer climates, for the organization of all birds is sensitive to a high degree, and especially so in the case of birds of passage. The extreme delicacy of the bird's nature was well shown in the time of cholera. In the town of Verviers, while that fell disease was carrying away twenty inhabitants per diem out of a population of two thousand, the Swallows and all the singing-birds left the spot, and did not return until the cholera had passed away.

The voice of the Swallow is vastly more agreeable than the shrill scream of the Swift, and is, although weak and twittering, very musical in its tone and pleasing to the ear.

The nest of the Swallow is always placed in some locality where it is effectually sheltered from wind and rain. Generally it is constructed under the eaves of houses, but as it is frequently built within disused chimneys, it has given to the species the popular title of Chimney Swallow. The bird is probably attracted to the chimney by the warmth of the fire inside.

The nest is composed externally of mud or clay, which is brought by the bird in small lumps and stuck in irregular rows so as to build up the sides of its little edifice. There is an attempt at smoothing the surface of the nest, but each lump of clay is easily distinguishable upon the spot where it has been stuck. While engaged at the commencement of its labors, the Swallow clings perpendicularly to the wall of the house or chimney, clinging with its sharp little claws to any small projection, and sticking itself by the pressure of its tail against the wall. The interior of the nest is lined with grasses and other soft substances, and after it has been inhabited by a young brood, becomes very offensive to the nostrils and unpleasant to the touch, in consequence of the large parasitic ticks which are peculiar to the birds of this tribe, and which swarm in the nest.

Sometimes the Swallow is seized with a fit of eccentricity, and builds its nest in very odd localities. One of these birds actually made its home in the outspread wings of an owl which had been nailed against a barn door, and it is not at all unusual to see the nests of the Swallow built in the shaft of an old mine or wall. Various other localities are recorded by zoological observers, such as a half-open drawer, an old cap hung upon a peg, and in one curious instance, which is mentioned and figured by Mr. Yarrell, upon the forked branch of a sycamore tree which hung over a pond. A brood of young was hatched in this nest, and a second batch of eggs was laid, but came to nothing.

There are sometimes two broods in the year, and when the second brood has been hatched at a very late period of the year, the young are frequently deserted and left to starve by their parents, who are unable to resist the innate impulse that urges them to seek a warmer climate. It has occasionally, but very rarely, happened that the parents have remained for some time, in order to bring up their young brood. When fully fledged, and before they are forced to migrate, the young birds generally roost for the night in oisiers and other water-loving trees.

THE two Swallows which next come before our notice are natives of America, and are high in favor among the lower inhabitants of the land, one species taking up its abode with civilized men, and the other preferring, at all events at present, the habitations of the indigenious savage tribes.

THE RUFIOUS-BELLIED SWALLOW is plentifully found in the United States, and is fond of building its nest in out-houses and barns, and is frequently furnished by the kindness of the proprietor with convenient boxes fastened to poles or nailed on trees. It is never known to build in chimneys, like our own Chimney Swallow.

The nest of this bird is rather peculiar in form, being, according to Wilson, "in the form of an inverted cone, with a perpendicular section cut off on that side by which it adheres to the rafters. At the top it has an extension of the nest, or an off-set, for the male or female to sit on occasionally; the upper direction is about six inches by five, the height externally seven inches. This shell is formed with mud mixed with fine hay, as plasterers do mortar with hair to make it adhere the better; the mud seems to be placed in regular layers from side to side; the shell is about an inch in thickness, and the hollow of the cone is filled in with fine hay well stuffed in, and above that is laid a handful of downy feathers." The nest of the Pine-pine (*Cisticola tectrix*) is also remarkable for possessing a supplementary erection on which one of the birds sits while the other is engaged in hatching the eggs.

As the nest is rather complicated in its structure, it occupies some time in preparation, a week generally passing before it is fit to receive the eggs. When the Rufous-bellied Swallow builds in barns or out-houses, it is very gregarious in its habits, twenty or thirty nests being often placed in close proximity to each other, and generally within an inch or two; yet there is no quarrelling among the birds, and the whole society is remarkably harmonious. While the female is sitting on the eggs, the male often places himself on the mud perch, and pours forth his complacent little twitter of a song for her consolation. There are generally two broods in each season. In size the Rufous-bellied Swallow is not quite equal to the common Swallow of England, being only about seven inches in length. Its color is not unlike that of the Swallow, excepting that the under portions of the body are of a ruddy chestnut in the male, and of a rusty white in the female.

## THE MARTINS.

AMONG the most ingenious of bird architects, the FAIRY MARTIN holds a very high place in virtue of the singular nest which it constructs.

The nest of the Fairy Martin has a very close resemblance to a common oil flask, and reminds the observer of the flask-shaped nests which are constructed by the Pensile Oriole and similar birds, although made of harder material. The Fairy Martin builds its curious house of mud and clay, which it kneads thoroughly in its beak before bringing it to the spot where it will be required. Six or seven birds work amicably at each nest, one remaining in the interior enacting the part of chief architect, while others act as hodsmen, and bring material as fast as it is required. Except upon wet days, this bird only works in the evening and early morning, as the heat of mid-day seems to dry the mud so rapidly that it cannot be rightly kneaded together. The mouths, or "spouts" of these nests vary from eight to ten inches in length, and point indifferently in all directions. The diameter of the widest portion of the nest is very variable, and ranges between four and seven inches.

The exterior of the nest is as rough as that of the common swallow of England, but the interior is comparatively smooth, and is lined with feathers and fine grass. The eggs are generally four or five in number, and the bird rears two broods in the course of the year.

The Fairy Martin is very capricious in its choice of locality. Sometimes it will take a fancy to a house, and will build its nests in regular rows under the shelter of the eaves. Sometimes it prefers the perpendicular face of a rock, and in that case will build several hundreds of nests in close proximity to each other, but without the slightest attempt at regularity or order, and with the parts sticking out in all directions. Now and then, the nest of this bird is found within the hollow of some decayed tree. In every case, the nest is built in some place where water is in the near vicinity, but it is a very remarkable fact that it has never been seen within twenty miles of the sea. The Fairy Martin is spread over the whole of Southern Australia, arriving in August, and departing in September.

THE WIRE-TAILED SWALLOW is chiefly remarkable on account of the peculiarity from which it derives its name.

The external feathers of the tail are singularly elongated, and for the greater part of their length are devoid of web, resembling in some degree the filamentary appendages of the Bird of Paradise. The general color of this bird is a rich steel-blue, the head being chestnut and the under portions of the body white, with the exception of a large black patch upon the back of the thigh. The wiry portion of the tail feathers is black, and the same tint runs across the edge of the webbed portions, which in the centre are white like the abdomen.

THE handsome PURPLE SWALLOW is a native of the United States of America, where it is one of the most familiar, and at the same time one of the most generally beloved of the indigenous birds.

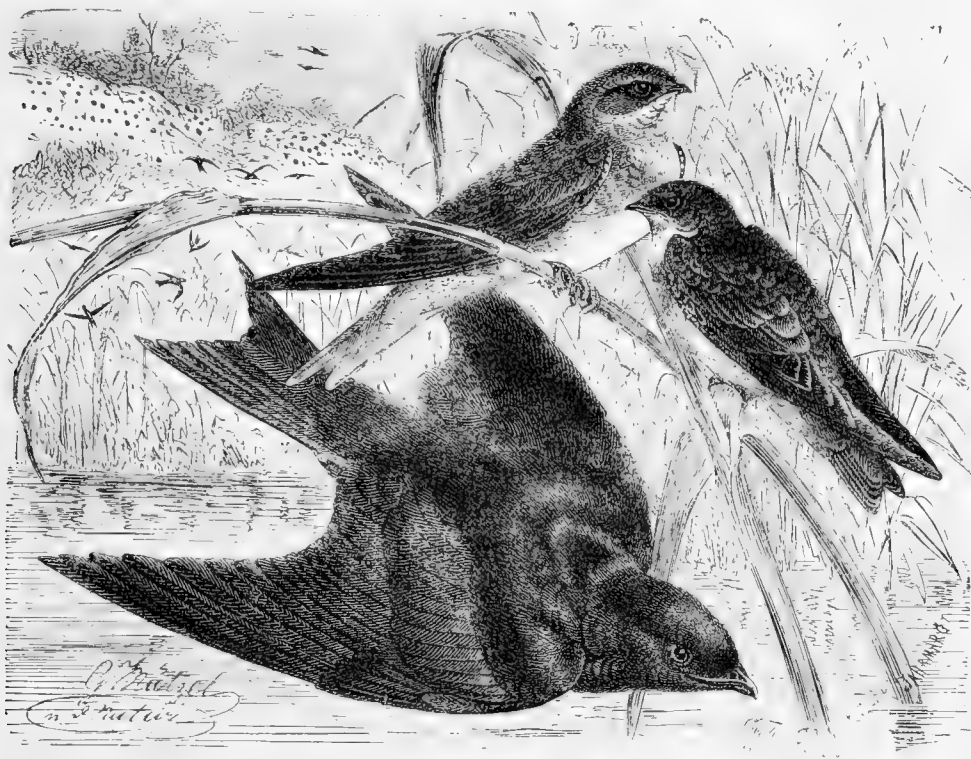
It instinctively resorts to human habitations, and even finds favor in the eyes of the American Indian, a being who is little given to mercy, and who makes the possession of a head but a theme for self-laudation. Yet even the copper-skinned native respects the Purple Martin, and takes care to prepare a convenient nesting-place for the little bird, by hanging on a neighboring tree an empty gourd in which a hole has been roughly cut. In this receptacle the Martin makes its inartificial nest, and cheers the heart of its host by its monotonous though sweet-toned song. The more civilized inhabitants of farms provide for the roosting of this bird by fastening nest-boxes against the wall, and some persons even build regular cotes, of which the sociable birds soon take possession. Sometimes the Purple Martins become rather presuming in their familiarity, and actually turn the pigeons out of their own nest-boxes when they do not find sufficient accommodation for themselves. The negro, too, takes pleasure in domesticating this most trustful of birds, and provides for its accommodation by fastening hollow calabashes to the tops of long bamboo canes, which are stuck in the ground for the purpose.



Like other swallows, the Purple Martin exhibits a great predilection for the spot where it has once built its nest, and will return year after year to the beloved locality.

As is the case with many familiar birds, such as the robin, the sparrow, and the swallow, the Purple Martin is a most fearless and withal quarrelsome bird, greatly delighting in annoying any other bird that may happen to be larger than itself, and trusting to its great command of wing for impunity. Hawks of all kinds, crows, jays, and similar birds live in constant terror of the Purple Martin, which no sooner sees the hateful form of a hawk or crow in the distance than it flies at him savagely, and makes such rapid and vicious pounces, that the wretched victim is fain to escape as he best can from the attacks of his small but determined foe. Even the eagle enjoys no immunity from the persecution of the Purple Martin, which dashes at the regal bird with as much assurance as if it were only chasing a pigeon. It is rather remarkable that although the Purple Martin will generally fly at the king-bird, it will make common cause with that bird against the eagle, and unite in a temporary alliance until the common enemy is driven off.

The Purple Swallow feeds mostly upon the larger insects, such as wasps, bees, and beetles, caring little for the gnats, flies, and other small insects which form the food of the generality



SAND MARTIN.—*Cotyle riparia*. PURPLE SWALLOW.—*Progne subis*.

of swallows. The flight of this species is wonderfully rapid and active, the little bird dashing to and fro with lightning speed, and wheeling with such remarkable suddenness that it really has nothing to fear from the larger but less active claws of the eagle or falcon.

When this bird builds in a crevice or other spot which has not been prepared by the hand of man, the nest is found to consist of a rather large mass of dried grass, leaves, moss, feathers, and other similar substances, and contains from four to six white eggs. When several birds are building in proximity to each other, they make an extraordinary noise at the break of day, which, although very useful in awaking the farmers and their men in time for their daily work, is by no means agreeable to those whose tastes do not incline them to early rising. There are generally two broods in each year, and both parents take their fair turn in sitting upon the eggs.

As might be gathered from the popular name of this bird, the color of this species is a rich, deep purple, of a very glossy kind. This purple hue is peculiar to the male, and extends

over the greater part of the body, with the exception of the wings and tail, which are of a deep blackish-brown. The female and young male birds are brown, with a strong blue tinge upon the upper parts of the body, and only a grayish-white below.

The Swallows are at present embraced under the family *Hirundinidæ*. Seven species are known in North America.

THE PURPLE MARTIN (*Progne subis*) is the largest and finest appearing of this group. It is a general inhabitant of the United States, reaching as far north as Hudson's Bay. It has a strong liking to the vicinity of man's habitation.

THE BARN SWALLOW (*Hirundo erythrogastra*) is the most familiar form in the Northern States. Wilson says: "We welcome the first appearance of the Swallows with delight, as the faithful harbingers and companions of flowery spring and ruddy summer; and when after a long, frost-bound, and boisterous winter, we hear it announced that the Swallows have come, what a train of charming ideas are associated with the simple tidings." The Cliff and White-bellied Swallows are familiar to the country-side.

THE pretty little SAND MARTIN is, in spite of its sober plumage and diminutive form, a very interesting bird, and one which adds much to the liveliness of any spot where it may take up its abode.

In size it is less than any of the other *Hirundinidæ*, being less than five inches in total length. The color of this bird is very simple, the general tint of the entire upper surface of the head and body being a soft brown, relieved from too great uniformity by the sooty-black quill feathers of the wings and tail. The under surface is pure white, with the exception of a band of brown across the upper part of the chest. The young bird possesses a lighter plumage than the adult, owing to the yellowish-white tips of the back, tertiaries, and upper coverts. The beak is dark brown, and the eyes hazel.

RESEMBLING the common swallow in habits and general appearance, the HOUSE MARTIN may easily be distinguished from that bird by the large white patch upon the upper tail-coverts, a peculiarity which is even more notable when the bird is engaged in flight than when it is seated on the ground or clinging to its nest. In the dusk of evening the Martins may often be seen flying about at so late an hour, that their bodies are almost invisible in the dim and fading twilight, and their presence is only indicated by the white patches upon their backs, which reflect every fading ray, and bear a singular resemblance to white moths or butterflies darting through the air.

This beautiful little bird is found in all parts of Europe, and is equally familiar with the swallow and sand Martin. It places its clay-built nest principally under the shelter afforded by human habitations, and becomes so trustful and fearless that it will often fix its nest close to a window, and will rear its young without being dismayed at the near presence of human beings.

It is rather a curious fact that the Martin should be so apparently capricious in its architectural taste, as has frequently been observed. The birds will often take a great fancy to one side of a house, and will place whole rows of their nests under the eaves, totally neglecting the remaining sides of the house, even though they offer equal or superior accommodation. Generally the Martins avoid the south side, apparently from a well-grounded fear that the heat of the midday sun might crack and loosen the mud walls of their domiciles. A north-eastern aspect is in great favor with the Martins, and I lately observed a very great number of their nests affixed to the eastern walls of a row of houses, together with several isolated cottages, and, on a careful examination, could not see a single nest upon any other part of the buildings.

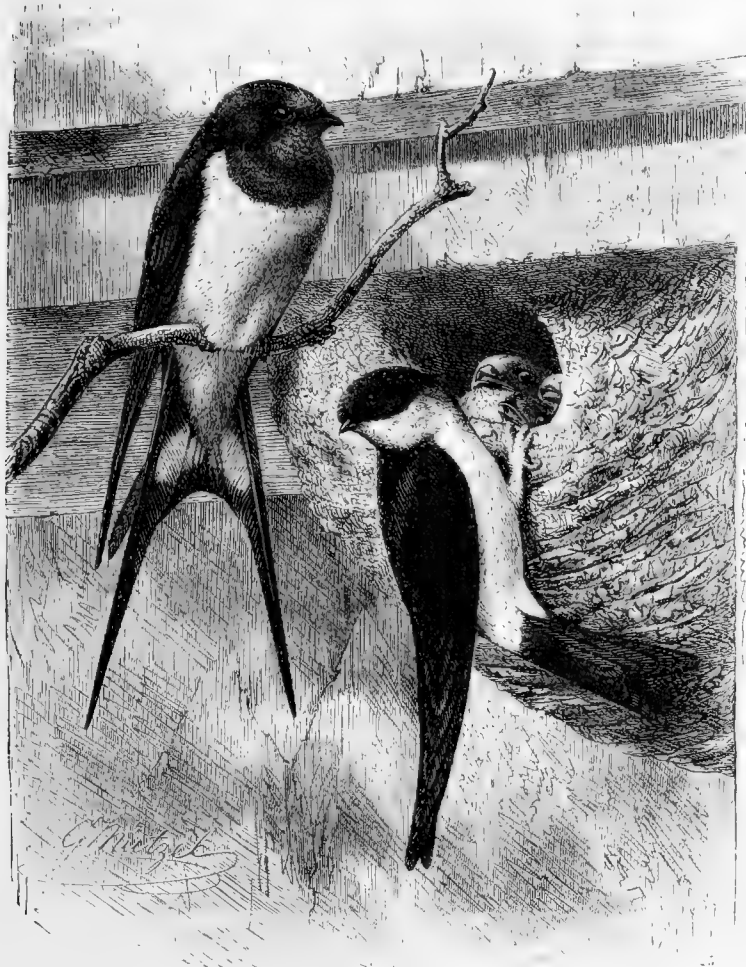
The nest of this species is extremely variable in shape and size, no two being precisely similar in both respects. Generally the edifice is cup-shaped, with the rim closely pressed against the eaves of some friendly house, and having a small semicircular aperture cut out of

the edge in order to permit the ingress and egress of the birds. Sometimes, however, the nest is supported on a kind of solid pedestal, composed also of mud, and often containing nearly as much material as would have made an ordinary nest. These pedestals are generally constructed in spots where the Martin finds that her nest does not find adequate support from the wall.

The material of which the nests are built is said to consist principally of the finely pulverized mold which is swallowed by earthworms as they feed, and is ejected at the surface of the ground in the well-known "casts" that often disfigure our lawns, and excite the wrath of the gardener. This substance is evidently well moistened and kneaded before it is applied, and it is very probable that the bird may supply some viscid secretion which renders it more tenacious. The exterior of the nest is very rough, but has a picturesque appearance by reason of that very roughness.

When once they have attached themselves to any locality, the Martins are thorough conservatives in their feelings, and set their faces against any alteration or improvement. One of my friends, on finding that these little birds were beginning to build their nests under the eaves of his house, was desirous of attracting them to his residence and affording them the best hospitality in his power. He therefore ordered a kind of verandah to be erected along the side of the house, so that the Martins might find a better shelter than was afforded by the shallow eaves. The birds, however, took a different view of the matter; deserted the nests which had already been built, and never came back again.

In all cases the House Martins exhibit a strong dislike to smooth walls. Stucco they de-

SWALLOW.—*Hirundo rustica*.HOUSE MARTIN.—*Chelidon urbica*.

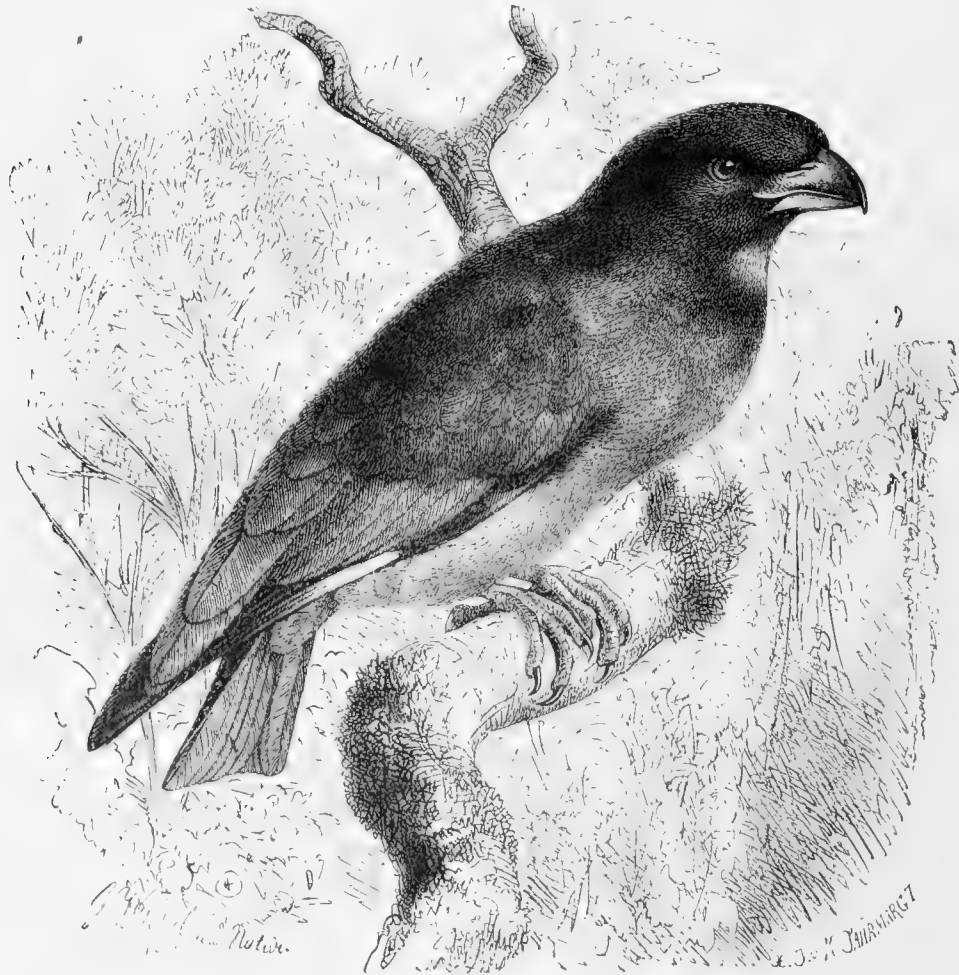
test, and only tolerate new brick when they can find no other resting-place. But their chief delight is in walls that are covered with rough cast, or that are built of roughened stone. They also take advantage of any projection, such as a spout or a piece of sculpture, and employ it as a foundation on which they may rest their domiciles.

Not only is the Martin capricious in choosing certain points of the compass, but also in fixing upon a locality wherein to build its habitation, it exhibits no small fancifulness. Generally it affects human dwellings, and rests safely under the protection of their inmates; but it will often fly far from the presence of man, and build its nest in uninhabited spots. Precipitous rocks of various kinds, whether limestone, sandstone, or chalk, are frequently studded with the nests of the Martin. The basaltic rocks of the Giant's Causeway are in great favor with this bird, which has even been known to plant its nests thickly in the arches of a bridge.

## ROLLERS.

THE ROLLERS evidently form one of the connecting links between the swallows and the bee-eaters, as may be seen by the shape of their feet, which have the two hinder toes partially joined together, while those of the bee-eaters are wholly connected, or, as it were, soldered together. The Rollers, as is evident from their long pointed wings, stiff tail, and comparatively feeble legs and feet, are to a great extent feeders on the wing, although they do not depend wholly on their powers of flight for subsistence, but take many insects, worms, and grubs from the ground.

The birds of the genus *Eurystomus*, or wide-mouthed birds, may be known by the peculiarity from which they derive their generic name. The beak is remarkably wide at its base,



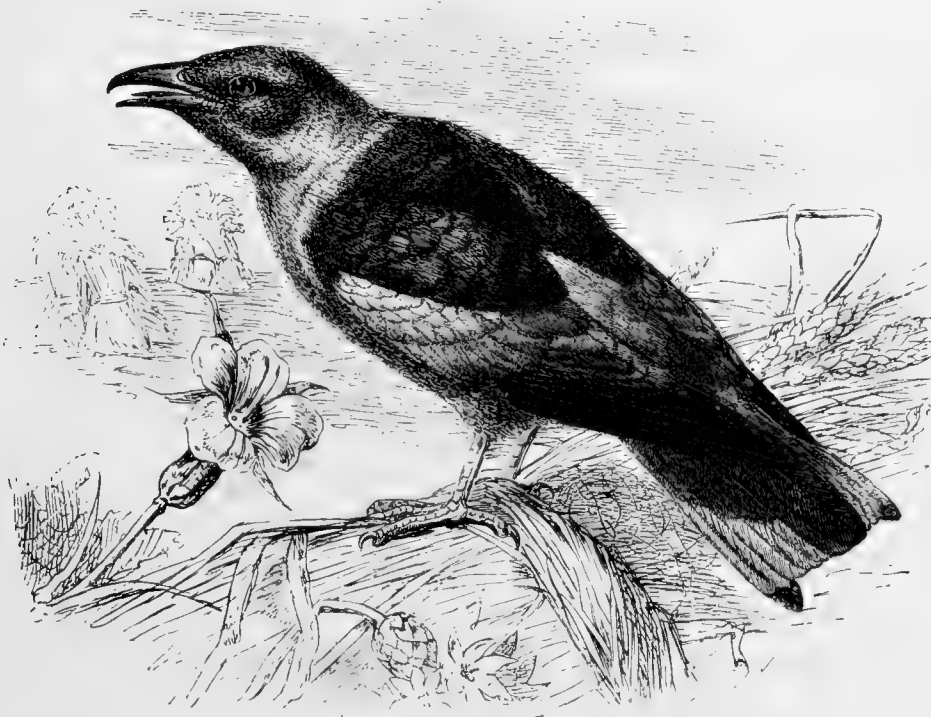
ORIENTAL ROLLER.—*Eurystomus orientalis*.

and the gape of the mouth is very large. The point of the beak is flattened, and rather abruptly curved. There are some bristle-like feathers at the angle of the mouth, and the wings are extremely long, the second primary feather being the longest. The tail is moderate in extent and not forked.

The ORIENTAL ROLLER is found spread over a large expanse of country, being a native of many parts of India, Java, and the Polynesian Islands. It is a very handsome bird, the greater part of its plumage gleaming with the most brilliant green, which has been compared, though not very happily, to the peculiar sea-green of the aquamarine. A brilliant azure colors the throat and the points of the wings, and the primary feathers of the wing are black,

diversified with a white bar. The tail is deep black. In its habits it is quick, active, and vigorous, chasing its insect prey through the air, and displaying great command of wing and powers of endurance.

ALTHOUGH tolerably common on several parts of the Continent, the GARRULOUS ROLLER is at the present time a very rare visitant to this country. There seems, however, to be reason



GARRULOUS ROLLER.—*Coracias garrula*.

to believe that in former days, when Europe was less cultivated and more covered with pathless woods, the Roller was frequently seen in the ancient forests, and that it probably built its nest in the hollows of trees, as it does in the German forests at the present day.

THERE are many examples of the group which is gathered together under the general title of Rollers, the last of which is the BRACHYPTERACIAS, a bird which is remarkable, as its name imports, for the shortness of its wings.

In color it is rather a handsome bird, although it suffers somewhat from the proximity of its more brilliant relatives. The upper parts are a warm chestnut-brown, with a green gloss upon the shoulder. The wings are brown also, glossed with sheeny green, and marked with a number of black spots edged with white. The under parts are grayish-white splashed on the throat with chestnut, and transversely barred upon the abdomen with the same tint, leaving a white band across the chest. It is a native of Madagascar.

THE curious little birds which are termed TODIES bear a considerable resemblance to the kingfisher, from which they may be easily distinguished by the flattened bill. The gape of the mouth is very wide, and a number of vibrissæ are set around its margin. The wings and tail are short and rounded, and the outer toes are connected as far as the last joint. The Todies are natives of tropical America, and are very conspicuous among the brilliant plumaged and strangely shaped birds of that part of the world.

The GREEN TODY is a very small bird, being hardly larger than the common wren, but yet very conspicuous on account of the brilliant hues with which its plumage is decorated. The

whole of the upper surface is a light green, the flanks are rose-colored, deepening into scarlet upon the throat and fading into a pale yellow upon the abdomen and under tail-coverts. The under surface of the wings is bare. These tints may be easily examined, even during the life of the bird, for the Green Tody is a sluggish creature, and so disinclined to move, that it may be approached quite closely, and watched as it sits with its head sunk beneath its shoulders, and its bill projecting, as if without life or sensation.

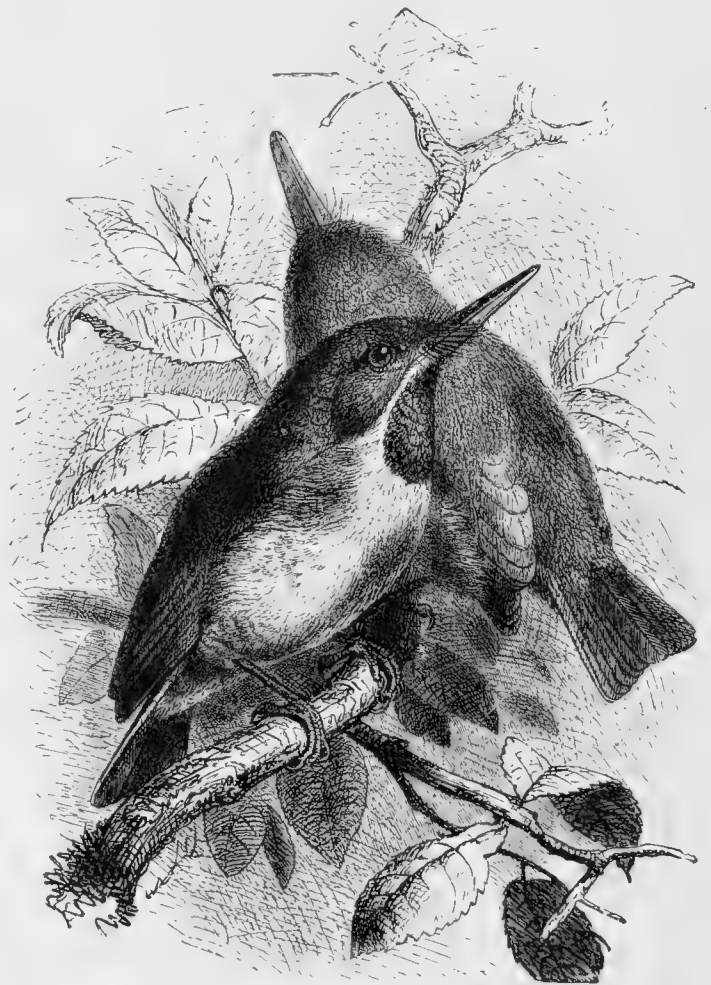
It has but little power of wing, flying always near the ground, and never venturing on a long aërial journey. From this habit of remaining near the earth, it is popularly known by the name of Ground Parrot. The food of the Green Tody is chiefly of an insect nature, and the bird is able to secure its prey as they crawl about in the muddy banks of ponds or rivers. It also searches the grass and herbage for insects, and catches them with much adroitness. The nest of this bird is placed on the ground, generally in some hole in a river's bank, but often in a depression made for the purpose, and is built of dried grasses, moss, cotton, feathers, and similar substances. The eggs are four or five in number, of a bluish gray, diversified with bright yellow spots. The length of this bird is barely four inches. There is another species of Tody (*Todus mexicanus*), inhabiting the same country.

THE JAVAN TODY is a truly remarkable bird, and is so curiously formed that its proper position in the kingdom of birds has long been uncertain.

The extraordinary beak of this bird is shorter than the head, and at its base is wider than the portion of the head to which it is attached. The centre toes are connected together as far as the second joint. This bird is a native of Java and Sumatra, and in many of its habits resembles the green Tody. It feeds mostly on aquatic insects, worms, and larvæ, which it obtains from the banks of the rivers near which it loves to dwell. It does not keep so closely to the earth as the green Tody, but builds a pendent nest, hanging to the slender bough of some tree that grows near the water. Although not a very rare bird, it is but seldom seen, owing to its habit

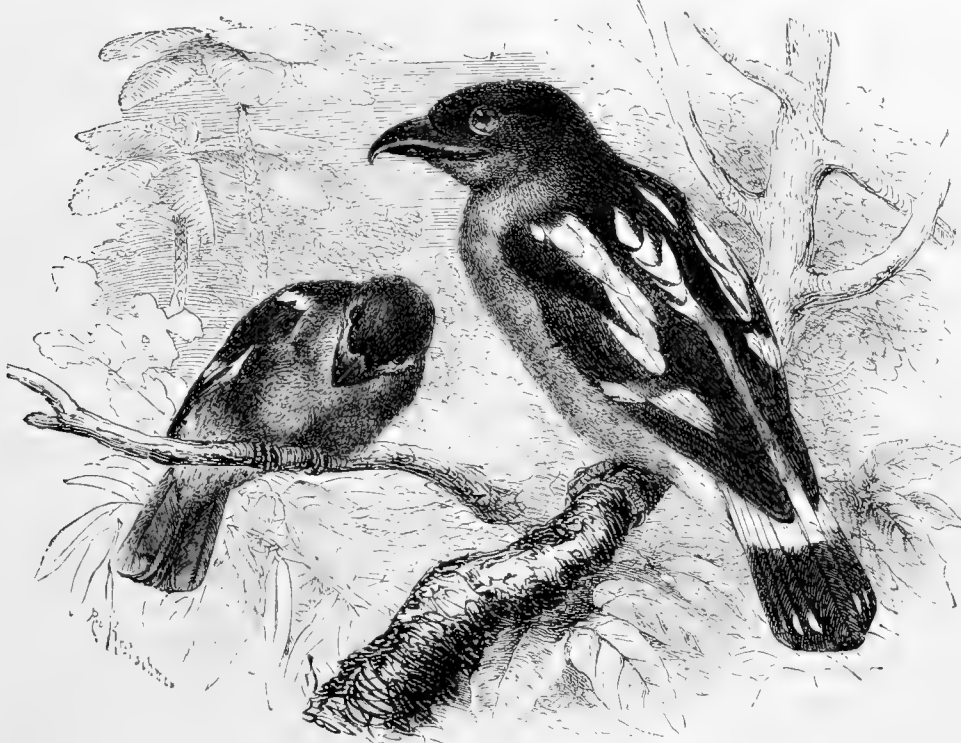
of withdrawing itself to the most inaccessible wooded lands of its native country, and there taking up its residence near the swampy grounds that are often found within the precincts of vast forests.

It is rather variable in its plumage; some specimens having a black bar across the chest. In all cases it is a striking bird, owing to the forcible contrast between the deep velvet purple of the back and the bright golden yellow with which it is relieved. Another species, belonging to the same genus, the Hooded Eurylaimus (*Eurylaimus ochromalus*), is still more beautiful, on account of the delicate rose hue with which its throat is tinted, and the bold black, white, and yellow marking of the remainder of the plumage.



GREEN TODY.—*Todus viridis*.

Although a very handsome bird, it does not equal the preceding species in the brilliancy of its plumage. The general color is a deep rich purple, diversified by yellow, black, and



JAVAN TODY.—*Eurylaimus javanicus*.

brown. The yellow is chiefly seen in the coverts and edges of the wing, and the tips of the tail-coverts. The forehead, tail-coverts, and tail-feathers are black, with the exception of a white mark upon the quill-feathers of the tail.

THE GREAT-BILLED TODY has been placed by some authors in the genus *Eurylaimus*, together with the Javan Tody, but in some catalogues it is separated into a new genus under the title of *Cymbirhynchus*, or Boat-billed, in allusion to the singular form and shape of its beak. The specific title of *Macrorhynchus* is also given in allusion to the same peculiarity, and signifies Long-billed.

It is rather a thickly made bird, possessing a stout, heavy-looking body, which harmonizes well with the great, boat-shaped beak. The curiously-shaped bill is very large, thick, and strong, very wide at its base, well arched above, and hooked at the point. Both mandibles are about the same length, and the color is blue. The bird is an inhabitant of the Indian Archipelago, and is most numerous in the interior of Sumatra, where it may be seen haunting the banks of rivers and searching for its food, which consists chiefly of insects, worms, and various aquatic creatures. Its nest is ingeniously constructed of slender twigs woven into a nearly globular form, and is fastened to the extremity of some convenient branch which overhangs the water, so that the young and eggs are safe from the attacks of the many enemies which assail them in these regions. The eggs are from two to four in number, and of a pale blue tint.

The coloring of its plumage is rather handsome, although quaint and peculiar. The general tint of the upper parts of the body is dead black, and that of the abdomen and lower parts a dark red. Around the throat runs a broad belt of stiff, wiry feathers of a red hue, which point upward on each side, and are probably intended for the purpose of defending the eyes. At each side of the bill there are several similar stiff bristly hairs, which also point

upward. The scapularies are long and sharp in form, and their color is a beautifully pure white, contrasting strongly with the deep black of the upper part of the body. At the upper angle of each wing there is a well-defined orange line, and a white spot on the inside. The wedge-shaped tail is black, the thigh is blackish-brown, and the legs are brown. The color of the eyes is blue, which changes to green soon after death, and then fades wholly into dullness.



BRAZILIAN MOTMOT.—*Momotus brazilensis*.

By the natives the bird is called Burong-palano, or Tam-palano. Several other species of *Eurylaïmus* are known to science, all of them being handsome and remarkable birds. The Great *Eurylaïmus* (*Eurylaïmus corydon*), for example, is notable for the great width of the beak, its bright rosy hue, its hooked form, and the very wide gape of the mouth. The plumage, too, is colored in a very bold and striking manner. The general hue is jet black, relieved by a large white mark on the middle of the wing, another at the extremity of the tail, and a small scarlet patch of elongated feathers in the centre of the back. As a general rule, the birds of this group adhere to the above-mentioned colors, but there is a curious and notable exception in the person of the Dalhousie's *Eurylaïmus* (*Psarisómus dalhousie*), whose plumage is tinted with blue, green, and yellow, after the manner of many paroquets. Indeed, the general aspect of the bird irresistibly reminds the observer of a paroquet, and the semblance is further increased by its long azure tail feathers.

THE MOTMOTS, so called from their monotonous cry, which is thought to resemble the syllables mot-mot continually repeated, are inhabitants of tropical America and the adjacent parts of the world. There are several species of these curious and beautiful birds; but as their habits and form are very similar, they can be sufficiently represented by a single example. The Motmots are among the number of those creatures which have perplexed the systematic naturalist, and their position in the kingdom of birds is even yet subject to doubt. On account of their large and deeply serrated mandibles, their long-bearded tongue, and the similarity of some of their habits, they have been placed close to the toucans, to which birds they bear no small resemblance. Their feet, however, are of entirely different construction; and instead of

congregating in flocks like the toucans, they lead solitary lives in the forest depths. In these birds the tail is wedge-shaped, and in several of the species the two central feathers are remarkable for a naked space before their termination.

THE BRAZILIAN MOTMOT is, like the other species of the same genus, a very solitary bird, being seldom seen except by those who care to penetrate into the deepest recesses of the



tropical forests. In its habits, it is not at all unlike the common fly-catcher of England, delighting to sit motionless upon a branch that overlooks one of the open spaces that are found in all forests, or that commands a view of a path made by man or beast. On its perch it remains as still as if carved in wood, and sits apparently without thought or sensation until a tempting insect flies within easy reach. It then launches itself upon its prey, catches the insect in its bill, and returning to its perch, settles down again into its former state of languid tranquillity. The Motmot is not formed for long or active flight, as its wings are short and rounded, and the plumage, especially about the head, very loosely set.

Some writers say that the Motmots do not confine themselves to such small prey as insects, but that they steal young birds out of their nests, and are also in the habit of eating eggs.

All the Motmots are about the size of the common magpie, and are remarkably handsome birds, their plumage being tinted with green, blue, scarlet, and other brilliant hues. The Brazilian Motmot is bright green on the upper parts of the body, excepting a spot of velvety-black upon the head, edged with green behind. The primary feathers are blue, and the under portions are green "shot" with crimson, and a black spot is found on the breast.

THE BLUE-CAPPED-MOTMOT (*Momotus cœruleiceps*). This is the only species found in North America. Its habits are much the same as those of the South American species. It inhabits Central America.

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## TROGONS.

FOR our systematic knowledge of the magnificent tribe of the TROGONS we are almost wholly indebted to Mr. Gould, who by the most persevering labor and the most careful investigations has reduced to order this most perplexing group of birds, and brought into one volume a mass of information that is rarely found in similar compass. There are few groups of birds which are more attractive to the eye than the Trogons, with all their glowing hues of carmine, orange, green, and gold; and few there are which presented greater difficulties to the ornithologist until their various characteristics were thoroughly sifted and compared together. The two sexes are so different from each other, both in the color and shape of the feathers, that they would hardly be recognizable as belonging to a single species, and even the young bird is very differently colored from his older relatives.

These beautiful birds are found in the Old and the New Worlds, those which inhabit the latter locality being easily distinguishable by their deeply barred tails. Those of the Old World are generally found in Ceylon, Sumatra, Java, and Borneo, while only a single species, the Narina Trogon, is as yet known to inhabit Africa. The Trogons are mostly insect-eaters, taking their prey easily by means of their widely-opening mouths, and making no use of their slender feet and claws in the capture of their active enemy. Although gifted with such brilliant coloring, they are but seldom seen, for they prefer the deep forest to the more open grounds, and remain seated among the dense foliage of some chosen tree as long as the sun remains above the horizon.

The Trogons are mostly silent birds, the only cry used being that of the male during the season of pairing. It is not a very agreeable sound, being of a sombre and melancholy cast, and thought to resemble the word "couroucourou," a continuation of syllables which has therefore been applied to the entire tribe. The Trogons have been separated into five genera, each of which will find an example in the following pages.

THE splendid bird which has been called MASSENA'S TROGON, in complimentary allusion to the celebrated prince of that name, is an inhabitant of Central America, specimens from

Honduras and Mexico being in the collection of the British Museum. In size it is rather large, measuring fourteen inches in total length.

In the tinting of the plumage the two sexes are very different from each other, and are colored briefly as follows. In the male, the crown of the head, the back and chest, are a deep rich green, contrasting well with the jetty, glossy black of the ear-coverts and throat; the breast and abdomen are of a rich scarlet. The ground tint of the centre of the wings is a soft gray, pencilled with exquisitely delicate lines of jetty black. The quill-feathers of the wing are jetty black, each feather being edged with pure white; and the quill-feathers of the tail are also black, with the exception of the two central feathers, which are imbued with changeable hues of dark green and purple throughout the greater part of their length, and are tipped with a black patch at the extremity. The bill is light yellow.

The female bird possesses a more sober plumage than her mate. The upper parts of the body, instead of being richly colored with deep green, are of a dark bluish-gray; and the wings, instead of being finely pencilled with black upon gray, are powdered with the same tints. The abdomen and breast are scarlet, and the bill is rather curiously colored, the upper mandible being black and the lower yellow.

This diversity of coloring in the sexes, which holds throughout the entire group, is productive of very great trouble to the systematic naturalist, as the two sexes are in many cases so very unlike each other that there is hardly any criterion for settling the species to which they belong, except by patient and careful observation of their habits when at liberty in their native haunts. When, moreover, the birds are shy and retiring in their habits, as is the case with many of the Trogons, the amount of labor which is entailed upon the observer is more than doubled, and the value of such a work as Mr. Gould's monograph is proportionately increased.

THE MEXICAN TROGON is, as its name implies, an inhabitant of that country whose name it bears, being generally found in the northern districts of Mexico. It is worthy of remark that the Trogons of America are all similar in their coloring; the upper parts of the adult males being green, and the under portions either scarlet or yellow. The young male and the female birds are not so brilliant in hue. In most instances the outer quill-feathers of the tail are barred with black and white. The beak of these species is marked with notches along the tip of the mandibles and pointed with bristly hairs at the base.

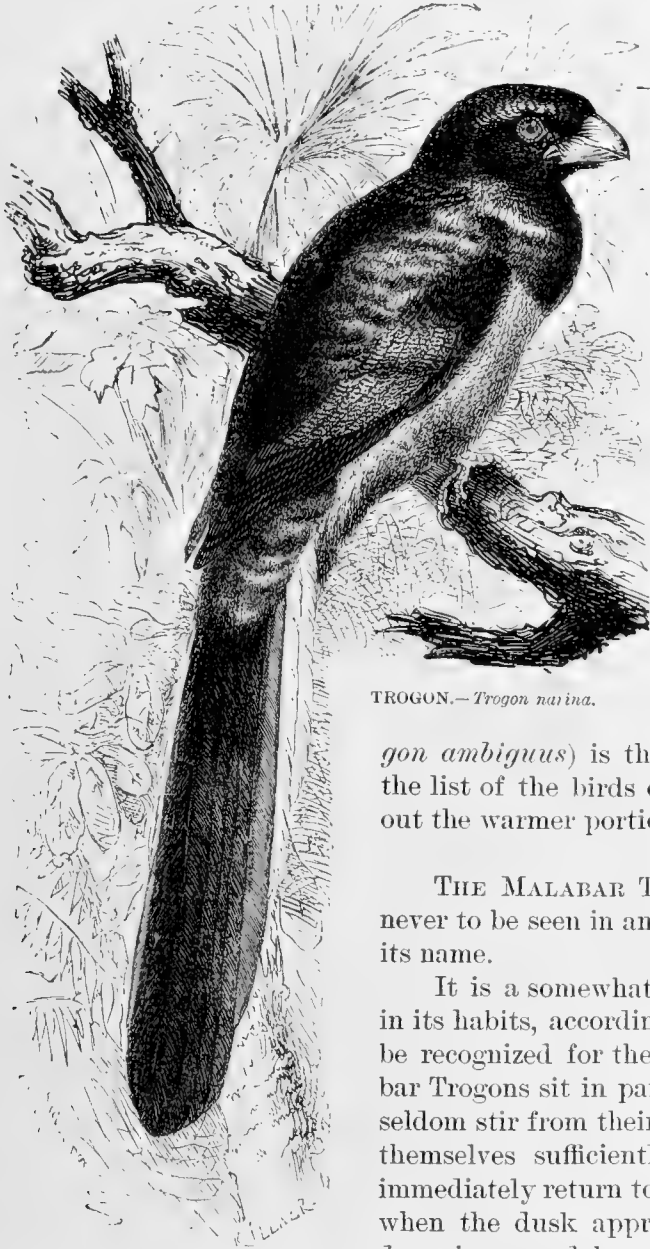
THE NARINA TROGON is an inhabitant of Africa, and is generally found in the densest forests of the southern portions of that continent. Its rather graceful name was given to it by Le Vaillant, in remembrance of Narina, a young Gonaqua Hottentot girl, whose dusky charms and savage graces made an instantaneous and most powerful impression on the heart of the susceptible Frenchman.

This species has many of the habits of the fly-catcher, with the exception of its partially nocturnal mode of life. During the daytime it seeks the darkest recesses of its native forests, and, selecting a dead branch as its perch, sits dull and motionless until the evening. It then sallies from its place of refuge, and settling upon a convenient bough, sweeps upon every insect that may pass within a convenient distance, and carrying its prey back to the perch, devours it at leisure.

The general color of this beautiful bird is emerald green, shining with an almost metallic lustre. This hue is spread over the whole of the upper surface, except the wings and tail, and also tinges the throat and chest. The abdomen and remainder of the under surface are bright red. The wings are brown covered with minute dots of gray upon the secondaries and greater coverts, and the tail is colored with several shades of green above, diversified by the pure white of the three outer feathers on each side. The beak is yellowish-blue. The female bird is differently colored, her plumage being of the following hues:—The green of the upper surface and throat is not quite so resplendent as in her mate, and a rusty-brown tint is spread over the throat and round the eyes, warming into a delicate rose upon the chest. The total length of the bird is nearly one foot.

THE very rare and curiously formed CUBA TROGON is a native of the country from which it derives its name.

According to Gould, it bears a singular resemblance to the woodpeckers, both in its habits and in the general formation of its plumage. Like those birds, it runs about the trunks and



TROGON.—*Trogon naia*.

branches of trees, peers into the hollows, and dislodges from under the bark the insects on which it feeds. The most striking peculiarity in its form is the shape of the tail-feathers, which have the web extending beyond the shaft in such a manner that they seem to have been trimmed with scissors. The specific name "*temnurus*" signifies "clipped wing," and is given to the bird on account of this remarkable formation.

The back and upper tail-coverts of the Cuba Trogon are bright grassy-green, and the head and ear-coverts are steel-blue. The wings are beautifully barred with white, green, and black, and the tail is blue-green in the centre, the feathers being green with blue edges, those of the exterior are white, and the rest barred with white and green. The total length of this bird is about eleven inches.

THE COPPERY-TAILED TROGON (*Trogon ambiguus*) is the only species of this genus enumerated in the list of the birds of North America. Its *habitat* is throughout the warmer portions of Central America.

THE MALABAR TROGON is a very local bird, and is thought never to be seen in any locality except that from which it derives its name.

It is a somewhat nocturnal bird, and is so totally different in its habits, according to the time of day, that it would hardly be recognized for the same creature. During the day the Malabar Trogons sit in pairs on the topmost branch of some tree, and seldom stir from their post until evening. Sometimes they rouse themselves sufficiently to pounce upon a passing insect, but immediately return to the perch, and resume their position. But when the dusk approaches, the Malabar Trogon shakes off its drowsiness, and becomes one of the most spirited and active of

birds, flitting from branch to branch, and tree to tree, or traversing the boughs in search of its prey, with wonderful adroitness, and almost meteoric rapidity.

The head and neck of the adult male bird are deep sooty-black, and the back and upper surface are brownish-yellow. A white crescent-shaped stripe runs round the chest, and separates the black hue of the throat from the brilliant scarlet of the breast and remainder of the under surface. The primary quill-feathers of the wings are black edged with white, and the centre of the wings is pencilled with very delicate white lines on a blacker ground. The tail is boldly marked with chestnut and black, and is decorated with white tips at the extremity of the feathers. The bill and the space round the eyes are light blue. The female is easily distinguished from her mate by the duller hue of her plumage, and the absence of the beautiful scarlet which decorates the abdomen of the male bird.

SEVERAL of the Trogons are distinguished from their relatives by the length and downy looseness of many of the feathers, more especially the lance-shaped feathers of the shoulders, and the elongated upper tail-coverts. On account of this structure of the plumage, they are gathered into a separate genus under the appropriate title of *Calurus*, or Beautiful-tailed Trogons.

The first of these birds, the BEAUTIFUL TROGON, is a native of South America, and well deserves its name, as it is not only richly gorgeous in the colors of its plumage, but is also elegant in form. On account of the looseness of its feathers it is not able to chase insects in the air with as much adroitness as is exhibited by the firmer-feathered Trogons, and is found to make its diet chiefly upon berries, fruits, and the insects which it can pick off the branches without being forced to pursue them on the wing. While engaged in the search after food, it is a sufficiently active bird, running about the boughs with great agility, and clinging with its powerful feet in every attitude, seeming to care little whether it be sitting on a branch, after the custom of most birds, or hanging with its head downward, like the parrots.

Although so brilliant in coloring, it is not so easily seen as might be supposed, for its color harmonizes well with the foliage and bark of the trees among which it dwells, and even the rich carmine of its under surface is not very conspicuous in that land of flowers.

The head is decorated with a curiously-shaped tuft of slight and elastic feathers, which spring from the forehead, and by their peculiar curve overshadow the nostrils and a considerable portion of the beak. This crest, together with the head, the throat, the back, wing-coverts, and upper tail-coverts, are of the richest imaginable green glazed with gold, glowing with a changeable sheen as the breeze plays with the delicate fibres of the plumage. The quill-feathers of the wing are black, as are the six central feathers of the tail. The upper tail-coverts are very long, exceeding the tail by two inches, flowing gracefully over the stiffer feathers by which they are supported, and contrasting beautifully with their glossy black. The abdomen and remainder of the under surface is rich carmine. The total length of an adult bird is about fourteen inches.

BEFORE entering into any detailed description of the RESPLENDENT TROGON, we must explain that in order to bring it within the limits of our pages, it has been drawn in smaller proportions than any of the other Trogons. In size the Resplendent Trogon is larger than the species which has just been described, so that if it had been drawn to the same scale of proportion, the engraving would have been rather more than sixteen inches in length, being nearly double the length of the present pages.

Of all the birds of the air there is hardly any which excites so much admiration as the Resplendent Trogon. Many, such as the humming-bird, are gifted with greater brilliancy of color; but for gorgeousness of hue, exquisite blending of tints, elegance of contour and flowing grace of plumage, there is no worthy rival in all the feathered tribe. This magnificent bird is a native of Central America, and was in former days one of the most honored by the ancient Mexican monarchs, who assumed the sole right of wearing the long plumes, and permitted none but the members of the royal family to decorate themselves with the flowing feathers of this beautiful bird.

In all the Trogons the skin is very delicate, and the feathers are so loosely attached that they are always liable to be lost when the bird is handled; but in the Resplendent Trogon the skin is so singularly thin that it has not been inaptly compared to wet blotting-paper, and the plumage has so slight a hold upon the skin, that when the bird is shot, the feathers are plentifully struck from their sockets by its fall and the blows which it receives from the branches as it comes to the ground. These peculiarities render the preservation of the skin no easy task; and the difficulty of removing the skin without injury is so well known to the natives, that they almost invariably dry the body without attempting any further preservation.

This species is fond of inhabiting the densest forests of Southern Mexico, and generally haunts the topmost branches of the loftiest trees, where it clings to the boughs like a parrot, and traverses their ramifications with much address. It does not seem to expend much time



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RESPLENDENT TROGON.



on the wing, and to all appearance feeds more on vegetable diet than is the case with its relatives.

The color of the adult male bird is generally of a rich golden green on the upper parts of the body, including the graceful rounded crest, the head, neck, throat, chest, and long lancet-shaped plumes of the shoulders. The breast and under parts are brilliant scarlet, the central feathers of the tail are black, and the exterior white with black bars. The wonderful plumes which hang over the tail are generally about three feet in length, and in particularly fine specimens have been known to exceed that measurement by four inches, so that the entire length of the bird may be reckoned at four feet. The bill is light yellow.

As is often the case with birds, where the male is remarkable for the beauty of his plumage, the female is altogether an ordinary and comparatively insignificant bird, at least to human eyes, although beautiful enough in those of her mate. She possesses only the rudiments of a crest or elongated plumes, as may be seen by reference to the engraving, where both sexes are represented. The color of the upper surface is nearly the same as that of the male, although hardly so vivid, and the head, throat, and chest are of a decidedly dull green. The breast and abdomen are grayish-brown, and the under tail-coverts are scarlet. The elongated feathers of the shoulders are not so long as in the male, nor so sharply pointed, nor so vividly colored. The central feathers of the tail are black, and the exterior are white marked with black bars; the bill is black. The young of the first year, whether male or female, assume this dress, and do not put on their full glory of apparel until they have passed through the moult of the second year.

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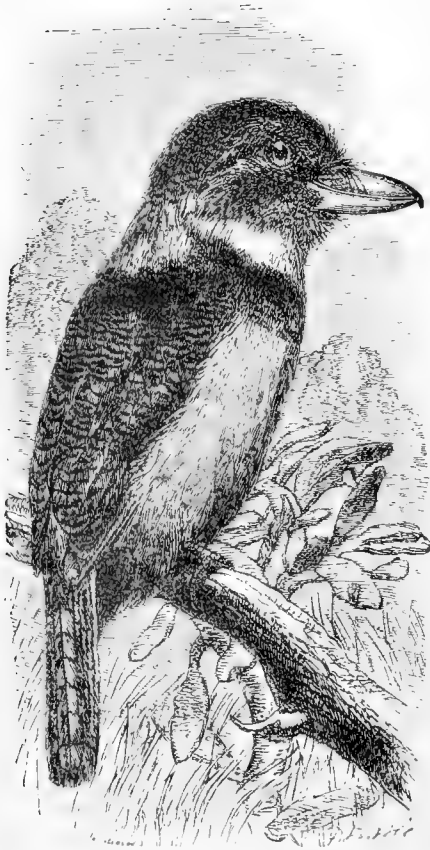
## BARBETS, OR PUFF-BIRDS.

THE BARBETS evidently form a connecting link between the trogons and the kingfishers, possessing several of the peculiarities of the former birds, together with some characteristics of the latter.

In shape they bear a close resemblance to the kingfishers, and none of them are of any great size. Their food consists chiefly of insects, which they chase much after the manner of the woodpeckers, prying into the hollows of trees, and striking away the bark in their endeavors to secure the concealed prey. They can cling to the perpendicular trunk of a tree, and support themselves by the pressure of their short stiff tails against the bark. They also possess some of the habits which belong to the fly-catchers, and taking their perch upon a twig, will wait patiently until an unfortunate insect passes within a short distance, when they will launch themselves on the devoted creature, and return to the identical twig from which they started.

To all appearance the Barbets are dull and heavy birds, seeming to pass a very unenviable kind of existence; chained as it were to a single spot, and apparently feeling every movement a source of trouble. But to the Barbet itself, this kind of inactive life constitutes its best happiness; and we should be as wrong to attribute sadness and melancholy to it, as was Buffon when he spoke in such forcible and eloquent terms of the miserable existence passed by woodpeckers. While sitting upon the twig which it has chosen for its perch, the Barbet has a curious habit of puffing out its plumage, so as to transform itself into an almost cylindrical ball of feathers, and has, on account of this odd custom, been termed the Puff Bird.

THERE are many species of Barbet, one of which, the COLLARED BARBET, a native of South America, is an example of the typical genus *Bucco*. It is rather a pretty little bird, the head and neck being of a chestnut-fawn, the chest white, and the under parts of the body the same hue as the head, but of a lighter tint. A well-defined black collar or band runs across the chest, and extends over the shoulders, where it merges into the chestnut-brown of the back.



COLLARED BARBET.—*Bucco collaris*.

The wings and back are darker than the head, and covered with a number of small black bars. The tail is chestnut and barred with black.

THE WHITE-FACED BARBET is not so handsome a bird, being more sombre in its clothing than the collared Barbet. The general color of this bird is black, and the forehead and face are white, together with the chin. In size it is about equal to our common starling. It is also a native of Southern America. This bird has been chosen as a representative of the genus *Monasa*, a small group of birds which has been separated from the other Barbets on account of the form of the beak and the structure of the wing.

THE last example of these curious birds is the WHITE-BACKED BARBET, which serves to represent the genus *Chelidoptera*. This is a much smaller bird than either of the preceding examples, but is notable on account of the curious manner in which its plumage is diversified with black and white. The general tint of the body is sooty black, but upon the back there is a conspicuous patch of white, and a considerable amount of white is scattered over the middle of the wings, and upon the under tail-coverts. It is also a native of Southern America.

So highly gifted are these birds with that quality which is called "adhesiveness" by phrenologists, that when they have once selected a twig as a resting-place, they will remain faithful to their choice, and for month after month may be seen sitting on the identical perch, lethargic and happy. They are solitary birds, never being seen in flocks, and very seldom in pairs, residing always in the murkiest recesses of the deep forests, in preference to the open country, and sitting on their low perch in spots which the foot of man seldom penetrates.

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## KINGFISHERS.

THE KINGFISHERS form a tolerably well-marked group of birds, all of which are remarkable for the length of the bills and the comparative shortness of their bodies, which gives them a peculiar bearing that is not to be mistaken.

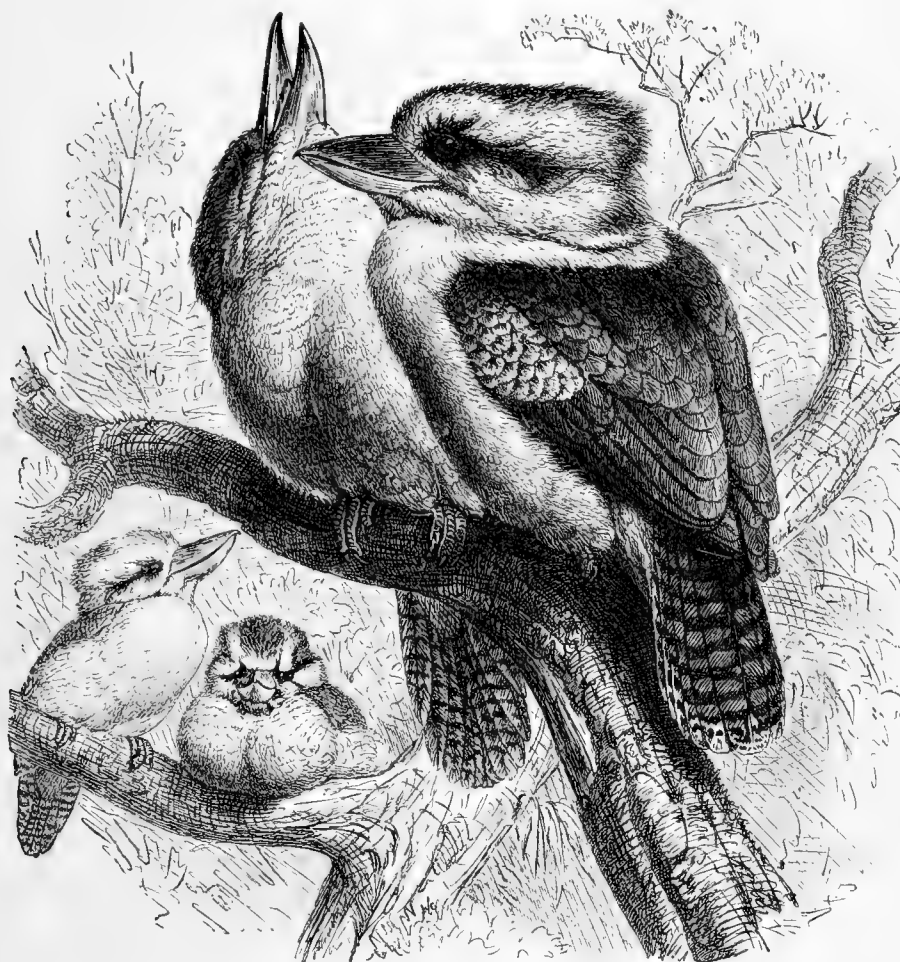
The bills of these birds are all long and sharp, and in most cases are straight. Their front toes are always joined together more or less, and the number of the toes is very variable in form and arrangement; some species possessing them in pairs, like those of the parrots, others having them arranged three in front and one behind, as is usually the case with birds, while a few species have only three toes altogether, two in front and one behind. The wings are rounded. As may be gathered from their popular name, they mostly feed upon fish, which they capture by pouncing upon the finny prey; although in some instances, such as that with which we shall commence our history, they make the greatest part of their diet of insects and crustaceans. In color they are very variable, some being comparatively dull in tint, possessing no colors but black, brown, and white, while others are decorated with the most brilliant plumage, which nearly equals that of the trogons in gorgeousness of hue, although the colors are not distributed in such large masses, nor are the feathers so exquisitely soft and downy.



They are to be found in nearly all parts of the world, and Europe boasts of one of the handsomest, although one of the smallest, species.

OUR first example of the Kingfishers is the LAUGHING JACKASS, or GIANT KINGFISHER, its former title being derived from the strange character of its cry.

This bird is an inhabitant of Australia, being found chiefly in the southeastern district of that country, and in New South Wales. In Van Diemen's Land Mr. Gould believes that it does not exist. In no place is it found in any great numbers; for although it is sufficiently common, it is but thinly dispersed over the country. It is rather a large bird, being eighteen inches in total length, and is powerful in proportion, being able to wage successful war against creatures of considerable size.



LAUGHING JACKASS.—*Paralcyon gigas*.

Although one of the true Kingfishers, it so far departs from the habits of the family as to be comparatively careless about catching fish, and, indeed, often resides in the vast arid plains where it can find no streams sufficiently large to harbor fish in their waters. Crabs of various kinds are a favorite food with this bird, which also eats insects, small mammalia, and reptiles. Mr. Gould mentions an instance where he shot one of these birds for the sake of possessing a rare and valuable species of rat which it was carrying off in its bill. It is also known to eat snakes, catching them with great dexterity by the tail, and crushing their heads with its powerful beak. Sometimes it is known to pounce upon fish, but it usually adheres to the above-mentioned diet.

The cry of this bird is a singular, dissonant, abrupt laugh, even more startling than that of the hyena, and raising strange panics in the heart of the novice, who first hears it while bivouacking in the "bush." Being of a mightily inquisitive nature, the Laughing Jackass

seems to find great attraction in the glare of a fire, and in the evening is apt to glide silently through the branches towards the blaze, and perching upon a neighboring bough, to pour forth its loud yelling cry. The "old hands" are in nowise disconcerted at the sudden disturbance, but shoot the intruder on the spot, and in a very few minutes convert him into a savory broil over the fire which he had come to inspect.

At the rising and the setting of the sun the Laughing Jackass becomes very lively, and is the first to welcome the approach of dawn, and to chant its strange exulting pæans at the return of darkness. From this peculiarity, it has been called the Settler's Clock. In allusion to the cry of this bird, which has been compared by Sturt to the yelling chorus of unquiet demons, the natives call it by the name of Gogobera.

We evidently have in this bird another example of the frequency with which one idea runs through and intersects the various divisions of the animal kingdom, mystically uniting by undefinable bonds the various departments and innumerable groups of living beings. Several of these remarkable facts have already been mentioned, where the question was of form; and we have in the Laughing Jackass, and its resemblance in that respect to the laughing hyena, a similarity of voice in two very opposite beings. In the same manner, the voice of the harmless ostrich is a roar so precisely resembling that of the fierce and carnivorous lion, that even the Hottentots have been unable to discriminate between the bird and the quadruped. As a general rule, color is but little developed in the mammalian forms, and very greatly so among the birds. Yet we have several instances among the mammals—such as the mandril and several other quadrumana—where the vivid coloring of the skin is but little inferior to that which paints the plumage of the tropical birds.

SEVERAL species belonging to the same genus are worthy of a passing notice, among which we may mention LEACH'S DACELO (*Dacelo leachii*), and the BUFF DACELO (*Dacelo cervina*). The former of these birds is a remarkably handsome creature, and inhabits the northeastern parts of Australia, where, according to Mr. Gould, it takes the place of the laughing jackass. It is a little smaller than that bird, and resembles it greatly in its form and general habits. Its head and crest are dark brown, and the abdomen is covered with numerous narrow wavy brown bars. In the male bird the wings and tail are richly colored with deep orange; but in the female the tail is chestnut, barred with a bluish black.

The Buff Dacelo inhabits the thickly wooded portions of the northern and northwestern districts of Australia, where it may be seen and heard sitting on the topmost branches of the loftiest trees, taking observations of the surrounding country, and yelling in a most unmusical manner. When three or four pairs of these birds get together upon a single tree, they become quite excited by mutual noise, and make such a horrid uproar that nothing can be heard except their deafening outeries. It is a very shy bird, and not easily approached within range of shot.

The general color of this bird is a pale fawn marked with brown, and with a considerable amount of rich blue in the wings and tail of the male, the tail-feathers being largely tipped with white. The tail of the female is chestnut, boldly barred transversely with deep black, and tipped with buff.

OF the genus Halcyon, the AUSTRALIAN KINGFISHER affords a good example.

This bird is a resident in New South Wales from August to December or January, and then passes to a warmer climate. Like the preceding birds, it cares little for the presence of water, making its subsistence chiefly on large insects, such as locusts, caterpillars, grasshoppers, and cicadae, which it seizes in its bill, and beats violently against the ground before eating them. It is also very fond of small crabs and other crustaceans. Mr. Gould mentions that the stomachs of Australian Kingfishers that had been shot were found crammed with these creatures. To obtain them, it is in the habit of frequenting the sea-shore, and pouncing upon the crabs, shrimps, prawns, and various other creatures as they are thrown on the strand by the retiring tide, or forced to take refuge in shallow rock-pools, whence they can easily be extracted by the long bill of this voracious bird.

On the banks of the Hunter River this Kingfisher resorts to a very curious method of obtaining food. There is a kind of ant which builds a mud nest upon the dead branches and stems of the gum-trees, and by the unpractised eye would be taken for fungi or natural excrescences. The Kingfisher, however, knows better, and speedily demolishes the walls with his powerful beak, for the purpose of feeding upon the ants and their larvæ.

Like the preceding bird, the Australian Kingfisher is a most noisy creature, and remarkably fond of exercising its loud startling cry, which is said to resemble the shriek of a human being in distress, sharp, short, urgent, and frequently repeated. There is hardly any real nest of this species, which chooses a convenient hollow branch or "spout" as its domicile, and there lays its eggs. They are generally from three to five in number, and are of a pure white.

It is rather a fine bird, being nearly the same size as the laughing jackass. The top of its head and the back of the scapularies are tinged with a dull green, and the throat, neck, and abdomen are buff, abundantly flecked with brown spots. The wings and the tail are of a rather peculiar greenish blue, in which the latter hue prevails, and the ear-coverts and a line round the back of the head are blackish green.



AUSTRALIAN KINGFISHER.—*Halcyon sancta*.

THE genus *Tanysiptera* is well illustrated by the well-known though somewhat scarce TERNATE KINGFISHER, a bird which may be easily recognized by the peculiar form of the tail. The generic name is of Greek origin, and signifies Long-winged, and is rather longer than needful, the simpler form of the word being *Tanyptera*, or more properly *Tanypteryx*. But when once a systematic naturalist begins to indulge in so-called classical nomenclature, he seems to be irresistibly attracted by the words in proportion to their length and abstruseness.

The Ternate Kingfisher is one of those species which are decorated with richly colored plumage, and is a truly handsome and striking bird. The head is of a bright ultramarine blue, and the upper parts of the body are of a deeper tint of the same color, being of a "Prussian" blue, that is almost black in its intensity. The wing-coverts are of the same ultramarine as the head, as are also the edges of the quill-feathers of the tail. The two central tail-feathers are much prolonged, considerably exceeding the others in length, and are very curiously shaped, being webbed at their bases, bare for nearly the whole of their length, and again webbed at the extremities. Their color throughout is blue, the tips being white, as are the remaining feathers of the tail with the exception of their blue edges. The whole of the under parts are white.

The Ternate Kingfisher is a native of New Guinea, and from thence its skin has often been

sent to Europe, but in a mutilated state, the natives being in the habit of depriving it of its legs and wings before parting with the skin. The Paradise birds were long treated in the same manner, until the sportsmen learned that they could sell the entire bird at a better price than when it had been mutilated.

IN the birds which form the genus *Ceyx* there are only three toes, and one of them very strong, the tail is very short, and the bill straight, like that of the common Kingfisher of Europe. The reader must note that the word *Ceyx* is dissyllabic.

THE TRIDACTYLOUS KINGFISHER is a native of Java, Borneo, and the whole of the Indian Archipelago, and is said to have been discovered even upon the continent itself. Although a very little bird, it is one of the most brilliantly colored of the entire group, and hardly yields even to the gem-like humming-bird in the metallic and glittering color of its plumage. Even the united aid of pencil and brush can give but little idea of the extreme beauty of the coloring of this bird, for the glowing richness of the tints as they flash and glitter with every movement of the bird and vary momentarily in hue and tone, is far beyond the power of art, and sets at nought the colors of the most skilful painter.

The head of the Tridactylous Kingfisher, as well as the whole upper surface of the body, is a deep rich lilac, and the wings are stained with a most beautiful and singular mixture of deep blue and ultramarine, the centre of each feather being of the former tint, and the edges of the latter hue. The whole of the under surface is pure white, the feet are red, and the bill is a pale carmine. In its dimensions it is exceedingly small, being one-third less than the common Kingfisher of Europe.

THE interesting birds which are gathered into the genus *Ceryle* may be known by the thick, compressed, and sharply pointed beak, the comparatively long and rounded tail, and the length of the front inner toe. To this genus may be referred all the American species of this group, one of which, the BELTED KINGFISHER, forms the subject of the following description.

The Belted Kingfisher is an inhabitant of many parts of America, and as it is in the habit of migrating northward or southward, according to the season of the year and the state of the temperature, it is a very familiar bird throughout the greater part of America, from Mexico to Hudson's Bay. So common is it in these regions that, according to Wilson, "mill-dams are periodically visited by this feathered fisher, and the sound of his pipe is as well known to the miller as the sound of his own hopper."

The sight of the Belted Kingfisher is singularly keen, and even when passing with its meteor-like flight over the country, it will suddenly check itself in mid career, hovering over the spot for a short time, watching the finny inhabitants of the brook as they swim to and fro, and then with a curious spiral kind of plunge will dart into the water, driving up the spray in every direction, and after a brief struggle will emerge with a small fish in its mouth, which it bears to some convenient resting-place, and after battering its prey with a few hearty thumps against a stump or a stone, swallows it, and returns for another victim. Waterfalls, rapids, or "lashers" are the favored haunts of the Belted Kingfisher, whose piercing eye is able to discern the prey even through the turmoil of dirty water, and whose unerring aim fails not to seize and secure the unsuspecting victims, in spite of their active fins and slippery scale-covered bodies.

"Rapid streams," says Wilson, "with high perpendicular banks, particularly if they be of a hard, clayey, or sandy mixture, are also the favorite places of resort for this bird, not only because in such places the small fish are more exposed to view, but because those steep and dry banks are the chosen situation of his nest."

In these banks the Belted Kingfisher digs a tunnel, which often extends to the length of four or five feet, employing both beak and claws in the work. The nest is of a very simple nature, being composed of a few small twigs and feathers, on which are laid the four or five pure white eggs. The birds seem to be much attached to their homes, and the same pair will



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BLACK AND WHITE KINGFISHER.



frequent the same hole for many successive years, and rear many broods within the same habitation. The extremity of the burrow where the eggs are placed is always rather larger than the tunnel itself, and is expanded into a globular chamber for the purpose of affording a sufficiency of space for the parents and their young. It is said that when a supposed enemy approaches the nest, the parent birds employ various artifices to draw his attention away from the sacred spot, and by fluttering about as if wounded or disabled, will often succeed in their endeavors. When the young are hatched, the parents are remarkably attentive to them, as might be supposed from the reckless manner in which they expose themselves to danger for the sake of their offspring.

The coloring of this spirited little bird is rather complicated and not very easy of description. The head is furnished with a crest of long pointed feathers, which can be raised or depressed at will, and the whole upper surface of the body is light blue, marked with a great number of narrow dark streaks caused by the black-blue shaft of each feather. The wings are blackish-brown, bound with white upon the primaries, and diversified with blue upon the exterior web of the secondaries. The sides are covered with blue mottlings, a belt of the same bright hue crosses the chest, and a broad white band encircles the neck, throat, and chin. The tail is black-brown barred with white, with the exception of the two central feathers, which are blue. The length of this bird is about one foot.

The voice of the Belted Kingfisher is loud, dissonant, and startling, and has been compared by Wilson to the sound produced by twirling a watchman's rattle.

The Belted Kingfisher (*Ceryle alcyon*) is a very familiar bird in New England and the Northern States. It is occasionally seen in Maine during the winter months.

ASIA presents us with a remarkably fine representative of the same genus in the handsome SPOTTED KINGFISHER, several specimens of which bird are to be found in the British Museum. This magnificent bird, which is appropriately called by the natives Muchee-bag, *i. e.*, Fish-Tiger, is an inhabitant of India, where it seems to be confined to the Himalayan district.

In size it is but little inferior to the Great African Kingfisher, being one foot three inches in length, and bearing a bill three inches long. The chest and sides of the neck of the Fish-Tiger are of a beautiful grayish-white, which slightly deepens into a very pale fawn on the abdomen and the under tail-coverts. The remainder of the body is covered with jetty black plumage, relieved by numerous spots of pure white, and the head is decorated with a large noble-looking crest, composed of elongated feathers of the same boldly contrasting hues. A few black spots form a curved line between the bill and the shoulder, and also are scattered in an uninterrupted band across the chest. The food of this bird consists mostly of fish, although it feeds also on aquatic insects. Its nest is made among large stones, and is not composed only of fish-bones, as is the case with the common European Kingfisher, but is rather elaborately constructed of mud lined with grasses, and adheres to the stones after the fashion of the well-known swallows' nest. The eggs are four in number, and the young birds resemble the parent bird in their markings.

ANOTHER species of *Ceryle*, the BLACK AND WHITE KINGFISHER (*Ceryle rudis*), is remarkable for the peculiarity of tinting from which it derives its name, which affords a rather remarkable contrast to the brilliant hues of blue and green which decorate the majority of these birds. It is a native of many parts of the Old World, being spread over various portions of Asia and Africa.

THE COMMON KINGFISHER is by far the most gorgeously decorated of all our indigenous birds, and can bear comparison with many of the gaily decorated inhabitants of tropical climates.

It is a sufficiently common bird, although distributed very thinly over the whole country, and considering the great number of eggs which it lays, and the large proportion of young which it rears, is probably more plentiful than is generally supposed to be the case. The straight, glancing flight of the Kingfisher, as it shoots along the river-bank, its azure back gleaming in the sunlight with meteoric splendor, is a sight familiar to all those who have been

accustomed to wander by the sides of rivers, whether for the purpose of angling, or merely to study the beauties of nature. So swift is the flight of this bird, and with such wonderful



KINGFISHER.—*Alcedo ispida*.

rapidity does it move its short wings, that its shape is hardly perceptible as it passes through the air, and it leaves upon the eye of the observer the impression of a blue streak of light. This straight, arrow-like course is that which is generally adopted by the bird, but on some occasions the Kingfishers will become very playful, and sport with each other in the air, turning and wheeling with much adroitness as they mutually chase or avoid each other in their game.

The food of this bird consists chiefly, though not exclusively, of fish, which it takes, kills, and eats in the following manner:—

Seated upon a convenient bough or rail which overhangs a stream where the smaller fish love to pass, the Kingfisher waits very patiently until he sees an unsuspecting minnow or stickleback pass below his perch, and then, with a rapid movement, drops into the water like a stone and secures his prey. Should it be a small fish, he swallows it at

once; but if it should be of rather large dimensions, he carries it to a stone or stump, beats it two or three times against the hard substance, and then swallows it without any trouble.

The Kingfisher, if unmolested, soon learns to be familiar with man, and has no hesitation in carrying on the daily affairs of its life without heeding the near presence of a human observer. I have known a Kingfisher to sit upon a projecting stone that overhung a stream running at the foot of a garden, and to permit the owners of the garden to watch its proceedings without exhibiting any alarm. If managed properly, this interesting bird will so far extend its confidence to man as to become partially domesticated, speedily rivalling the robin or the sparrow in the bold familiarity of its manners. One such bird, that was tamed by a friend, owed its domestication to the loss of its parents.

Three young Kingfishers were seen sitting in a row upon a branch of a tree close to a stream, and drew the attention of their future guardian by their constant wailing after food. Various kinds of food were accordingly procured for the poor desolate birds; but as the right sort of diet was not obtained for some days, two of the young birds died. The third, however, survived, and lived for a considerable time, coming regularly for his food, and receiving it at the hands of his protector, but never venturing into the house. With process of time he met with a mate and founded a family after the usual Kingfisher fashion. But he soon discovered that it was easier to supply his family with food by resorting to his kind friends and asking them for fish, than by spending time and trouble in capturing fish for himself.



THE TINY KINGFISHER is found, according to Gould, in Northern Australia and New Guinea, and is a remarkably beautiful little creature.

In its habits it is very shy, and seems to prefer the deepest thicket as its place of residence, so that it cannot easily be approached without taking the alarm, and, indeed, is but seldom seen at all, even by those who give their attention wholly to the search after objects of natural history. Its voice, however, will often betray its presence, as it is fond of hearing itself talk, and frequently utters a shrill piping note, which can be heard at a considerable distance, and cannot be mistaken for the voice of any other bird. Although it is able to fly with considerable swiftness, it is not very powerful on the wing, its flight being strangely unsteady.

In its habits it resembles the European Kingfisher, catching and feeding on fish in much the same manner.

The general color of the Tiny Kingfisher is a most intense blue, which, with few exceptions, is spread over the whole of the upper surface. Upon the eyes and below the ear-coverts there is a rather large white patch, the primary feathers of the wings are blackish brown, and the secondaries blue, edged with shining green. The throat, chest, and abdomen are of a beautifully pure white, contrasting boldly with the deep blue of the upper parts of the body.

ANOTHER species, the AZURE KINGFISHER (*Alcyon azurea*), is closely allied to the tiny Kingfisher, and is also a native of Australia, but inhabits a different locality, being found in New South Wales and Southern Australia.

The nest of this bird is made in holes in the banks, and is simply composed of the disgorged bones, scales, and other indigestible portions of the fishes which have been rejected after the manner of most carnivorous birds. The number of eggs is rather large, being from five to seven. The young are remarkably noisy, and whenever the parent birds pass the entrance of the hole the young Kingfishers immediately think themselves hungry, and set up a clamorous appeal for food. It is a very remarkable fact that the young birds assume the plumage of the adult at their first moult, and being always rather precocious, soon manage to get their own living.

The food of this bird consists chiefly of fish and aquatic insects. It is solitary in its habits, being never seen assembled in numbers, and appearing to exercise a watchful jurisdiction over a certain amount of land which it chooses to consider as its own property. The intrusion of a stranger is instantly resented, and as the temper of the bird is naturally quarrelsome, it is no uncommon event to see a pair of them engaged in conflict, dashing to and fro like angry meteors, and whirling through the air in transports of rage. The general color of the Azure Kingfisher is bright ultramarine blue above, buff upon the neck, chest, and abdomen, and pure white upon the chin.

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## JACAMARS.

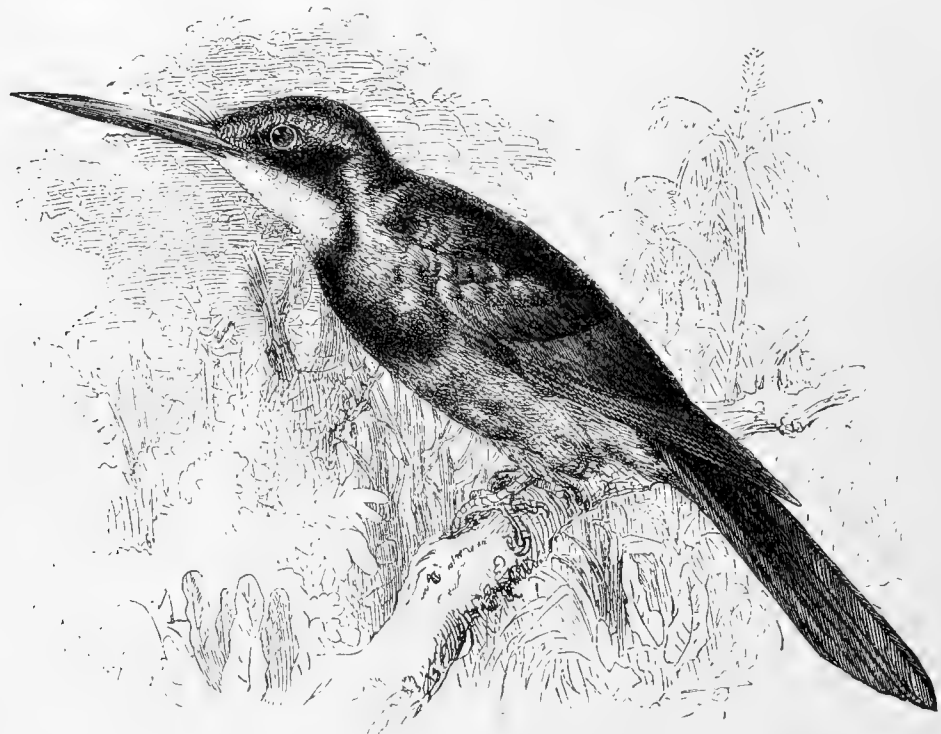
THE curious birds which are popularly known by the name of JACAMARS, are all natives of the New World, and, as might be imagined from the metallic brilliancy of their plumage, are denizens of the tropical regions of their native land.

In all these birds the bill is straight, long, rather compressed, pointed, with a decided keel on the upper mandible, and with the corners of the mouth defended by some bristle-like hairs. As will be seen, the toes are varied in number, some species possessing only three toes, while the remainder are furnished with four toes as usual. The two front toes are united only as far as the claws, and the thumb or "hallux" is either very short or altogether absent. They are insect-eaters, and greatly resemble the trogons in many of their habits.

THE PARADISE JACAMAR is a striking little bird, on account of the beautiful colors with which its plumage is decorated, its graceful form, and the long forked tail. It is but a small bird, being not as large as an ordinary thrush, but its plumage is so beautiful in its coloring

and so graceful in the arrangement of its feathers that the spectator entirely forgets its size in admiration of its beauty. The neck of this species is rather long and mobile, enabling the bird to dart its long straight bill in every direction with great rapidity. The tail is rather curiously formed, the feathers being so graduated that the central pair extend far beyond the others, and form a kind of fork, alterable at the will of the bird. As the Jacamars bear a very close resemblance to the kingfishers, they were formerly supposed to belong to that group of birds, and the Paradise Jacamar was termed the Fork-tailed Kingfisher.

The head of the Paradise Jacamar is brown tinged strongly with violet, and the throat, the neck, and some of the wing-coverts are pure white. The back, wings, and remainder of the body is a rich golden green, and the bill and feet are black. The feet are feathered nearly as far as the toes.



GREEN JACAMAR.—*Galbula viridis*.

In its habits the Paradise Jacamar is not unlike the trogons and fly-catchers, seldom troubling itself to chase its prey through the air, but preferring to sit upon a bough and catch the butterflies as they pass unconsciously near the feet of their destroyer, and then pounce suddenly upon them and secure them in his long bill. So persevering are they in their watchfulness, and so strong is their attachment to the spot where they have taken up their residence, that the locality where they feed can readily be discovered on account of the wings, legs, and other uneatable portions of their prey, which they twist off and throw away before endeavoring to swallow their victim. The Paradise Jacamar is a native of Surinam.

THE GREEN JACAMAR receives its popular name from the slight preponderance which green holds above the other hues in the coloring of its plumage.

Nearly all the Jacamars present a very similar arrangement of colors, which is by no means easy to describe, as the feathers are tinted with glowing hues of green, azure, gold, and metallic red, all of which seem to have been scattered at random over the plumage, and to have become so intermixed that the eye fails to separate them, or to assign any particular locality to any particular color. Indeed, the plumage of the Jacamars is a very Turkey-carpet of tints, all the colors being very bright, but without any definite arrangement; so that, although clad in gorgeous raiment which nearly equals the plumage of the humming-birds in

its bright effulgence when examined feather by feather, the Jacamars are by no means conspicuous birds, and at a little distance do not appear nearly so handsome as the common starling.

The color which is most conspicuous in this and among other Jacamars is a bright metallic coppery-red, which continually changes to a purplish hue, and irresistibly reminds the observer of a copper tea-kettle that has been subjected to the action of fire. The top of the head is green, and the breast is marked with the same hue plentifully mixed with the peculiar coppery tint which has just been mentioned. The chin is grayish white marked with a few brown spots, the chest is dark green and copper, and the wings are also coppery-green, but possess a large admixture of blue. The breast is green with a little copper, and the abdomen chocolate, marked with a few dark longitudinal dashes. The upper surface of the tail is dark shining green, and its under surface is nearly of the same color as the abdomen. The bird is quite a little one.

OF the genus *Jacamaralcyon* we have a good example in the **THREE-TOED JACAMAR**.

This little bird, which is even smaller than the preceding species, possesses none of the brilliant hues which decorate the majority of the group, but is clad in colors even more sombre than those of the sparrow. The whole of the plumage, with very few exceptions, is of a dark, dull, lustreless, sooty-black, beside which the blackbird would look quite brilliant. On a closer inspection a dark olive-green reflection is visible on the upper surface of the body and tail. The top of the head is marked with two or three chocolate streaks, and there is another stripe of the same color drawn from the corner of the mouth towards the back of the neck. The flanks are of the same sooty-black as the back, but without the green reflection, and the white with a slight rusty-red tinge. The under surface of the tail is a gray brown.

THE GREAT JACAMAR, or **BROAD-BILLED LAMPROTILA**, as it is sometimes called, is so like the kingfishers in form and general outline of contour, that it might easily be mistaken for one of those birds by one who had not studied the characteristics of the group with some attention.

In this bird, which evidently forms a link of transition between the Jacamars and the Bee-eaters, and whose generic name of *Jacamarops* has been given to it in allusion to that fact, the beak is extremely broad when compared with the compressed bills of the other Jacamars, and the dilated ridge on the upper mandible is distinctly curved. The tail is broad and moderately long, and the feathers of the head form a partial crest. The short neck, rounded wings, and long bill of this bird give it a great resemblance to the kingfishers, and in its attitudes it has a great air of those birds. Like them, it poises itself upon a branch and darts down to secure its active prey in its bill, but differs from them in the fact that it feeds almost exclusively upon insects, and knows not how to snatch from the stream the scaly inhabitants of the waters.

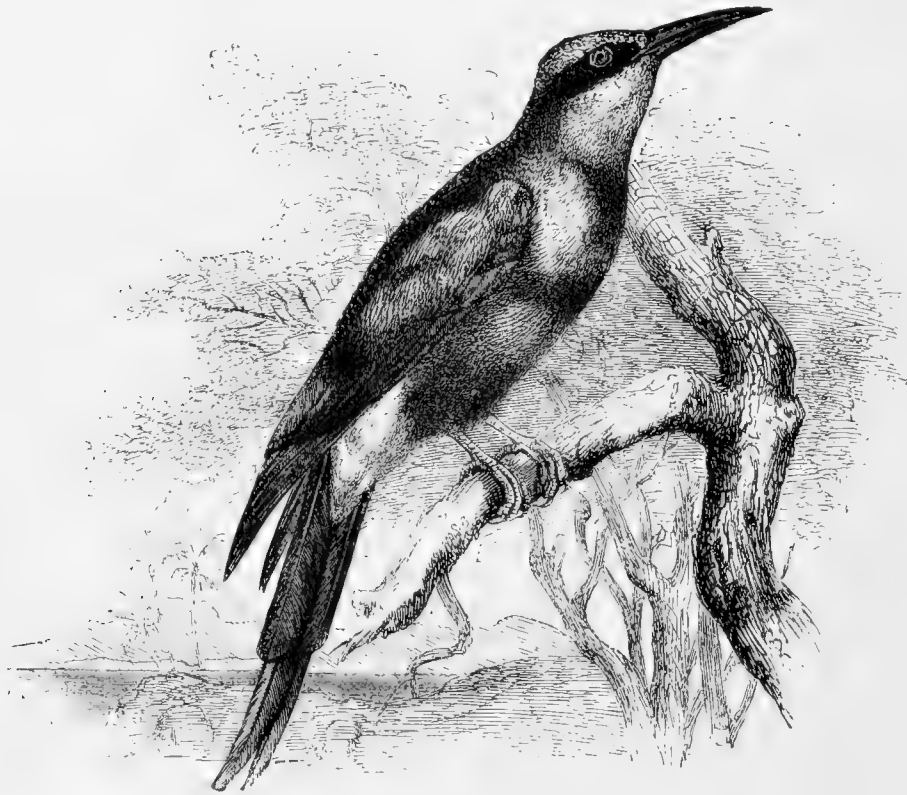
In its coloring this bird very closely resembles the green Jacamar, which has already been described, but does not possess quite so much of the green hue.

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## BEE-EATERS.

THE BEE-EATERS may at once be distinguished from the jacamars by the shape of the bill, which, although somewhat similar in general shape to the beak of those birds, is curved instead of straight, and by the formation of the wings, which, instead of being short and rounded, are long and pointed, and give to their owners a wonderful command of the air, while engaged in chasing their winged prey. Some short bristles overhang the nostrils, and the long and broad tail has generally the two outer feathers longer than the others. Their

plumage is remarkably handsome; being painted with rich, and at the same time with extremely delicate, hues of many colors. Green predominates throughout the group, a verditer-blue seeming to be generally mixed with the green. Some species, such as the Nubian Bee-eater (*Merops nubicus*), are clothed in bright red; while others, such as the Rose-breasted Night-feeder (*Nyctiornis amicta*), are decorated with a rich rose tint upon the face and breast.



NUBIAN BEE-EATER.—*Merops nubicus*.

THE common BEE-EATER is very frequently found in many parts of the European Continent.

Undaunted by the poisoned weapons of the wasp, hornet, or bee, the bird makes many a meal upon these insects, contriving to swallow them without suffering any inconvenience from their stings. It is probable that there may be some peculiarity in the structure of this and several other birds, that renders them indifferent to the poisonous influence of the sting, for it is difficult to account for their immunity on any other theory. Mr. Yarrell imagines that the Bee-eater renders its prey harmless by much pinching and biting, and that by "repeated compression, particularly in the abdomen, the sting is either squeezed out, or its muscular attachments so deranged, that the sting itself is harmless."

THE truly magnificent AZURE-THROATED BEE-EATER is an inhabitant of India, and is found, although very rarely, in the interior of that country.

It is a very rare bird, perhaps not so much on account of the actual paucity of its numbers, as from its extreme shyness, and the nature of the localities where it makes its residence. The home of this bird is always in the deepest recesses of the vast Indian forests, and in spite of its glowing colors and noisy tongue, it is so wary and fearful of man that it is seldom seen. When fairly discovered, however, it often falls an easy prey to the native hunter on account of the extreme nervousness of its nature. The report of a gun in close proximity will have such an effect upon its nervous system as to afflict it with a momentary paralysis, and it sometimes happens that in the great hunting expeditions of the native chiefs,



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The late CHARLES DARWIN writes:—"The illustrations are the best I ever saw in any work. I find it superfluous to enter here into particulars, as I already, in the 'Descent of Man,' have willingly and openly confessed how much I have profited by Mr. Brehm's book, and how highly I esteem it."

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WE have concluded to submit for public patronage a work with the above title, being a series of exquisite Engravings representing the ANIMAL WORLD, executed with great scientific accuracy, and accompanied by full Descriptive Text, written in popular terms, so as to delight and instruct the people. Anyone who has considered the subject must be at a loss to understand why an ILLUSTRATED NATURAL HISTORY, comprehensive and at the same time popular, has not before this been published in this country. Indeed any lover of animals who has visited the great museums and zoological gardens and has had access to books of engravings in the public libraries, could not fail to remark the wealth of material in existence devoted to this subject. Being confirmed in our conviction of the desirability of such a work, we laid under contribution the best existing authorities for the production of most perfect representations of all the more important living creatures, and among the artists whose delineations will delight the reader, we may mention Harrison Weir, Wolf, Coleman, Fr. Specht, and Mutzel. By far the majority of the engravings in these volumes are from drawings made from the *living* animals, many at the Zoological Society's Gardens in London, England.

We purpose that our patrons shall be aided and interested in their study by such an array of pictures as has never before embellished any Natural History. In numerous instances the engraving is printed in oil-colors, and this portion of the illustrations has been taken charge of by Messrs. L. Prang & Co., of Boston, who we believe rank foremost for high artistic results in this department of printing. These Oleographs were copied under the superintendence of Mr. Prang from the renowned "Tafeln" of "Brehm's Thierleben," so that they may be declared perfectly reliable.

We sought competent advice from various sources as to the most suitable text that should accompany this panorama of handsome Engravings. It was found impossible to embody all the present ideas of naturalists in a single work like this on account of the rapid advances and constant changes in their knowledge of, and habits of thought respecting, the Animal World. And it seemed to us correct that the true object of Zoology is not to arrange, to number, and to ticket animals in a formal inventory, but to inquire into their life-nature, and not simply to investigate the lifeless organism.

What do we know of "Man" from the dissecting-room? Is it not Man, the warrior, the statesman, the poet, etc., that we are interested in? With all veneration which attaches itself to those who are the accredited possessors of abstruse learning, their inordinate use of phraseology detracts too much, we fear, from the fascination that the study of the Animal World would otherwise yield, and as we are not content to have our work restricted to a favored few, we thought the task placed in our hands to be to keep the work free from a repellent vocabulary of conventional technicalities. Our endeavor has been to find an author whose work would be noted for its fund of anecdote and vitality rather than for merely anatomical and scientific presentation, and we arrived at the conclusion that we could not do better than avail ourselves of the Rev. J. G. Wood's comprehensive work—a work most popularly approved by speakers of the English language. It would be superfluous to say one word concerning the standard character of his book, from the pages of which old and young at the other side of the Atlantic have obtained so much instruction and rational amusement. Avoiding the lengthened dissertations and minute classifications of specialists, he presents to his readers in popular terms a complete treatise on the Animal Kingdom of all climes and countries. The one objection that could be urged against it was, that animal life in America might be treated more fully and American forms given more consideration. In order to obviate this drawback and to do full justice to the creatures of our own country, we secured the aid of Dr. J. B. HOLDER, of the American Museum of Natural History in New York, an undoubted American authority, who has adapted Wood's work to American wants and given prominence to American forms of Animal life.

The splendid work on Rodentia, by Allen, Coues, and others, will be fully consulted. The valuable work on North American Birds, by Baird, Brewer, and Ridgway, will be the guide in the treatment of birds. The late arrangement of the classification and nomenclature of North American Birds, by Mr. Ridgway, and the Committee on that subject of the Ornithologists' Union, will be utilized in full. The arrangement of Mammals will be after the latest classification by Professor Flower, of the Zoological Society of London. So that this will be the first popular Natural History worthy of the name that has made its appearance here, which gives due and full recognition to the animate world surrounding us.

**Terms of Publication.**

The extent of the work will be 68 parts of 28 pages, at the price of 25 cents each. The entire publication will contain 31 Oleographs and 68 Full Page Engravings on Wood, besides many hundreds of exquisite illustrations interspersed through the text. The parts will be issued every two weeks, and are payable only as delivered. No subscriber's name will be received for less than the entire work, and anyone removing, or not regularly supplied, will please address the Publisher by mail.

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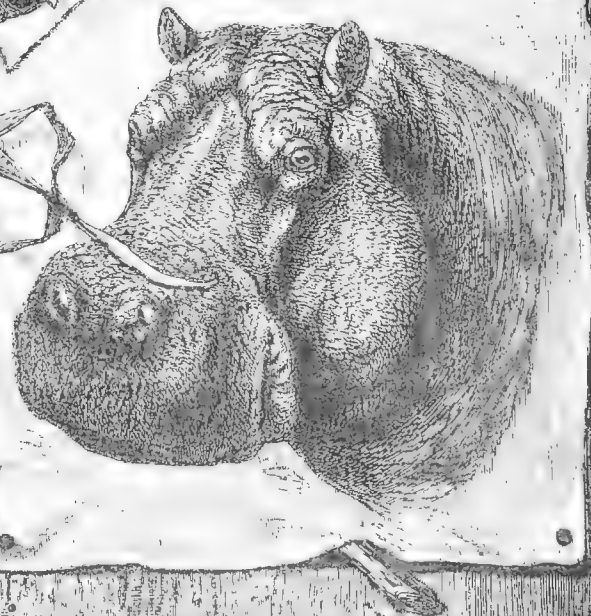
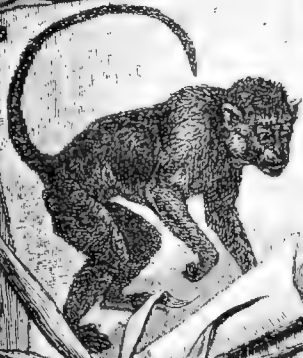
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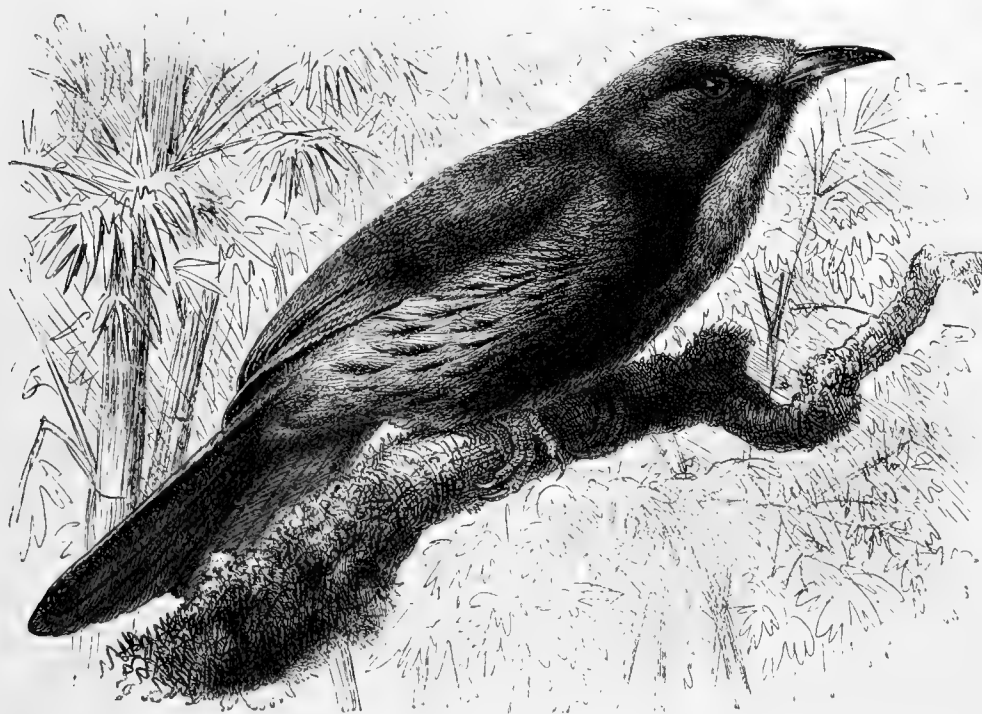


Selmar Hess,  
Publisher  
New York





this Bee-eater is so stupefied by the unwonted turmoil, and repeated explosion of fire-arms, that it lies helplessly on the branch, and permits itself to be taken by hand.



AZURE-THROATED BEE-EATER.—*Nyctiornis atheroni*.

THERE is a very beautiful and closely allied species to the above bird, namely, the ROSE-BREADED NYCTIORNIS, or RED-FACED NIGHT-FEEDER (*Nyctiornis amicta*), of which a passing mention has already been made. This beautiful bird is a native of India, and is supposed to feed chiefly by night, although the fact is not very clearly ascertained. In the beauty and delicacy of the tints which stain its plumage, it may challenge comparison even with the trogons themselves. The crown of the head is a fine lilac, and the face part of the throat, and the upper part of the breast, are a bright rose-carmine. The remainder of the plumage is golden green. The total length rather exceeds one foot.

THE very handsome bird which is indifferently known by the name of BULLOCK'S BEE-EATER, and the BLUE-BELLIED BEE-EATER, is an inhabitant of Western Africa, and has been taken in Senegal. It is a truly beautiful creature, elegant in form and very brilliant in color. It is not a very large bird, being considerably smaller than the common Bee-eater of Europe, and measuring only seven inches in total length, of which the bill occupies one inch.

The upper portions of this species are light green, with the exception of the upper parts of the neck, which is colored by a reddish crimson hue, the two tints merging gradually into each other without any definite line of demarcation. From the gape of the mouth a black stripe runs towards the back of the neck, enveloping the eye in its progress, and a small spot of the same jetty hue is seen upon the tip of the chin. The throat is of the most brilliant scarlet, and the breast and upper part of the abdomen are crimson like the neck. The lower part of the abdomen is clear ultramarine blue, a peculiarity from which the bird derives its popular name. The wings are green like the back, but the secondaries and tertiaries are tipped with velvety black, about half an inch in depth. The feathers of the tail are of equal length, and the bill and legs are black.

THE last example of the BEE-EATERS which can be mentioned in these pages is the RED-THROATED BEE-EATER (*Melittophagus guláris*). This bird is remarkable for the singular

coloring of its plumage, and the vivid contrasts presented by a few spots of bright color upon a dark ground.

The general color of this species is a deep, velvety black, through which a green hue shines in certain lights. Upon the forehead and over the eyes are scattered a few tiny but most brilliant verditer-green feathers, gleaming with a metallic lustre, and a patch of long plumy feathers of the same brilliant hue occurs on the end of the back. The throat is decorated with a patch of light chestnut-red, and the remainder of the breast and abdomen are of the same deep velvety black, over which a number of isolated verditer feathers are very thinly scattered.

## SLENDER-BILLED BIRDS.

### HOOPES, OR UPUPIDÆ.

THE large group of birds which are termed TENUIROSTRAL, or SLENDER-BILLED, always possess a long and slender beak, sometimes curved, as in the creepers, hoopoes, and many humming-birds, and sometimes straight, as in the nuthatch and other humming-birds. The feet are furnished with lengthened toes, and the outer toe is generally connected at the base with the middle toe.

The first family of the Tenuirostres is called after the hoopoe, and termed Upupidæ. In all these birds the bill is curved throughout its entire length, long, slender, and sharply pointed. The wings are rounded, showing that the birds are not intended for aerial feats, and the tail is rather long. The legs are short, and the claws strong and decidedly curved. As several of the families embrace a great number of species, it has been thought advisable to separate them into sub-families, for greater convenience of reference and more precision of arrangement.

The first sub-family is that of the Plume Birds, or Epimachinæ, containing some very beautiful species, all of exotic birth, and inhabiting Australia, New Holland, New Guinea, and the neighboring islands. In these birds the long and slender bill is cloven as far as the eyes, the nostrils are placed at its base, and covered with soft, silken plumes, and the thumb-toe, or "hallux," is of considerable length and very strong, evidently for the purpose of aiding the birds in the pursuit of their prey. The fourth quill-feather of the wing is generally the longest.

THE PTILORIS, OR RIFLE-BIRD, is, according to Gould, the most gorgeous of all the Australian birds, although the full beauty of the creature is not at first sight so striking as that of the parrots or other gaudy-plumaged birds, and needs to be seen by a favorable light before the full glory of the coloring can be made out.

In size the Rifle-Bird is equal to a large pigeon, and in spite of its beauty it is not very often seen, as it is retiring in its habits, and seems to be confined to a very limited range of country. As far as is at present known, it is found only in the thick "bush" of the south-eastern portions of Australia, and even there appears to be a very local bird. It is no wanderer, never flying to any great distance from its home, and procuring its food in the near vicinity of its nest. For lengthened flight, indeed, it is singularly incapacitated by the shortness and rounded form of the wings, which is a never-failing characteristic of weakness in the flight and want of sustaining power. While in its native woods it seems never to make more use of its wings than is needful for the purpose of conveying it from one tree to another.

The habits of this bird are very like those of the common creeper, for it is generally seen upon the trunks and large branches of trees, running nimbly round them in a spiral course, and extracting the insects on which it feeds from the crevices and recesses of the bark.

Although in many instances, some of which have already been mentioned, the two sexes are clothed in very different plumage, there are few species where the distinction is so great as is the case with the Rifle-Bird. In the male bird, the upper part of the body is deep velvet-black, with a tinge of purple in a cross light, and the breast, abdomen, and under parts are of the same velvety hue, but diversified with a fine olive-green, which stains the edges of each feather. The crown of the head and the throat are covered with a multitude of remarkably little patches of the most brilliant emerald-green, glancing with a lustrous metallic sheen that equals the well-known emerald feathers of the humming-bird, and is in vivid contrast with the velvet-black of the body. The tail is black, with the exception of the two central feathers, which are of a rich metallic green, nearly as gorgeous as those of the head and neck. The tail is black.

The plumage of the female and young male bird is strongly contrasted with these vivid colors, being as brown and homely as that of the thrush, and giving no indication of the gorgeous hues that dye the feathers of the adult male. The upper parts of the female and undeveloped male are an obscure rusty brown, the wings and tail being edged with a reddish hue. A whitish buff-streak runs through the eye, and the under surface is half-covered with many spear-headed black marks, something like the arrow-headed characters of Nineveh, caused by the black hue which tips each feather, and very partially stains their edges.

Van der Hoeven, in his "Handbook of Zoology," places this bird in the genus *Epimachus*, together with the two beautiful species which will be next described. It is separated from them by other systematic zoologists, on account of the formation of the tail, which is comparatively short, and the feathers of nearly equal length.

THE very remarkable bird which is depicted in the accompanying illustration has been very appropriately named *NEOMORPHA*, or New-form, as it exhibits a peculiarity of formation which, so far as is at present known, is wholly unique.

When this bird was first discovered, Mr. Gould very naturally considered the specimen with the straight beak to be of a different species from that which has the curved bill, and accordingly set them down in his list under different titles. In process of time, however, he discovered the real state of the matter, as will shortly be seen by his own account. This very curious anomaly in form is of considerable value to systematic zoologists, against over-estimating the importance of form in a single limb or organ. Any one would be justified in considering so decided a difference of beak as a mark of distinction between two separate species; but it must not be forgotten that there are many *genera*, not only of birds, but of every class of living beings, which have been established upon a far slighter foundation than is afforded by the straight and curved beak of these birds, which have been found to be nothing more than mere sexual distinctions of the same species.

The locality and habits of the *Neomorpha* are briefly but graphically described by Mr. Gould, in the following passage, which is taken from his "Birds of Australia":—"These birds, which the natives call *E. Elia*, are confined to the hills in the neighborhood of Port Nicholson, whence the feathers of the tail, which are in great request among the natives, are sent as presents to all parts of the island. The natives regard the bird with the straight and stout beak as the male, and the other as the female. In three specimens which I shot this was the case, and both birds are always together.

"These fine birds can only be obtained with the help of a native, who calls them with a shrill and long-continued whistle, resembling the sound of the native name of the species. After an extensive journey in the hilly forest in search of them, I had at last the pleasure of seeing four alight on the lower branches of the tree near which the native accompanying me stood. They came quick as lightning, descending from branch to branch, spreading out the tail and throwing up the wings. Anxious to obtain them, I fired; but they generally come so near, that the natives kill them with sticks. Their food consists of seeds and insects; of their mode of nidification, the natives could give no information. The species are apparently becoming scarce, and will probably be soon exterminated."

In the coloring of its plumage, Gould's *Neomorpha* is, although rather dark, a really

handsome bird when closely inspected in a good light. The general hue of the feathers is a very dark green, appearing to be black in some lights, and having a bright glossy surface. Upon each side of the neck is a fleshy protuberance, or "wattle," analogous to the wattle of the common turkey, and of a rich orange color during the life of the bird. After death, however, the bright color rapidly fades, and the full, round, fleshy form quickly contracts, so that after a while the only remnants of the wattle are to be found in two flat, shrivelled, dusky projections, which give no idea of their former shape and beauty, and look as if they had been cut out of old parchment.

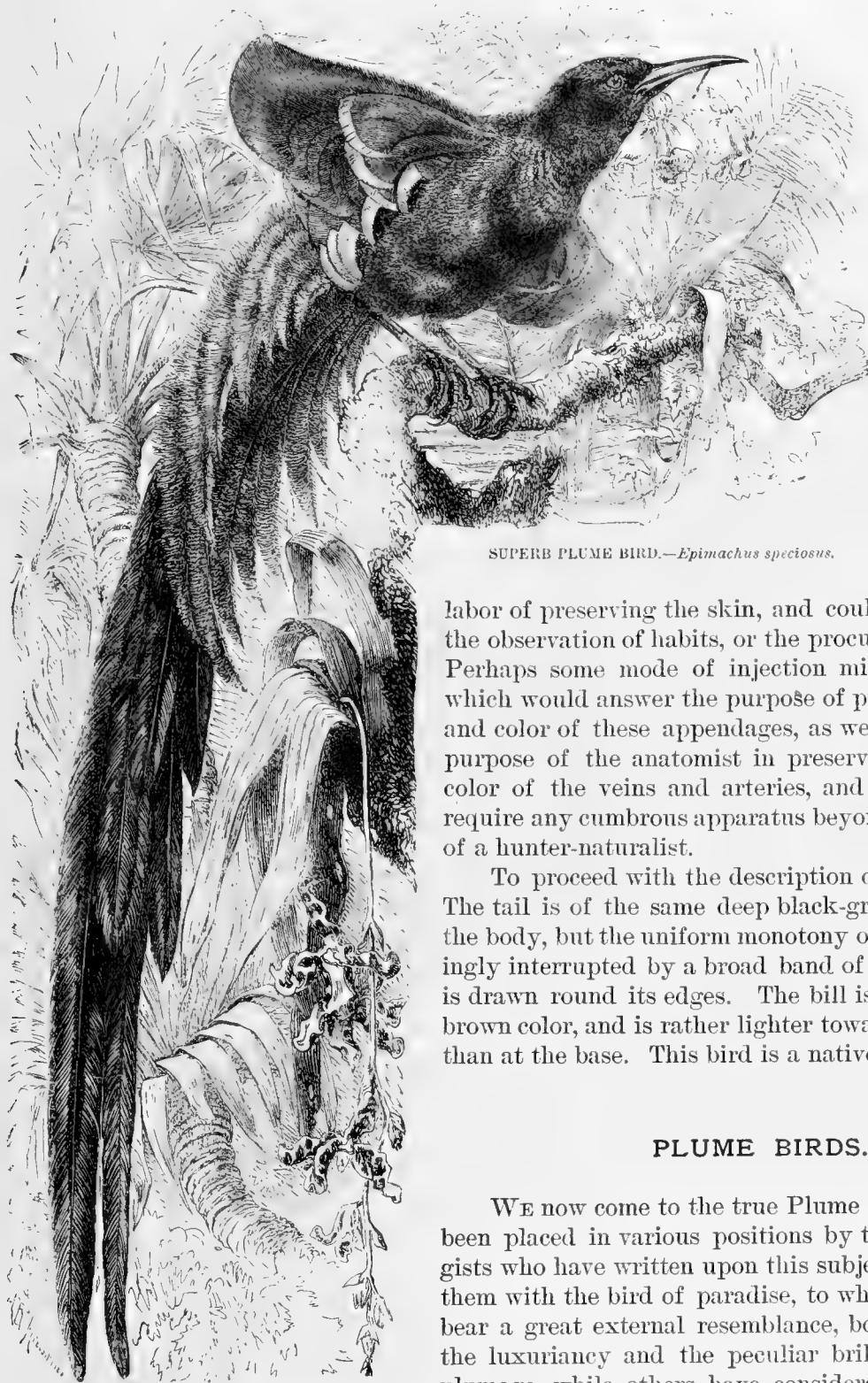


GOULD'S NEOMORPHA.—*Met. rallocha acutirostris*.

The same unfortunate result is to be found in every stuffed or dried skin, whenever the skin itself is not concealed by fur, scales, or feathers. It is very much to be regretted that some plan cannot be discovered for preserving such portions of the creatures in their original form and color, as in many cases they are extremely important in affording distinctive marks of species, and in all are so characteristic in their appearance, that their total absence, or any change in their shape and hue, entirely alters the whole aspect of the creature. At present, the only mode of getting over the difficulty is to model the organ in wax, but this is at best but a kind of charlatany; and as it depends entirely on the skill of hand and faculty of observation possessed by the individual taxidermist, is not sufficiently reliable to be of much value in a museum.

Moreover, the greater number of rare and new species are obtained when there are no means of obtaining the wax and other appliances which are needful for this mode of proceeding, and even if it were otherwise, the skins are seldom set up before they reach their final destination, on account of the space which they would occupy, and the great risk of injury they would run.

Until some method has been discovered by which these naked parts can be restored to their original shape and brilliancy, they will always present that repulsive shrivelled appearance which is too familiar to all who have compared a stuffed skin with the living, or even



SUPERB PLUME BIRD.—*Epimachus spectiosus*.

with the dead creature before decay has fairly set in. Mr. Watterton's method is the best that has as yet been put forward, but it is too tedious to be of much service even in the closet, and in the field or forest would occupy so much time that the collector would find his days taken up with the never-ending

labor of preserving the skin, and could give no time to the observation of habits, or the procuring of specimens. Perhaps some mode of injection might be discovered which would answer the purpose of preserving the form and color of these appendages, as well as it serves the purpose of the anatomist in preserving the form and color of the veins and arteries, and which would not require any cumbrous apparatus beyond the usual outfit of a hunter-naturalist.

To proceed with the description of the Neomorpha. The tail is of the same deep black-green as the rest of the body, but the uniform monotony of the tint is pleasingly interrupted by a broad band of pure white which is drawn round its edges. The bill is of a rather dark-brown color, and is rather lighter towards the extremity than at the base. This bird is a native of New Zealand.

#### PLUME BIRDS.

WE now come to the true Plume Birds, which have been placed in various positions by the different zoologists who have written upon this subject; some classing them with the bird of paradise, to which they certainly bear a great external resemblance, both on account of the luxuriance and the peculiar brilliant hues of the plumage, while others have considered them as nearer

allied to the honey-suckers, and have, in consequence, placed them in close proximity to those beautiful birds.

The SUPERB EPIMACHUS is a native of New Guinea, and is one of the most lovely creatures

that inhabit the face of the earth. Although in the size of the body it is by no means large, its plumage is so wonderfully developed, that the bird measures nearly four feet from the point of the bill to the extremity of the tail.

“To add to the singularity of this bird,” says Lesson, whose description is too vivid and life-like to be neglected, “Nature has placed above and below its wings feathers of an extraordinary form, and such as one does not see in other birds; she seems, moreover, to have pleased herself in painting this being, already so singular, with her most brilliant colors. The head, the neck, and the belly are glittering green: the feathers which cover these parts possess the lustre and softness of velvet to the eye and touch; the back is changeable violet; the wings are of the same color, and appear, according to the lights in which they are held, blue, violet, or deep black; always, however, imitating velvet. The tail is composed of twelve feathers; the two middle feathers are the longest, and the lateral feathers gradually diminish; it is violet or changeable blue above, and black beneath. The feathers which compose it are as wide in proportion as they are long, and shine both above and below with the brilliancy of polished metal.

“Above the wings the scapularies are very long and singularly formed; their points being very short on one side, and very long on the other. These feathers are of the color of polished steel, changing into blue, terminated by a large spot of brilliant green, and forming a species of tuft or appendage at the margin of the wings. Below the wings spring long curved feathers, directed upwards; these are black on the inside, and brilliant green on the outside. The bill and feet are black.”

The same author, in referring to the brilliant metallic hues of this and other birds, takes occasion to notice the iridescent effect which is produced by the different angle at which light falls on the feathers. The emerald green, for instance, will often fling out rays of its two constituent primary colors, at one time being blue-green, at another gold-green, while in certain lights all color vanishes, and a velvet-black is presented to the eye. The ruby feathers of several birds become orange under certain lights, and darken to a crimson-black at other times. This change of hue is analogous to the well-known iridescent changeableness of the nacre which lines various shells, and is owing to the structure of its surface refracting the light in different rays according to the angle at which it falls upon the feathers.

THE adult male TWELVE-THREAD PLUME BIRD presents so strong a resemblance to the birds of paradise that it might easily be mistaken for one of those gorgeous creatures, than which, indeed, it is scarcely less splendid. Not only does its plumage glow with all the resplendency of brilliant emerald-green and velvety violet-black, but the bird is also provided with a number of long thread-like plumes, which are very similar to those of the paradise birds. Like the preceding species, it is a native of New Guinea, and is, if possible, even a more beautiful creature; the white floating plumes compensating for the absence of the extremely lengthened tail.

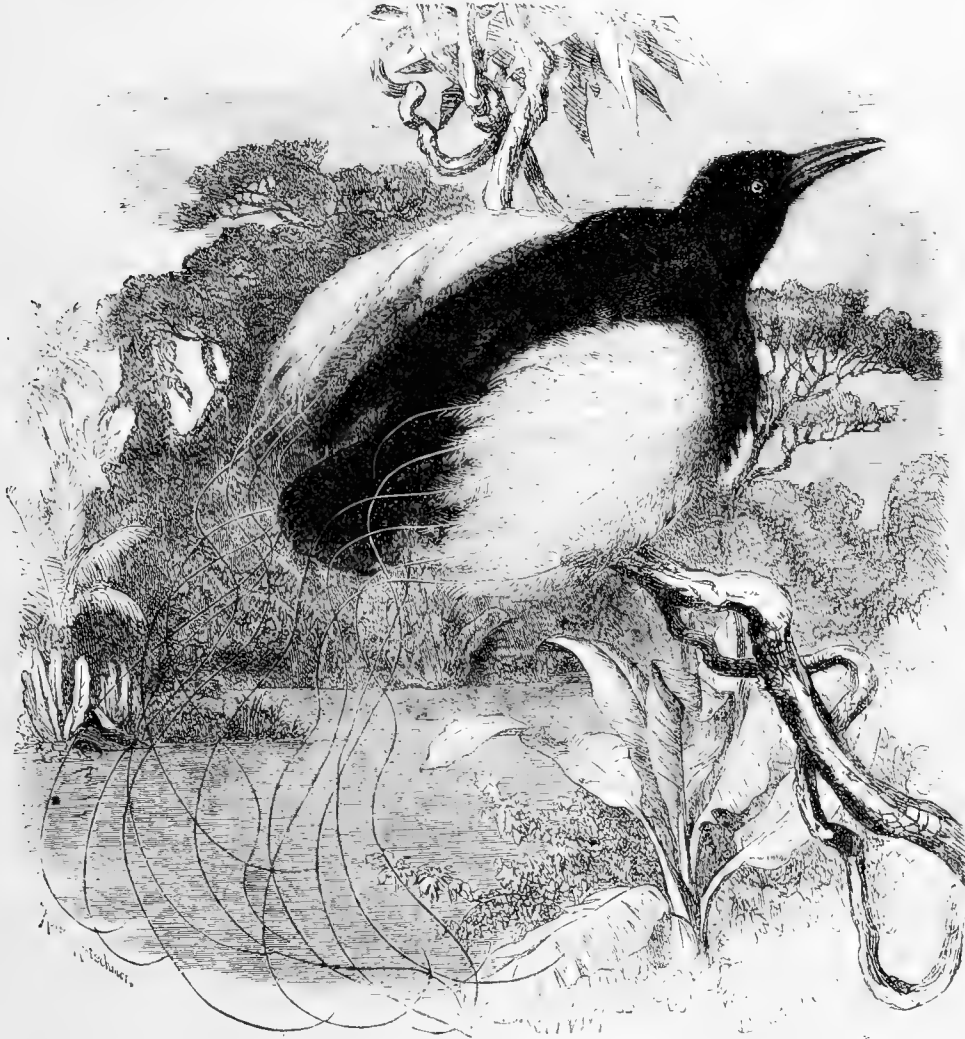
The general color of the Twelve-thread Plume Bird is rich violet, so intense as to become black in some lights, and having always a velvet-like depth of tone. Around the neck is placed a collar of glowing emerald-green feathers, which stand boldly from the neck, and present a most brilliant contrast with the deep violet of the back and wings. The tail is short in comparison with the dimensions of the bird. From the back and the rump spring a number of long silken plumes of a snowy white color, and a loose downy structure that causes them to wave gracefully in the air at the slightest breeze. Six of these lower plumes at each side are furnished with long, black, thread-like prolongations of the shaft, a peculiarity which has earned for the bird its title of Twelve-thread.

Albino specimens of this bird have been found, in which the entire plumage was of the same snowy-white as the downy plumes.

In attempting to describe these gorgeously-decorated creatures, it is impossible to avoid a feeling of dissatisfaction when mentally comparing the wondrous beauty of the beings under consideration and the imperfect words in which the writer has endeavored to portray their beauties. Even with the assistance of color, any idea that can be given of these birds would necessarily be very imperfect, and the most admirable illustrations that ever were drawn, rich

in ultramarine, carmine, and gold, would "pale their ineffectual fires" even before the stiff and distorted form of the stuffed bird. Yet that very stuffed semblance of the living creature fails egregiously in reproducing the bird as it was during life, as every one must have observed who has visited a museum.

Putting aside the inevitable shrinking and darkening of the soft parts about the head, legs, and claws, which change from their natural forms into dry and shrivelled pieces of dull, black parchment, the feathers always present an unsightly staring appearance; and there is no taxidermist whose hand, be it ever so skilful, can give to the stuffed creature the exquisite



TWELVE-THREAD EPIMACHUS.—*Seleucidés niger*.

swell and rounding of the various parts, and that air and carriage of the body which is so indicative of the character. Not only is this the case with the stuffed bird, but immediately after death the plumage loses half its beauty; for during its lifetime the bird is able, by smoothing or ruffling its plumage, to give to its form a vast variety of expressions, which sink in death to one listless aspect, which tells that life has fled. The very respiration of the bird keeps the feathers in continual motion, causing them to change their tints with every breath. Such being the case, even with the recently slain bird or the preserved skin, it may well be imagined that no artist is sufficiently skilful to delineate, no artificial color sufficiently brilliant to reproduce, and no pen sufficiently accomplished to describe, the glowing tints with any degree of success, when the drawings and the descriptions are compared with the living originals.

IN the Plume Birds the nostrils are partly covered with a number of velvet-like plumes, but in the HOOPUES they are protected by a membranous scale. The bill is long, curved, pointed at the tip, and keeled at the base. The crown of the head is surmounted by a tuft of feathers which can be raised or depressed at will. The wings are rather long, the first quill being short, and the fourth the longest, and the tail is composed of ten feathers of nearly equal length.

The common HOOPUE enjoys a very wide range of country, being found in Northern Africa, where its principal home is generally stationed, in several parts of Asia, and nearly the whole of Europe. On account of its very striking and remarkable form, it has attracted much notice, and has been the subject of innumerable legends and strange tales, nearly all of which relate to its feathery crest. One of the Oriental legends is worthy of notice inasmuch as it contains a moral exclusive of the interest of the story.

It is related that Solomon was once journeying across the desert and was fainting with heat, when a large flock of Hoopoes came to his assistance, and by flying between the sun and the monarch formed an impenetrable cloud with their wings and bodies. Grateful for their ready help, Solomon asked the birds what reward they would choose in return for their



HOOPUE.—*Upupa epops*.

services. After some consultation among themselves, the Hoopoes answered that they would like each bird to be decorated with a golden crown; and, in spite of Solomon's advice, they persisted in their request, and received their crowns accordingly. For a few days they were justly proud of their golden decoration, and strutted among the less favored birds with great



exultation, and repaired to every stream or puddle in order to admire the reflection of their crowns in the water.

But before very long, a fowler happened to see one of the promoted birds, and on taking it in his net discovered the value of its crown. Immediately the whole country was in an uproar, and from that moment the Hoopoes had no rest. Every fowler spread his nets for them, every archer lay in wait for them, and every little boy set his springle or laid his rude trap, in hope of catching one of these valuable birds. At last they were so wearied with persecution, that they sent one or two of the survivors to Solomon, full of repentance at their rejection of his advice, and begging him to rescind the gift which they had so unwisely demanded. Solomon granted their request, and removed the golden crown from their heads; but, being unwilling that the birds should be left without a mark by which they might be distinguished from their fellows, he substituted a crown of feathers for that of gold, and dismissed them rejoicing.

The Turks call the Hoopoe Tir-Chaous, or Courier Bird, because its feathery crown bears some resemblance to the plume of feathers which the chaous or courier wears as a token of his office. The Swedes are rather fearful of the Hoopoe, and dread its presence, which is rare in their country, as a presage of war, considering the plume as analogous to a helmet. Even in England the uneducated rustics think it an unlucky bird, most probably on account of some old legend which, although forgotten, has not entirely lost its powers of exciting prejudice.

The food of the Hoopoe is almost entirely of an insect nature, although the bird will frequently vary its diet with tadpoles and other small creatures. Beetles and their larvæ, caterpillars and grubs of all kinds, are a favorite food with the Hoopoe, which displays much ingenuity in digging them out of the decayed wood in which they are often found. The jetant (*Formica fuliginosa*), which greatly haunts the centre of decaying trees, is also eaten by this bird.

The nest is made in hollow trees, and consists of dried grass stems, feathers, and other soft substances. The eggs are of a light gray color, and in number vary from four to seven. They are laid in May, and the young make their appearance in June. It is worthy of notice that the beak of the young Hoopoe is short and quite straight, not attaining its long curved form until the bird has attained its full growth. The nest of the Hoopoe has a very pungent and disgusting odor, which was long thought to be caused by putrid food brought by the parent birds to their young, and the Hoopoe was therefore supposed to enact a part analogous to that of the vulture, and to perform the office of a scavenger. But, as the reader will doubtlessly have observed, the food of the Hoopoe consists chiefly of living insects, and could have no such ill effects. The real reason of the evil odor is that the tail-glands of these birds secrete a substance that is extremely offensive to human nostrils, although it is unheeded by the birds themselves.

The name Hoopoe is doubly appropriate to this bird, as it may be either derived from the crest (*huppe*), or from the peculiar sound which the bird is fond of uttering, and which resembles the syllable *hoop! hoop!* which, as Mr. Yarrell observes, "is breathed out so softly, yet rapidly, as to remind the hearer of the note of the dove." The pace of the Hoopoe is a tripping kind of walk, which is at times very quick and vivacious, and sometimes is slow and stately as if the bird were mightily proud of its crested head. When at liberty it is generally found in sequestered spots, preferring low, marshy grounds, and the vicinity of woods, because in these places it is certain to find plenty of food.

The Hoopoe is a hardy bird in captivity, and from all accounts seems to be very interesting in its habits. From the many histories of caged or domesticated Hoopoes, I select the following, as they give a very good idea of the bird and its peculiarities. The first account is written by Mr. Blyth, in a contribution to the *Magazine of Natural History*:—

"On beholding six of these birds confined in a very roomy cage, I was particularly struck with their vivacity and quick and expressive physiognomy; and a scene not a little amusing was exhibited on holding to them a morsel of meat. In a moment they all crowded eagerly to seize it, uttering a wheezing cry, and following my hand with rapidity about the cage, one or two of them sometimes clinging to the wires; and when at length two or three pieces were

given to them, the scramble, though they could not have been very hungry, and the subsequent struggle for possession, was maintained with a pertinacity that was truly surprising. Two might be seen tugging with might and main at the same morsel, till wearied with repeated efforts they would give over for awhile, still retaining, however, their hold, to resume the contest after an interval of rest; and it was not unusual on such occasions for a third individual, generally a smaller and weaker bird, to quietly watch the issue of the contest, when it would endeavor to deprive the victor of its prize. Certainly, I never saw birds struggle so vigorously before, nor pull with such determined force and energy, tumbling over not unfrequently from the violence of their efforts."

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## SUN-BIRDS.

THE beautiful and glittering SUN-BIRDS evidently represent in the Old World the humming-birds of the New. In their dimensions, color, general form, and habits, they are very similar to their brilliant representatives in the western hemisphere, although not quite so gorgeous in plumage, nor so powerful and enduring of wing. They are termed Sun-birds, because the hues with which their feathers are so lavishly embellished gleam out with peculiar brilliancy in the sunlight. The common sun-beetles, that run about the ground in the hot weather, their glittering surface flashing rainbow-tinted light in every direction, have earned their popular and expressive name in a similar manner.

These exquisite little birds feed on the juice of flowers and the minute insects that are found in their interior, but are not in the habit of feeding while on the wing, hovering over a flower and sweeping up its nectar with the tongue, as is the case among the humming-birds. The Sun-birds generally, if not always, perch before they attempt to feed, and flit restlessly from flower to flower, picking the blossoms in rapid succession, and uttering continually a sharp, eager cry, that indicates the earnestness of their occupation. In accordance with their peculiar habits, the feet and legs are very much stronger than those of the humming-birds; their wings are shorter, rounder, and less powerful, and their plumage is not so closely set. Moreover, the feathers, although bedecked with the most brilliant of hues, lack, except in certain spots, such as the crown of the head and the throat, the scintillating radiance of the humming-bird, and do not possess in an equal degree the property of changing their hues with every movement.

The brilliant colors of the Sun-birds belong, as a general rule, only to the male sex, the female being comparatively sober in her plumage, possessing neither the beauty of form nor color which is so conspicuous in the other sex. Even in the male bird, the gorgeous plumage has but a temporary existence, becoming developed at the commencement of the breeding season, and being lost at the moult which always follows the rearing of the young. At all other seasons of the year, the male birds are nearly as simply clothed as their mates, and even the glittering, scaly feathers of the head and throat are replaced by a dull brown plumage, hardly distinguishable, except by difference of structure, from the surrounding feathers of the neck. The change of color and form is so great in these birds, that many zoologists have described the immature male, the adult male, and the female as three distinct species, and have consequently wrought great confusion among their ranks.

The young male birds are not unlike the female, but may be known by one or two feather structures, which will be presently mentioned; and it is a rather curious fact that the adult male always returns after the breeding season to the plumage of immaturity. Some writers have questioned the truth of this statement, but without sufficient reason. As soon as the time arrives when the birds begin to choose their mates, and the brilliant feathers have fully developed themselves, the male Sun-bird becomes very animated, and makes the most of his gorgeous plumage, puffing up the feathers of the neck and head, so as to make them flash

in the sun's rays, as if conscious of the fascination which his brilliant costume must exert upon the susceptible hearts of the gentler sex.

The Sun-birds usually make their nests in the hollows of decaying trees, or within the centre of thick brushwood. In many cases the nest is concealed with great care; and in some instances is constructed with consummate art. The material of the nest is generally composed of very fine fibres, interwoven and lined with the soft cottony down that is found in the seed vessels of many plants, and ingeniously set round with various lichens, so as to give it a close resemblance to the tree in which it is placed. One species has even been known to make a thick spider's web the foundation of its nest, and to cover it so completely with little bits of moss, lichens, paper, cloth, and all kinds of miscellaneous substances, as to destroy its nest-like appearance, and make it look like a chance bundle of scraps entangled in the branches.

When taken young, the Sun-birds are very susceptible to human influence, rapidly becoming tame, and learning to fly about the room and take their food from the hand of their owners with charming familiarity. It has already been mentioned that the Sun-bird utters a shrill, sharp whistle, while engaged in seeking food. This, however, is not their only cry, as many of them possess considerable musical powers, their cry, although feeble, being sweet and agreeably undulated. It is thought by many observers that the Sun-birds, while flitting from flower to flower, aid in the work which is so efficiently carried out by bees and similar insects, and help to carry the fructifying pollen from one blossom to another.

AMONG these birds the FIERY-TAILED SUN-BIRD, although not the largest, is yet one of the most striking and beautiful in form and color.

This most lovely little creature is an inhabitant of India, being found near the foot of the Himalaya mountains, and most plentifully near Nepâl. In dimensions it is extremely small, owing to the great difference which exists, even in adult males, in the length of the central feathers of the tail, the disparity often amounting to two inches, so that the length of the bird may be from three to five and a half inches. The forehead and the top of the head are brilliant steel-blue, and the neck, the back, and the upper tail-coverts are the most beautiful scarlet vermillion, diversified by a broad patch of bright yellow upon the bend of the back. The two long central feathers of the tail are also bright vermillion and the side feathers are brown, edged with the same brilliant hue. The upper surface of the wings is olive-brown, each feather being brown and edged with olive; the under surface of the wing is grayish white, worked here and there with very pale brown. The breast is beautiful gold-yellow, with a wash of crimson in the centre; and the abdomen, and remainder of the under parts, are rather pale olive-green. The bill is blackish-brown.

Before and after the breeding season the Fiery-tailed Sun-bird assumes a more sober



FIERY-TAILED SUN-BIRD.—*Nectarinia metallica*.

plumage, the general color being olive, with a slight mark of pale scarlet upon the back. The crimson patch on the breast vanishes, and the tail-feathers are all of equal length. The female is olive-green above and greenish-yellow below, and there is a slight mark of red upon the base of the tail.

THE COLLARED SUN-BIRD is an inhabitant of many parts of Africa, stretching from the northern portions of that continent as far as the western coasts. It is extremely plentiful in the larger forests of the Cape and the interior, but there is very little information concerning



COLLARED SUN-BIRD.—*Nectarinia chalybea*.

its habits, saving that they resemble those of its relations. The nidification of this species differs according to the locality, for it places its nest in the interior of hollow trees wherein it resides in the forests, and is content with the shelter of a thick bough when there are no decaying trees within reach.

The male Collared Sun-bird is a most beautiful little creature, bedecked with glowing tints of wonderful intensity. The general color of the upper parts of the body and breast is a rich golden-green, the upper surface of the wings and tail being blackish-brown with green reflections. Across the breast are drawn several colored bands, which have earned for the bird its popular and expressive name, as all names should be. A narrow band of bright steel-blue runs across the upper part of the breast, being rather wide in the centre and narrowing rapidly towards the sides of the neck. Below this blue band runs a broad belt of rich carmine, and immediately below the carmine is a third narrow band of bright golden-yellow. From the sides of the breast proceed several small feathery plumes of the same golden hue. The remainder of the abdomen is grayish-brown, and the upper tail-coverts are violet-purple.

The female is rather less in dimensions than her mate, and is very sober in her attire, wearing a suit of uniform olive-brown, darker upon the wings and tail, and very pale behind. The total length of this species is rather more than four and a half inches.

THERE is another species of Sun-bird which closely resembles the last-mentioned bird in its coloring, and is often mistaken for it. This is the GREATER COLLARED SUN-BIRD (*Nectarinia afra*), a rather larger bird, measuring at least one inch more in total length than the preceding species. It is also an inhabitant of Africa, but is seldom seen in the extreme south of that country, preferring the deep forests of the interior, and rarely descending to the plains. Its nest is made in some hollow tree, and the eggs are four or five in number and white in color, plentifully variegated with tawny markings. It may be distinguished from the common Collared Sun-bird by the greater amount of the bronze-green hue, and by the shortness of the blue collar.

THE JAVANESE SUN-BIRD is a native of the country from which it derives its name. It is a very pretty little creature, although its colors are not so resplendent as in several of the species. The upper parts of the body are shining steely-purple, and the under surface is olive-yellow. The throat is chestnut, and a bright violet streak runs from the angle of the mouth to the breast.

THE GOALPORAH SUN-BIRD (*Nectarinia goalpariensis*) is also worthy of a passing notice.

This beautiful species is an inhabitant of several parts of Asia, and is rather plentiful in and about Nepál. In dimensions it is equal to the preceding species, the adult male measuring about five and a half inches in length. The nest is beautifully constructed, and is of the pendulous order. The food of this bird consists chiefly of minute insects, spiders, and various larvæ, chiefly those of flies. It lives mostly in the depths of the densest forests, where it may be found in tolerable numbers by those who choose to take the trouble to search after it.

In the plumage of this pretty bird, red is the prevailing color. The crown of the head is rich golden-green, and the nape of the neck, the breast, and scapulæ are of a dazzlingly brilliant scarlet. The long central tail-feathers are of a rich green, and when closed, as is the case while the bird is at rest, completely conceal the bright yellow tint of the feathers below. The remainder of the tail is brownish black, and all the plumage of the lower part of the back is loose and downy in its structure.

Some of the tribes of the Sun-birds, and their behavior when in captivity, are well recorded in the following description of some tame Sun-birds, by Captain Boys, quoted in Gould's "Birds of Asia." The species which is described is another Indian species, the Asiatic Sun-bird (*Nectarinia asiatica*), called by the natives "Shukurkhor," or sugar-eater:—

"In 1829 I slightly wounded a male in the bastard wing, secured and brought it home. By some neglect it was unthought of for four days, when, on looking into the bag in which it had been placed, I found that it was not only alive, but that the wing had completely cicatrized. I should observe, however, that the broken part of the wing had been taken off with a pair of scissors immediately after the bird was brought home. I placed it in a cage, and succeeded in keeping it alive for several weeks by feeding it on sugar and water, of which it took great quantities, but, owing perhaps to a want of variety in its food, it became thinner and thinner until it died. During its captivity it was very sprightly, and from the first day readily fed itself by dipping its tongue into the dish of syrup with which it was supplied."

It is probable that the poor little bird died, as was supposed, from the effects of its diet. A similar story is told of some of the humming-birds, by Webber, where the little creatures pined after long feeding upon syrup alone, but, on being permitted to fly at liberty, immediately set to work upon the little garden spiders, and soon recovered their health and brilliancy. This need of animal food seemed to be periodical and irresistible.

In the same account, a portion of which has just been extracted, Captain Boys asserts that the nest of the Asiatic Sun-bird is very rudely made, whereas Mr. Layard tells us that it is constructed in a remarkably neat manner, and that it is often suspended from a twig in such a manner that the spiders cover it with their webs, and make it almost invisible.

THE BLUE-HEADED HONEY-SUCKER is a beautiful bird and a good specimen of its genus. It is an inhabitant of Brazil, where it is extremely common, and by the bright gorgeousness

of its plumage, and the restless activity of its movements, adds much to the beauty of the wondrous scenery among which it dwells. It is found spread over the whole of Brazil, and may always be found haunting the blossoming trees and plants, dashing to and fro with its glancing flight, hovering with tremulous wing over the flowers while undetermined in its choice, and plunging its long beak eagerly into their newly-opened blossoms, where it finds its food. It is not known to feed while on the wing, as is the case with the humming-birds, but perches near or upon the flower, and clings with its strong little feet while taking its meal.

The Blue-headed Honey-sucker derives its name from the azure-blue which decorates its head, and which is very changeable in different lights. The throat, the back, the tail, and the wings are black, except that the quill-feathers are edged with blue. The female bird does not possess the beautiful tints of her mate, the greater part of her plumage being green, tinged with blue upon the head and the scapularies; the throat is gray. This bird is known by several other titles, such as the Cayenne Warbler, the Blue-headed Warbler, and the Blue-headed Creeper.

LARGEST of all the group, the MALACHITE SUN-BIRD has long attracted the attention of ornithologists, on account of its great comparative size and its beautiful plumage.

It is one of the African species, being an inhabitant of the Cape of Good Hope, where it remains throughout the entire year, and is in the habit of frequenting the gardens, and soon becomes familiar with the proprietors, provided that it be not disturbed. Sometimes the Malachite Sun-birds take a violent fancy to some particular shrub or tree, and may be seen in flocks of forty or fifty in number congregating upon its branches and amusing themselves among its blossoms. Day after day these birds may be seen in the same spot, attracted by some irresistible though obscure charm resident in the tree which they favor. The nest of this species is composed of very tiny twigs covered with moss, and contains four or five green eggs.

The title of Malachite Sun-bird has been given to this creature on account of the brilliant malachite green of its plumage.

The male bird when dressed in full nuptial costume is a remarkably handsome bird, and is nearly double the length of any other species, often exceeding nine inches in total length. The whole of the upper surface is rich golden-green marked with a reddish bronze. The feathers of the throat and forehead are of the same hue, but of so deep a tone that they appear to be velvety-black at first sight, and are so constructed that they have a velvet-like feel to the touch as well as to the sight. Whenever the bird moves, even by the act of respiration, waves of bright hues seem to ripple upon its surface, caused by the peculiar coloring of the feathers, which are black at their bases and colored at their extremities. The wings and tail are black, and the secondaries and wing-coverts are edged with green and violet. There is a tuft of bright yellow feathers under each shoulder.

The female is much smaller than her mate, and is of a dull olive-brown, except the exterior feathers of the tail, which are edged with white.

Among other long-tailed Sun-birds may be mentioned *Nectarinia pulchella*, which may be known by its green-edged black tail-feathers and the bright double collar of carmine and golden-yellow that runs across the chest. Another species, also long-tailed, *Nectarinia platúra*, is remarkable for the brilliant golden-yellow of the breast and abdomen, and the rich violet-purple of the upper tail-coverts.

THE beautiful little DICÆUM, although very common throughout the whole of Australia, and a remarkably interesting little bird, was, when Mr. Gould wrote his animated description, so little known among the colonists that there was no popular name for the bright little creature.

This tiny bird is fond of inhabiting the extreme summits of the tallest trees, and habitually dwells at so great an elevation that its minute form is hardly perceptible, and not even the bright scarlet hue of the throat and breast can betray its position to the unaccustomed eye of

a passenger below. The song of the *Dicæum*, although very sweet and flowing, is very soft and faint, and seems to be an inward warbling rather than the brilliant melody which is flung so energetically from the vocal organs of many singing-birds. The little bird, however, is possessed of considerable endurance, for its strain, although weak, is long continued. The *Dicæum* is mostly found among the thick foliage of the *Casuarinæ*, and Mr. Gould relates that he frequently saw it flitting about the branches of a remarkably beautiful parasitic plant termed scientifically the *Loranthus*, which it seems to visit either to eat the soft viscid berries, or for the purpose of preying upon the little insects that come to feed on the flowers. Mr. Gould prefers the latter supposition.

The flight of the *Dicæum* is very quick and darting, and it makes more use of its wings and less of its feet than any of the insect-hunting birds. The nest is remarkably pretty, being woven as it were out of white cotton cloth, and suspended from a branch as if the twigs had been pushed through its substance. The peculiar purse-like shape of the nest attracts attention. The material of which it is woven is the soft cottony down which is found in the seed-vessels of many plants. The eggs are four or five in number, and their color is a dull grayish-white profusely covered with minute speckles of brown.

The two sexes differ considerably in the coloring of their plumage, the male bird being much more brilliant than his mate. The head, back, and upper parts of the adult male are deep black with a beautiful steely-blue gloss, the sides are brownish-gray, and the throat, breast, and under tail-coverts are a bright glaring scarlet. The abdomen is snowy-white, with the exception of a tolerably large black patch on its centre. The female is more sombre in her apparel, the head and back being of a dull sooty-black, and the steel-blue reflection only appearing on the upper surface of the wings and tail. The throat and centre of the abdomen are buff, the sides are pale grayish-brown, and the under tail-coverts scarlet, of a less brilliant hue than in the male. In its dimensions the *Dicæum* is hardly so large as our common wren.

ANOTHER species belonging to the same genus, but an inhabitant of a different part of the world, is equally remarkable for its minute form and the bold richness of its colors. This is the RED-BACKED DICÆUM (*Dicæum cruentatum*) of Asia.

This beautiful wee bird is plentiful in India, extending over a wide range of country, and being found in the vast tracts which reach from Calcutta to Assam on the east, and as far as Malacca on the north. Like the Australian *Dicæum*, it resides on the summits of the loftiest trees, and on account of its quite small size is not very often seen, and even if seen is so hard to shoot that it is but seldom killed, except by those who make it their business to collect specimens. The male bird is remarkable for a broad line of the brightest scarlet which extends from the top of the head along the back, and reaches nearly to the extremity of the tail. The remainder of the upper surface is black, marked with green upon the wing-coverts, and the lower parts are of a light buff.

NEARLY allied to the preceding species is the FIRE-BREASTED MYZANTHE (*Myzanthus ignipectus*), a bird which is remarkable as being the smallest bird of India. So very small is this beautiful little bird, that an adult specimen is hardly two and a half inches in total length, and weighs only three and a half drachms. In its habits it is very like the *Dicæum*, frequenting the tops of trees, and keeping itself well out of sight. The general color of this bird is a dark glossy green above and buff below. Upon the chest there is a bold patch of bright crimson, and immediately below is a curious little black mark something like a frond of seaweed in shape. It is an inhabitant of Nepâl.

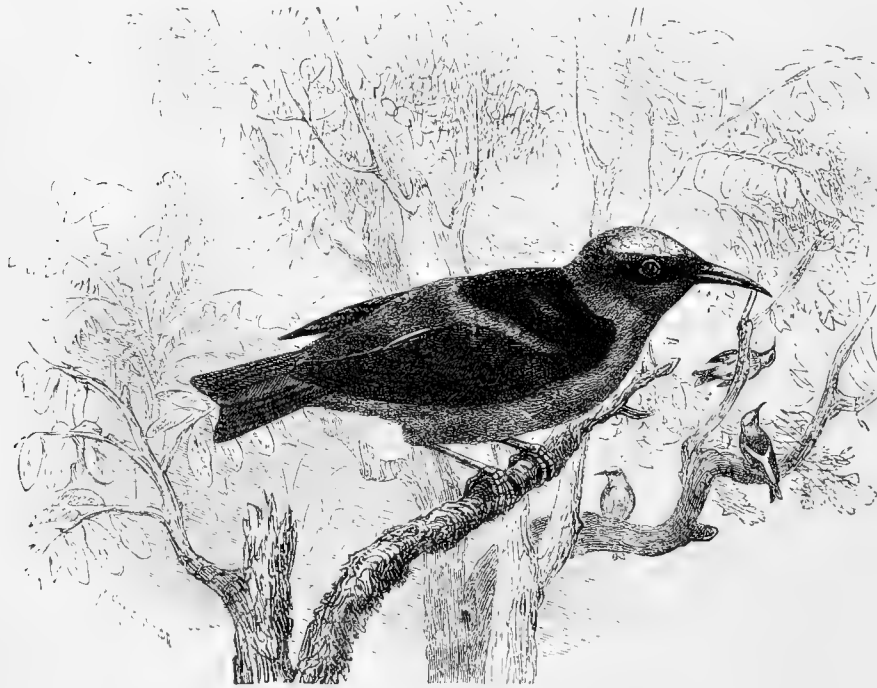
THE two following species of birds are of small size, but are remarkable for the extreme beauty of the plumage, which glows with the most brilliant hues, but is not endowed with the peculiar changing tint of the *Epimachi* and humming-birds.

The first of these creatures, the AZURE CÆREBA, is a most glowing little bird, its feathers being deeply and gorgeously dyed with azure, verditer, and velvet-black, arranged in the

following bold and striking manner. The crest is of a brilliant verditer-blue, possessing a metallic splendor, and almost flashing with emerald rays when placed in a strong light. A black velvet-like patch of feathers is placed on the back of the head and neck, affording the most decided contrast with the light plumage of the crest. Another but larger patch of the same deep hue occurs upon the shoulder, the wings are also black, and a black streak is drawn from the angle of the mouth towards the back of the neck. With these exceptions, the whole of the body is a bright azure.

This species is an inhabitant of Cayenne, Guiana, and the neighboring localities. It is a little bird, hardly larger than a common sparrow.

The Azure Cæreba may generally be found upon the various flowering trees and shrubs of its native land, where it occupies its time in a perpetual search after the tiny insects that conceal themselves within



AZURE CÆREBA.—*Cæreba cyanea*.

the newly-opened blossoms.

In its nesting and in other parts of its economy it is a most singular bird. The nest is of the pensile order, being neatly woven upon the extremity of some slender twig, which sways to and fro even with the trifling weight of the mother and her tiny brood, and will in nowise bear the heavy bodies of the various snakes and lizards that abound among the branches of the trees, and keep up a relentless persecution of young nestlings and

eggs. The shape of the nest is not unlike that of a large "jargonelle" pear, the lower extremity being produced into a long tube with the mouth below, and the eggs placed in a large rounded portion of the nest. No predaceous reptile could venture itself into so formidable a stronghold, and any noxious insect that might make its way through the tunnel would soon be snapped up by the watchful parent. The substance of the nest is composed of very slender grasses and fibres, and the entire structure is put together with a delicate firmness that human fingers would strive in vain to imitate.

It is said, upon very good authority, that the young of the Azure Cæreba are blind when they emerge from the egg-shell, and that they do not attain the full power of vision until they are able to fly and to get their own living.

THE SCARLET DREPANIS is well worthy of notice, not only on account of the position which it holds in the present system of ornithology, but by reason of the extreme value which is set upon it, and upon other species of the same genus, by the natives of the country where it dwells.

The color of this bird is, as its name implies, scarlet upon the greater part of its plumage, the wings and tail being black, so that the two contrasting tints have a remarkably good effect. It is an inhabitant of the Sandwich Islands, and is in very great favor with the natives, who employ its plumage in the manufacture of those wonderful feather mantles and helmets which cannot but excite the wonder of all who ponder upon the singular amount of



mechanical skill, dogged perseverance, and true artistic taste that has been employed in their manufacture.

The mantles are made with the greatest care, the precious feathers being so judiciously disposed that none are wasted, while, at the same time, they cannot be discomposed by any movement of the wearer so as to betray the groundwork on which they are woven. Their colors, too, are arranged with great artistic feeling, and produce a very brilliant effect without offending the eye, or appearing to be needlessly gaudy. The helmets, which are in like manner decorated with the glowing feathers of these beautiful birds, are even more wonderful than the mantles, as they are not only skilfully constructed, but their form is absolutely classic in its graceful simplicity, and recalls to the spectator the best efforts of Greek art.

These mantles are so extremely beautiful in the soft flowing grace of their folds, are so light to the wearer, and so exquisitely brilliant in color, that they would soon be in great request in the world of fashion, were they once introduced by one of the leading votaries of that capricious deity. The feather head-dress, too, would be so soft, light, and brilliant, that it would soon vanquish all other costumes, and reign supreme.

The birds of this genus are very gregarious, delighting to associate in large flocks, and haunting the flower-bearing plants for the purpose of feeding upon the sweet juices and tiny insects which are found within the blossoms. In feeding they thrust their long bill and tongue to the very bottom of the flowers, and greatly resemble the bees in that respect. The natives take advantage of their flower-loving and gregarious habits, and by setting snares in the spot which they love best to haunt, contrive to immolate them in considerable numbers. As the Scarlet Drepanis is but a small bird, being hardly larger than the *Cæreba*, and as neither the tail nor wing appear to be employed in the structure of the mantles and helmets, it is evident that a vast number of these beautiful little creatures must perish before one chief can be gratified with the completion of a single mantle or the adorning of a single helmet.

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## HONEY-EATERS.

THE true HONEY-EATERS form a very numerous group of birds, all of which are graceful in their forms and pleasing in the color of their plumage, while in some instances the hues with which they are decorated are so bright as to afford ground for classing them among the really beautiful birds. They all feed on similar substances, which, as indicated by their name, consist chiefly of honey and the sweet juices of flowers, although they also vary their diet by insects and other small living beings.

THE NEW HOLLAND HONEY-EATER is a remarkably pretty bird, the whole of its body being covered with black, white, and yellow markings, which stand out in bold contrast to each other. The top of the head is black, and a number of little white feathers are gathered on the forehead. The sides of the head and neck are marked very conspicuously with three streaks of pure white, one of which is drawn over each eye, as if it were intended to stand in the place of an eyebrow, another passes from the nostrils towards the back of the neck, like a moustache, and the third is seen on the side of the neck, so that its whole aspect presents a sufficiently curious appearance. The body and upper part of the wings are deep brown-black, diversified with a narrow line of pale yellow upon the outer edge of each quill-feather, and a slight edging of white around their extremities. The tail is of the same brown-black as the body, edged with yellow, and tipped with white on the under surface. The lower parts and abdomen are grayish-white, profusely covered with dashes of black.

THE WHITE-PINIONED HONEY-EATER is found, according to Mr. Gould, upon the north coast of Australia, and is very plentiful, especially near the settlement at Port Essington.

In its habits it is partly gregarious, being seen in little flocks, perhaps families, of six or seven in number, flitting about the tops of lofty trees and ever in active motion. Partly on account of the great elevation at which it loves to dwell, and partly because of the extreme shyness and wariness of its disposition, the gunner finds considerable difficulty in approaching within gunshot, so that, although the bird is so common, it is not very often shot. In its flight it is strong and steady, not contenting itself with mere flittings from tree to tree, but on occasion launching boldly into the air, and shaping its course for some distant point. In taking these aerial journeys it always commences by rising perpendicularly to a very great height, and then, after having settled the direction in which it intends to go, it shoots off with a swift and steady flight.

ANOTHER of these birds, the GARRULOUS HONEY-EATER, so named on account of its singularly talkative propensities, is a native of Van Diemen's Land and New South Wales, in both of which localities it is very common.

It enjoys, however, but a very limited range, being contained within certain boundaries with such remarkable strictness, that in some cases it is found in great numbers on one side of a river, while on the other side not a single bird can be seen. Those which inhabit Van Diemen's Land are rather larger than those of New South Wales, the greater size being probably caused by a greater profusion and more nourishing properties of the food. The Garrulous Honey-eater generally takes up its habitation among the thick forests of eucalypti that are found upon the plains and the hills of low elevation, and there passes a very lively existence. Its food consists of the sweet nectar of flowers, which it procures after the manner of Honey-eaters in general, by plunging its long tongue into the depths of the flowers, and licking up their luscious store. It also feeds upon various insects, being always ready to eat those minute creatures which inhabit the flowers, and delighting also in chasing the beetles and larger insects as they run upon the ground at the foot of the eucalypti.

ANOTHER very curious species of Honey-eater is placed in the same genus, and attracts admiration, not so much on account of its plumage or its interesting habits, as on account of its voice, which is so bell-like in its tone that the colonists know it by the popular name of BELL BIRD. This species must not, however, be confounded with the Bell Bird, or Arapunga, of tropical America, which belongs to a totally different tribe. Moreover, the voice of the two birds is very different; that of the Arapunga resembling the slow, solemn tolling of a church-bell, while that of the Australian Bell Bird is wonderfully similar to the sharp, merry tinkle of the sheep-bell. The scientific name for the Australian Bell Bird is *Myzantha melanophrys*.

In his "Gleanings of a Naturalist," Dr. Bennett speaks as follows of this curious little bird:—

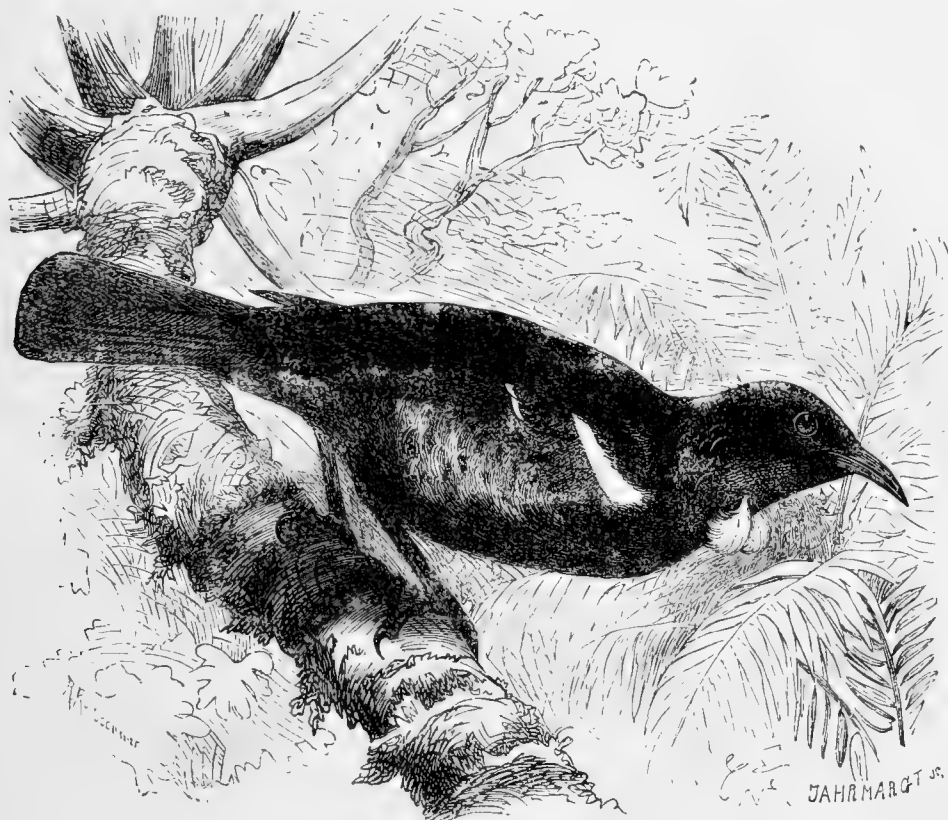
"Among the dense forest trees skirting the margins of the rivers, the note of the Bell Bird is almost incessantly heard; it is sometimes uttered by a solitary bird, and at others by many congregated together: this I observed on the banks of the Nepean river, in October, when I saw them in greater numbers than usual. The Bell Bird is named *Gibulla* by the blacks of the Murrumbidgee district. The peculiar tinkling sound made by this little bird is heard with delight by the wearied and thirsty traveller, as an indication of water near at hand. I have also heard these birds utter loud, garrulous notes. At the Nepean they sported among the branches of the trees in search of insects, and I remember that the tinkling note was uttered while they were quietly perched upon a branch, but the garrulous notes were used only when they were seen flitting in sportive gaiety amid the branches of the trees."

AMONG this group of birds the POË BIRD, TUE, or PARSON BIRD, is one of the most conspicuous, being nearly as remarkable for its peculiar coloring as the rifle bird itself, although the hues of its feathers are not quite so resplendently brilliant as in that creature.

The Poë Bird is a native of New Zealand, where it is far from uncommon, and is captured by the natives for the purpose of sale. Many individuals are brought over to Sydney, where, according to Dr. Bennett, they are kept in cages, and are very amusing in their habits, being

easily domesticated, and becoming very familiar with those who belong to the household. Independently of its handsome and rather peculiar color, which make it very effective in a room, it possesses several other qualifications which render it a very desirable inhabitant of an aviary. Its native notes are very fine, the bird being considered a remarkably fine songster, and it also possesses the power of mimicking in a degree surpassing that of the common magpie or raven, and hardly yielding even to the famous mocking-bird himself. It learns to speak with great accuracy and fluency, and readily imitates any sound that may reach its ear, being especially successful in its reproduction of the song of other birds.

While at liberty in its native land it is remarkable for its quick, restless activity, as it flits rapidly about the branches, pecking here and there at a stray insect, diving into the recesses



POË BIRD.—*Prosthemadera novaeseelandica*.

of a newly opened flower, and continually uttering its shrill, sharp whistle. Although one of the large group of Meliphagidæ or Honey-eaters, the Poë Bird feeds less upon honey than upon insects, which it discovers with great sharpness of vision, and catches in a particularly adroit manner. It will also feed upon worms, and sometimes varies its diet by fruits.

In New Zealand it is often killed for the sake of its flesh, which is said to be very delicate and well-flavored, its beautiful feathers and interesting character affording no safeguard against the voracity of hungry New Zealanders; although, to borrow the expression of Dr. Bennett when speaking of the nautilus, such delinquency is enough to put any scientific naturalist into a fever.

The general color of the Poë Bird is a very deep metallic green, becoming black in certain lights, and having a decided bronze reflection in others. The back is deep brown, also with a bronze reflection, and upon the shoulders there is a patch of pure white. On the back of the neck the feathers are long and lancet-shaped, each feather having a very narrow white streak along its centre. From each side of the neck depends a tuft of snowy curling downy feathers, spreading in fan-like fashion from their bases. This creature is called the Parson Bird because these white tufts are thought to bear some resemblance to the absurd parallelograms of white

lawn that are denominated "bands," and which flutter beneath the chins of ecclesiastics in their official costume. The brown tint of the lower part of the back changes to steely-blue, and the tail is brown, "shot" with the same beautiful tint. The quill-feathers of the wings are brown, edged with blue, and the whole under surface is reddish-brown.

In size the Poë Bird equals a large blackbird or a small pigeon, being about twelve inches in total length. The long generic title of *Prothemadéra* is formed from two Greek words—the former signifying an appendage, and the latter the neck—and is given to the bird in allusion to the white tufts of feathers which depend from the neck.

THE very quaint and rather grotesque FRIAR BIRD, which we may notice, is an inhabitant of Australia, and is very common in the southern parts of that continent, although at present it has not been seen in Van Diemen's Land.

By the colonists it is known by a variety of names, some relating to its aspect and others to its voice. Thus it is named the Friar Bird, because the bare, oddly-shaped head, with its projecting knob upon the forehead, is considered as resembling the bare, shaven poll of the ancient friar. Another analogous name is the MONK BIRD. Another name is LEATHER-HEAD, a title which refers to the dark leathery aspect of the whole head, which is as rigid in outline and as dark in color during life as after death. On account of its peculiar voice, it is also known by the names of "PIMLICO," "POOR-SOLDIER," or "FOUR-O'CLOCK," as its cry is said to resemble these words. The resemblance, however, cannot be very close, as neither of the words which it is supposed to utter could be mistaken for the other, so that the Friar Bird cannot be very remarkable for the distinctness of its articulation. By the natives it is called Coldong.

The Friar Bird is possessed of unextinguishable loquacity, delighting to get upon the top-most branch of some lofty tree, and there chatter by the hour together at the top of its loud and peculiar voice, as if it were desirous of attracting attention to its powers of elocution. Among the branches it is extremely active, traversing them in all directions with great ease, and clinging to their rough bark by the grasp of its powerful toes and curved claws. So strong is the grip of the foot, that the bird may often be seen hanging from a branch suspended only by a single foot, while it is engaged in peering into the recesses of the bark, in search of the little insects that may be concealed under its rough surface.

Like all the honey-birds, it is fond of feeding upon the nectar and pollen of flowers, generally preferring those of the eucalyptus, or gum-tree, as it is popularly termed, and also delights in fishing out the little insects that are to be found in the depths of all honey-bearing flowers. It does not, however, disdain to feed upon the larger beetles and other insects that take up their residence under the flakes of bark, and is also known to eat various kinds of berries.

ANOTHER common and rather striking example of the Honey-eaters is the WATTLED HONEY-EATER, or BRUSH WATTLE BIRD, of Australia.

This pretty bird is spread over the whole of Southern Australia, and is one of the best known of the birds belonging to that country. It may generally be found upon lofty trees, and, like others of the same group, especially haunts the eucalypti for the purpose of feeding upon the juices of the flowers. It always chooses the most recently opened blossoms, as they are not so likely to be rifled of their sweet stores as those which have been exposed to the attacks of the honey-eating insects and birds. The method of feeding is the same as that which is pursued by the other Honey-eaters, viz., by plunging the long bill and slender tongue into the very depths of the blossoms, and brushing out their contents. It also has a great affection for the flowers of the *Banksia*, and is sure to be found wherever these plants are in blossom, thereby doing good service to the intending purchaser of land; for the *Banksia* always grows upon poor soil, so that, according to Mr. Gould, the harsh cry of the Wattle Bird is a trusty indication to the wary settler that the land on which it is heard is not worth purchasing.

## HUMMING-BIRDS OR TROCHILIDÆ.

“Bright Humming-bird of gem-like plumage,  
By western Indians ‘Living-Sunbeam’ named.”—BAILEY, *Mystic*.

THE wonderful little HUMMING-BIRDS are only found in America and the adjacent islands, where they take the place of the sun-birds of the Old World. It is rather remarkable, that, as yet, no Humming-birds have been discovered in Australia.

These little winged gems are most capricious in their choice of locality, some being spread over a vast range of country, while others are confined within the limit of a narrow belt of earth, hardly more than a few hundred yards in width, and some refuse to roam beyond the narrow precincts of a single mountain. Some of these birds are furnished with comparatively short and feeble wings, and, in consequence, are obliged to remain in the same land throughout the year, while others are strong of flight, and migrate over numerous tracts of country. They gather most thickly in Mexico and about the equator, the number of species diminishing rapidly as they recede from the equatorial line.

The name of Humming-birds is given to them on account of the humming or buzzing sound which they produce with their wings, especially while they are hovering in their curious fashion over a tempting blossom, and feeding on its contents, while suspended in air. This name is so appropriate that it holds good in other languages, and expressive titles have been given to these birds which are either descriptive of the sound, or endeavor to imitate it. So characteristic is this humming sound, that it is not precisely the same in any two species, and in many instances is so very decided in its tone, that a practised and observant ear can often detect the species of a Humming-bird by the sound which it produces in flight. For example, Mr. Gosse records that the Black-capped Humming-bird produces a noise exactly like the whizzing of a wheel driven by machinery, while that of another species is very like the droning hum of a large bee.

The number of species of these birds is truly wonderful, as more than three hundred are known and have been described, while new species are being continually discovered. It is evident to any one who has examined these exquisite little birds, and studied the inexhaustible variety of form and color which they exhibit, that many forms are yet wanting as links needed to complete the chain of species, and that in all probability there are in existence Humming-birds which possess forms quite as strange and colors quite as glowing as any of those which have found a place in our collections.

The legs of these birds are remarkably weak and delicate, and the wings are proportionately strong, a combination which shows that the creatures are intended to pass more of their time in the air than on foot. Even when feeding they very seldom trouble themselves to perch, but suspend themselves in the air before the flower on which they desire to operate, and with their long slender tongues are able to feed at ease without alighting. In the skeleton, especially in the shape of the breast-bone and wings, as well as in the comparative small size of the feet, the Humming-birds bear some analogy to the swifts, and, like those birds, never lay more than two eggs.

The flight of these birds is inconceivably rapid, so rapid indeed that the eye cannot follow it when the bird puts forth its full speed; and with such wonderful rapidity do the little sharp-cut wings beat the air, that their form is quite lost, and while the bird is hovering near a single spot, the wings look like two filmy gray fans attached to the sides. While darting from one flower to another the bird can hardly be seen at all, and it seems to come suddenly into existence at some spot, and as suddenly to vanish from sight. Some Humming-birds are fond of towering to a great height in the air, and descending from thence to their nests or to feed, while others keep near the ground, and are seldom seen at an elevation of many yards.

The food of the Humming-birds is much the same as that of the honey-suckers, except, perhaps, that they consume more honey and fewer flies. Still, they are extremely fond of

small insects, and if kept away from this kind of diet soon pine away, in spite of unlimited supplies of syrup and other sweet food.

In Webber's "Wild Scenes and Song Birds," there is an interesting description of some ruby-throated Humming-birds, in which their necessity for insect food is well shown. He had several times succeeded in capturing and taming specimens of these lovely little birds, but always found that they began to pine away and look doleful until they were set at liberty. As soon as they were free, they darted away into the air, but soon returned to their old quarters, attracted by the sweet repast which was plentifully prepared for them. They had evidently been greatly benefited by their short absence, for they resumed their accustomed vivacity, and continued in good health for a fortnight, at the expiration of which time they again drooped, and again needed a short period of freedom. Anxious to discover their proceedings during their absence, Mr. Webber and his sister watched them carefully when they were next set at liberty, and at last were fortunate enough to succeed in their endeavors.

"When we opened the cage this time, it was a bright summer's morning, just after sunrise. What was our surprise to see the ruby-throat, instead of darting away as usual, remain with the young ones, which had immediately sought sprays, as if feeling a little uncertain what to do with themselves. Scarlet flew round and round them; then he would dart off to a little distance in the garden, and suspend himself on the wing for an instant, before what I at first could not perceive to be anything more than two bare twigs; then he would return and fly around them again, as if to show them how easy it was.

"The little bold fellows did not require long persuasion, but were soon launched in the air again. They too commenced the same manœuvres among the shrubbery, and as there were no flowers there, we were sadly puzzled to think what it was they were dipping at so eagerly, to the utter neglect of any of the many flowers, not one of which they appeared to notice. We moved closer to watch them to better advantage, and in doing so, changed our relative position to the sun.

"At once the thing was revealed to me. I caught friend Ruby in the very act of abstracting a small spider, with the point of his long beak, from the centre of one of those beautiful circular webs of the garden spider, that so abound throughout the South. The thing was done so daintily, that he did not stir the dew-drops, which, now glittering in the golden sun, crowded the gossamer tracery all diamond strung.

"'Ha! we've got your scent, my friends! Ha! ha! ha!'" And we clapped and danced in triumph."

ONE of the most peculiar forms among these exquisite little creatures is the RUBY-THROATED HUMMING-BIRD, so called on account of the glowing metallic feathers that blaze with ruby lustre upon its throat, and gleam in the sunshine like plumes of living fire. This beautiful species is found in Northern America, and is one of the migrating kind. Passing over a large range of country, it arrives in Pennsylvania about the end of April, and is found during the summer months of the year in different parts of North America, even venturing into the lands owned by the Hudson's Bay Company.

It is a most lovely little creature; the general color of its upper surface and the two central tail-feathers is light shining green glazed with gold. The under parts of the body are grayish-white intermingled with green, and the throat is of the most gorgeous ruby-carmine. When placed under a moderate magnifier, the feathers of the throat are seen to be constituted in a different manner from those of the other parts of the body, the wonderfully refulgent property being due to certain minute furrows which are traced upon the surface, and are analogous in their mode of action to the delicate lines which give to nacre its peculiar iridescent splendor. As is generally the case with Humming-birds, the wings, as well as many of the tail-feathers, are of a purplish-brown hue.

In consequence of the peculiar structure of the throat-feathers, they change their tints with every variation of light, or even with the quick respiration of the little fiery creatures, and fling out at one moment the most dazzling rays of ruby and carmine, and on the instant change to the deepest velvety-black.

Of the Ruby-throat, Audubon speaks in the following terms:—

“I have seen these birds in Louisiana as early as the 10th of March. Their appearance in that State varies, however, as much as in any other, it being sometimes a fortnight later, or, although rarely, a few days earlier. In the middle district they seldom arrive before the 15th of April, more usually the beginning of May. I have not been able to assure myself whether they migrate during the day or by night, but am inclined to think the latter the case, as they seem to be leisurely feeding at all times of the day, which would not be the case had they long flights to perform at that period.

“They pass through the air in long undulations, raising themselves for some distance at an angle of about forty degrees, then falling in a curve; but the smallness of their size precludes the possibility of following them with the eye farther than fifty or sixty yards without great difficulty, even with a good glass. A person standing in a garden by the side of a common *Althæa* in bloom, will be as surprised to hear the humming of their wings, and then see the birds themselves within a few feet of him, as he will be astonished at the rapidity with which the little creatures rise into the air, and are out of sight and hearing the next moment.”

Trusting in its matchless power of wing, the Ruby-throated Humming-bird cares nothing for eagle, hawk, or owl; and though only three inches or so in length, thinks nothing of assaulting any bird of prey that may happen to come within too close a proximity of its home. The tiny creature is in fact a shocking tyrant, jealous to an extreme of its own territories, launching itself furiously at any bird that may seem to be an intruder. It has even been seen to attack the royal eagle itself, and to perch itself upon the head of its gigantic enemy, pecking away with hearty good will, and scattering the eagle's feathers in a stream as the affrighted bird dashed screaming through the air, vainly attempting to rid itself of its puny foe.

The Ruby-throat is very easily tamed, and is a most loving and trustful little creature. Mr. Webber, in the work to which I have already made allusion, has given a most interesting account of a number of Ruby-throats which he succeeded in taming. On several occasions he had enticed the living meteors into his room by placing vases of tempting flowers on the table, and adroitly closing the sash as soon as they were engaged with the flowers, but he had always lost them through their dashing at the window and striking themselves against the glass. At last, however, his attempts were crowned with success, and “this time I succeeded in securing an uninjured captive, which, to my inexpressible delight, proved to be one of the Ruby-throated species, the most splendid and diminutive that comes north of Florida. It immediately suggested itself to me that a mixture of two parts refined loaf-sugar, with one of fine honey, in ten of water, would make about the nearest approach to the nectar of flowers.

“While my sister ran to prepare it, I gradually opened my hand to look at my prisoner, and saw, to my no little amusement as well as suspicion, that it was actually ‘playing ’possum’—feigning to be dead most skilfully. It lay on my open palm motionless for some minutes, during which I watched it in breathless curiosity. I saw it gradually open its bright little eyes to peep whether the way was clear, and then close them slowly as it caught my eye upon it. But when the manufactured nectar came, and a drop was touched upon the point of its bill, it came to life very suddenly; and in a moment was on its legs, drinking with eager gusto of the refreshing draught from a silver tea-spoon. When sated, it refused to take any more, and sat perched with the coolest self-composure on my finger, and plumed itself quite as artistically as if on its favorite spray. I was enchanted with the bold innocent confidence with which it turned up its keen black eyes to survey us, as much as to say, ‘Well, good folks! who are you?’”

ANOTHER species belonging to this genus is well worthy of notice, on account of its beauty and interesting habits. This is the LONG-TAILED HUMMING-BIRD of Jamaica (*Tróchilus polytmus*), one of the species which do not migrate, but remain in one locality throughout the year. It is remarkable for its two long tail-feathers.

The upper parts of this beautiful bird are green, glossed with gold, the wings are purple-brown, and the tail black, with a steel-blue reflection. The long streaming feathers of the tail are the pair next to the exterior feathers, and when the bird is in a state of repose they

cross each other like the blades of scissors. The throat, breast, and whole of the lower parts are glowing emerald green, except the under tail-coverts, which are purple-black. The top of the head and nape of the neck are velvet black, and the feathers of the head are rather long, and form a kind of loose plume. The whole length of a male bird is rather more than ten inches, the long tail-feathers being between seven and eight inches in length.

The female is not possessed of the beautiful tail which distinguishes her mate; the under parts are white, covered with green spots caused by the green tips of the feathers, the top of the head is dirty brown, and her entire length is little more than four inches. Mr. Gosse, in his well-known "Birds of Jamaica," has given some admirable descriptions of this pretty bird and its habits.

"It loves to frequent the margins of woods and roadsides, where it sucks the blossoms of the trees, occasionally descending to the low shrubs. There is one locality where it is abundant,—the summit of that range of mountains just below Bluefields, and which is known as the Bluefields ridge. . . . Not a tree, from the thickness of one's wrist up to the giant magnitudes of the hoary figs and cotton trees, but is clothed with fantastic parasites; begonias with waxen flowers, and ferns with hirsute stems, climb up the trunks; enormous bromelias spring from the greater forks and fringe the horizontal limbs; curious orchidæ, with matted roots and grotesque blossoms, droop from every bough, and long lianes, like the cordage of a ship, depend from the loftiest branches or stretch from tree to tree. Elegant tree-ferns and towering palms are numerous; here and there the wild plantain, or heliconia, waves its long ivy-like leaves from amidst the humbler bushes, and in the most obscure corners, over some decaying body, rises the nobler spike of a magnificent limodarum. The smaller wood consists largely of the plant called glass-eye berry, the blossoms of which, though presenting little beauty in form or hue, are pre-eminently attractive to the Long-tailed Humming-bird.

"And here at any time we may, with tolerable certainty, calculate on finding these very lovely birds. But it is in March, April, and May that they abound. I suppose I have sometimes seen not fewer than a hundred come successively to rifle the blossoms within the space of half as many yards, in the course of a forenoon. They are, however, in no respect gregarious; though three or four may at one moment be hovering round the blossoms of the same bed, there is no association; each is governed by his individual preference, and each attends to his own affairs.

"It is worthy of remark, that males uniformly form the greater portion of the individuals observed at this elevation. I do not know why it should be so, but we see very few females there, whereas, in the lowlands, this sex outnumbered the other. In March, a large number are found to be clad in the livery of the adult male, but without long tail-feathers; others have the characteristic feathers lengthened, but in various degrees. These are, I have no doubt, males of the preceding season.

"It is also quite common to find one of the long tail-feathers much shorter than the other, which I account for by concluding that the shorter is replacing one that had been accidentally lost. In their aerial encounters with each other a tail-feather is sometimes displaced. One day, several of these 'young bloods' being together, a regular tumult ensued, somewhat similar to a sparrow-fight; such twittering, and fluttering, and dartings hither and thither. I could not exactly make out the matter, but suspected that it was mainly an attack—surely an ungallant one—made by them upon two females of the same species that were sucking at the same bud. These were certainly in the skirmish, but the evolutions were too rapid to be certain how the battle went.

"The whirring made by the vibrating wings of the male *Polytmus* is a shriller sound than that produced by the female, and indicates its proximity before the eye has detected it. The male almost constantly utters a monotonous quiet chirp, both while resting on a twig or while circling from flower to flower. They do not invariably probe flowers on the wing; one very frequently observes them thus engaged when alighted and sitting with closed wings; and often they partially sustain themselves by clinging by the feet to a leaf while sucking, the wings being expanded and vibrating."

Several of these beautiful birds were captured and tamed by Mr. Gosse, who, however:



found the task to be one of no ordinary difficulty. It was easy enough to catch them in a gauze net, for they were so inquisitive that they would hover over the net and peep into its recesses; but when they were caught they would generally die within a few hours. Several of the Long-tailed Humming-birds were at last taken from the nest, and were soon tamed. They were fed chiefly upon syrup, but were also supplied with little insects, in imitation of their ordinary diet in a wild state. They were especially pleased with a very small species of ant, which used to get into the vessel of syrup and fairly cover its surface with their bodies.

There is a long and very interesting description of these birds, which resembles, in many respects, the amusing account given by Mr. Webber of his own winged pets. One peculiarity deserves notice. Each bird, as soon as it was introduced into the room in which it lived, made choice of separate perches for roosting, alighting after flight, and for resting-places, and, when it had once settled itself, it would not permit any of its companions to usurp its dominions. Even if their owner endeavored to make them change their perches, they were quite uneasy, hovered about the spot, and did all in their power to reassume their positions.

The nesting of this beautiful species is very remarkable, as the nests are wonderfully constructed, and are placed in very curious localities. One of these nests was found upon the sea-shore, fastened to a slender twig of wild vine, and actually overhanging the waves. It seems that the bird is in the habit of removing its eggs or young when it has been disturbed, although the mode by which this feat is accomplished has not yet been discovered. The nest is beautifully made of silky cotton threads, intermixed with the web of certain spiders, and is often studded profusely with lichens. Mr. Gosse was fortunate enough to see the bird in the act of making her nest, and describes her movements in the following words:—

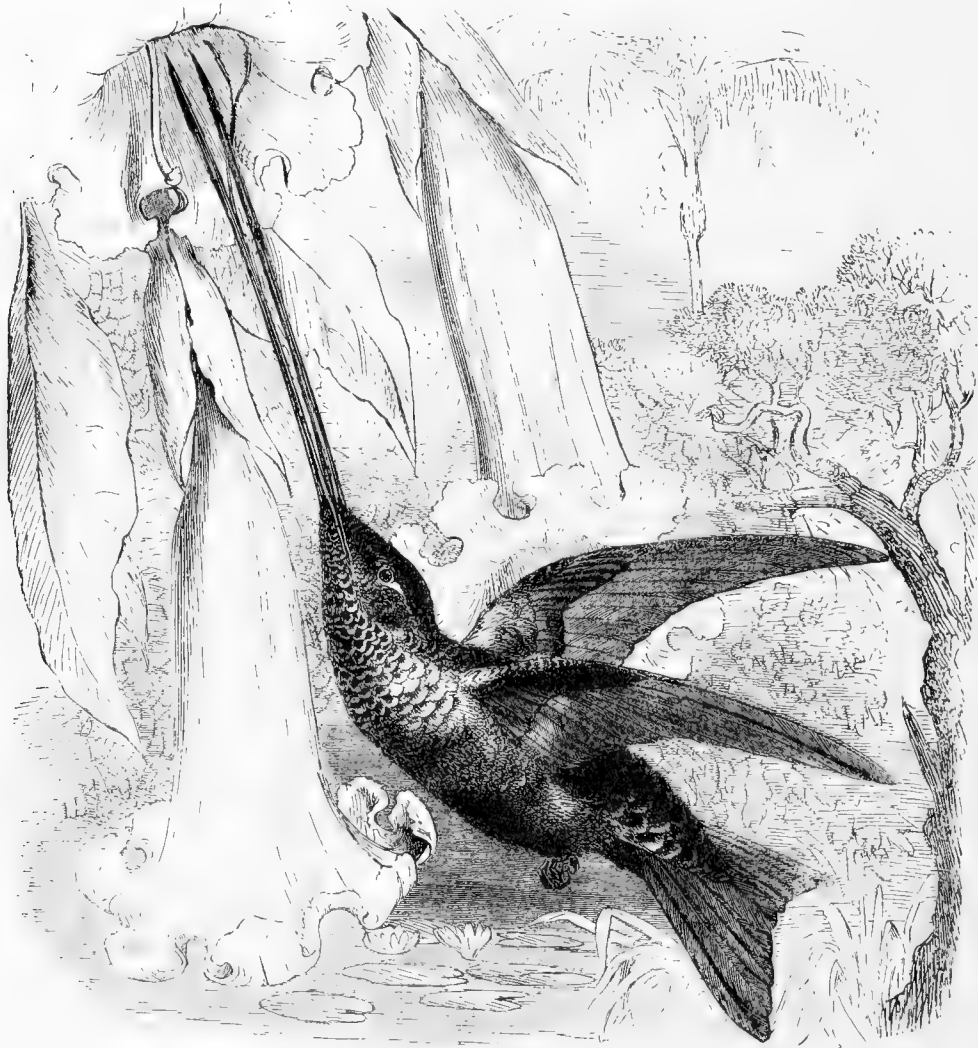
“Suddenly I heard the whirr of a Humming-bird, and, looking up, saw a female *Polytmus* hovering opposite the nest with a mass of silk-cotton in her beak. Deterred by the sight of me, she presently retired to a twig a few paces distant, on which she sat. I immediately sank down among the rocks as gently as possible, and remained perfectly still. In a few seconds she came again, and, after hovering a moment, disappeared behind one of the projections, whence in a few seconds she emerged again and flew off. I then examined the place, and found, to my delight, a new nest. . . .

“I again sat down on the stones in front, where I could see the nest, not concealing myself, but remaining motionless, waiting for the bird’s re-appearance. I had not to wait long: a loud whirr, and there she was, suspended in the air before her nest. She soon espied me, and came within a foot of my eyes, hovering just in front of my face. I remained still, however, when I heard the whirring of another just above me, perhaps the mate, but I durst not look towards him, lest the turning of my head should frighten the female. In a minute or two the other was gone, and she alighted again on the twig, where she sat some little time preening her feathers, and apparently clearing her mouth from the cotton fibres, for she now and then swiftly projected the tongue an inch and a half from the beak, continuing the same curve as that of the beak. When she arose, it was to perform a very interesting action, for she flew to the face of the rock, which was thickly clothed with soft dry moss, and, hovering on the wing as if before a flower, began to pluck the moss until she had a large bunch of it in her beak. Then I saw her fly to the nest, and having seated herself in it, proceed to place the new materials, pressing and arranging and interweaving the whole with her beak, while she fashioned the cup-like form of the interior by the pressure of her white breast, moving round and round as she sat. My presence appeared to be no hindrance to her proceedings, although only a few feet distant; at length she left the place, and I left also. On the 8th of April I visited the cave again, and found the nest perfected and containing two eggs, which were not hatched on the 1st of May.”

In the same work are contained many interesting descriptions of this exquisite bird and its habits, and to its pages the reader is referred for further information.

THE SWORD-BILL HUMMING-BIRD derives its name from the singular shape and size of its beak, which is very nearly as long as the rest of the body.

This curious species is rather large, as it measures about eight inches in length. It inhabits Santa Fé de Bogóta, the Carracas and Quito, and is generally found at considerable elevations, having been often seen at a height of twelve thousand feet above the level of the sea. The inordinately long bill is given to this bird in order to enable it to obtain its food from the very long pendent corollas of the *Brugmansia*, and, while probing the flowers with its beak, it suspends itself in the air with a tremulous movement of the wings. Its movements are singularly elegant, and while engaged in feeding it performs the most graceful manœuvres as it probes the pendent blossoms, searching to their inmost depths. The



SWORD-BILL HUMMING-BIRD.—*Docimastes ensifer*.

nest of this species is hung to the end of a twig, to which it is woven with marvellous skill, and its whole construction is very beautiful.

The adult male bird is colored as follows. The head and the upper part of the body are green, glossed with gold in some parts and with bronze in others, the tints changing according to the light. The wings are dark black-brown with a purple gloss, and the tail is dark black, bronzed on the upper surface. Behind each eye is a small but conspicuous white spot slightly elongated, and there is a broad crescent-shaped mark of light green on each side of the neck. The under parts are of a bronze-green, and the under tail-coverts are flecked with a little white. The female is of much the same color as the male upon the upper parts of the body, except that there is a little white upon the lower part of the back and a narrow white line behind the eye. The throat is brown, each feather being

slightly edged with gray, and there is a very faint indication of emerald-green on part of the throat. The young male is much like the female, but is more coppery in his hues. The throat is white speckled with brown, because each feather is white with a brown tip. At each side of the throat there is a large patch of green intermingled with white.

THE SLENDER SHEAR-TAIL is an inhabitant of Central America, and appears to be rather a local bird. It is supposed not to be found south of the Isthmus of Panama, nor to extend more than eighteen degrees northwards. As its wings are rather short, and not remarkable for strength, it is conjectured to be a non-migratory bird. The country where it is seen in the greatest plenty is Guatemala.

The sexes of this creature are very different in their form and color of their plumage, and could hardly be recognized as belonging to the same species. In the adult male bird, the upper parts of the body are a deep shining green, becoming brown on the head, and changing into bronze on the back and wing-coverts. The wings are purple-brown. The long and deeply-forked tail is black, with the exception of a little brown upon the inner web of the two outermost feathers. The chin is black glossed with green, the throat is deep metallic purple, and upon the upper part of the chest is placed a large crescent-shaped mark of buff. The abdomen is bronze, with a gray spot in its centre; and there is a buff spot on each flank. The under tail-coverts are of a greenish hue.

The female does not possess the long tail, and her colors are golden-green above and reddish-buff below. The tail is very curiously marked. The central feathers are entirely gold-green; the exterior feathers are rusty red at their base, black for a considerable portion of their length, and tipped with white.

ANOTHER example of this genus is the well-known CORA'S SHEAR-TAIL, a remarkably pretty bird, and specially notable for the peculiarity from which it derives its popular name. It inhabits Peru, and is found very plentifully between Callao and Lima. The valley of the Andes is also a favorite residence of this bird.

In the male, the head and upper parts of the body are golden-green, with the exception of the wings, which are purple-brown. The throat is violet, changing into metallic crimson, and the under parts are grayish-white. The tail is rather curiously shaped. The two central feathers are double the length of the next pair, and the remaining feathers are regularly graduated, the exterior being the shortest. This long tail is only found in the male bird, the tail of the female being of the ordinary length.

SEVERAL of the Humming-birds are remarkable for a tuft of pure white downy feathers which envelop each leg, and which has obtained for them the popular title of Puff-legs, because the white tufts bear some resemblance to a powder-puff. The generic name *Eriocnemis* is given to the bird in allusion to this peculiarity, and is formed of two Greek words, the former signifying wool or cotton, and the other the thigh. Owing to the very curious effect of these tufts, the Puff-legs are in great demand among the dealers, as they look remarkably well in a case of stuffed birds.

The COPPER-BELLIED PUFF-LEG is an inhabitant of Santa Fé de Bogotá, and is a very common bird in that locality. It may easily be found, as it is a remarkably local bird, being confined to a narrow strip or belt of land, which possesses the requisite characteristics of temperature and vegetation.

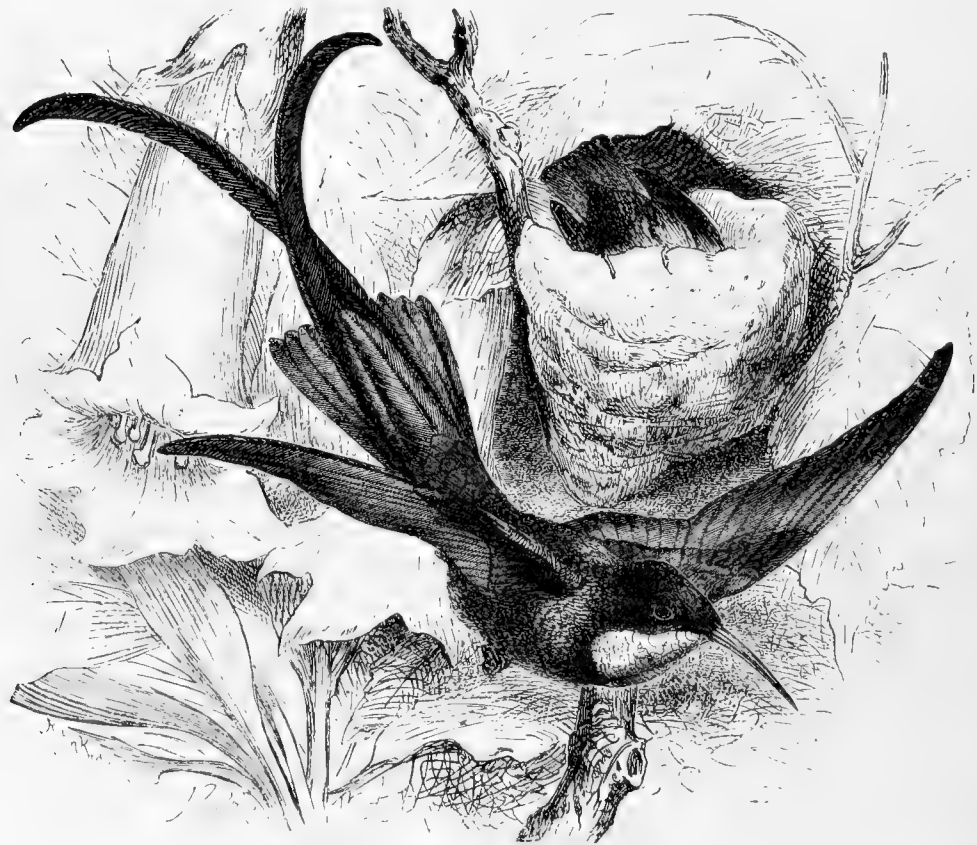
It must here be remarked that in the mountainous districts where this and many other species of Humming-birds are found, every degree of temperature may be obtained within the compass of a few miles by merely ascending or descending the lofty mountains which form the greater part of the country. A few hours' journey will bring the traveller through every shade of climate, from the perpetual snow and ice at the summit, to the moderate temperatures of the middle regions, and the tropical heat of the mountain's foot. This circumstance must be borne in mind, as we shall find, on examining the habits of many of these birds, that the conditions requisite for their maintenance are very capricious, and that a belt of land a

few yards in width will often suffice to separate the habitation of one local species from that of another, neither venturing to trespass into the dominions of its neighbor.

The Copper-bellied Puff-leg is always found in a narrow belt of land varying from six thousand to nine thousand feet above the level of the sea, being, therefore, practically confined to a strip of land barely a thousand yards in width. In all probability the reason of this restricted range may be found in the vegetation of the locality, which supplies the food on which this species lives.

It is a very beautiful little bird, and both the sexes are very similar in their color and general appearance, except that in the female the puffs of white down are not so large nor so conspicuous as in her mate. In the adult male, the top of the head, the sides of the neck, and the back are green, washed with a decided tint of bronze, except upon the upper tail-coverts, where the green is very pure and of a metallic brilliancy. As is generally the case with Humming-birds, the fine and sharply-cut wings are brown washed with purple. The tail is black, with a purple gloss in a side light. The throat is of a beautiful shining metallic green, and the general color of the breast and under portions of the body is green glossed with gold, with the exception of the abdomen, where the green takes a coppery hue, from which the bird has received its popular name. The "puffs" are of a snowy whiteness, and look like refined swans'-down.

The female is very similar in color, except that the hues of the throat are not possessed of so metallic a brilliancy, and, as has already been stated, the leg-tufts are comparatively small.



FIERY TOPAZ HUMMING-BIRD.—*Topaza pella*.

In the opinion of many observers, the Topaz Humming-birds are the most resplendent and beautiful of all their tribe, the palm of beauty being almost equally divided between the two birds which will be described in the following lines.

The FIERY TOPAZ inhabits the country through which passes the Rio Negro, a tributary of the Upper Amazon. It is a most gorgeous creature, and attracts peculiar attention on

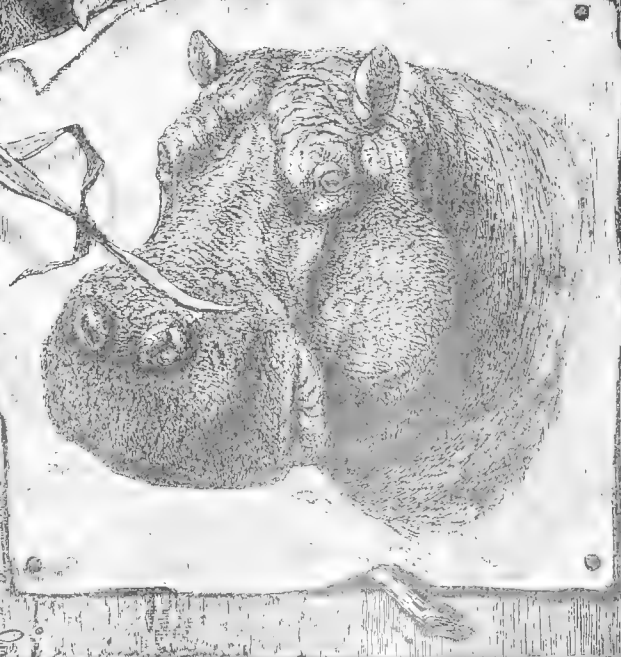
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account of the very considerable dimensions to which it reaches. Its nest is a very remarkable structure, looking much as if it were made from leather, and woven so adroitly to the bough upon which it is placed that it can hardly be distinguished from the natural bark or from some of the numerous fungi that grow upon trees. Its surface is quite smooth, and the color is a reddish-dun. The substance of which it is composed is a kind of fungus, of the same order as the well-known *Boletus* of which German tinder is made. The eggs are two in number, and beautifully white.

The color of this splendid bird is mostly a blazing scarlet, contrasting boldly with the deep velvet-black of the head and part of the neck. The throat is emerald-green, with a patch of delicate crimson in the centre. The lower part of the back and the upper tail-coverts are beautiful green with orange gloss; and the wings and tail are purple-black, with the exception of the two elongated feathers of the tail, which are purplish-green, and cross each other near the base. The under tail-coverts are green. So vivid are the tints, and so beautiful the form of this bird, that it well deserves the honorable title accorded to it by Prince Lucien Bonaparte of being "*inter Trochilides pulcherrimus*." The female is without the elongated tail-feathers, and she is of a green-gold color on the upper parts of the body. This species is very like the following bird, but may be distinguished from it by the purple of its tail-feathers and the fiery effulgence of its body. The entire length of this bird is about eight inches.

THE CRIMSON TOPAZ, OR ARA HUMMING-BIRD (*Topaza pella*), closely resembles the fiery topaz, except that the hues of its body are more of a deep crimson than of the flaming scarlet which denotes the preceding species. The tail is reddish-buff, with the exception of the two central feathers which have the same purple-green as in *T. pyra*. It inhabits Cayenne, Trinidad, and Surinam, and among the natives is known by the name of Karabamiti. It is a shy and retiring bird, living near rivers, and shrouding its beauties in the deepest forests. It is a semi-nocturnal bird, resembling the nightjars in many of its habits, and being most active in the early dawn and the beginning of the evening. Only at those hours does it venture from the deep recesses of its home, and display its flashing colors as it darts along the glades or over the streams in search of its insect prey.

WE have in the Racket-tailed Humming-birds one of those singular forms which are so often found among these strange little birds.

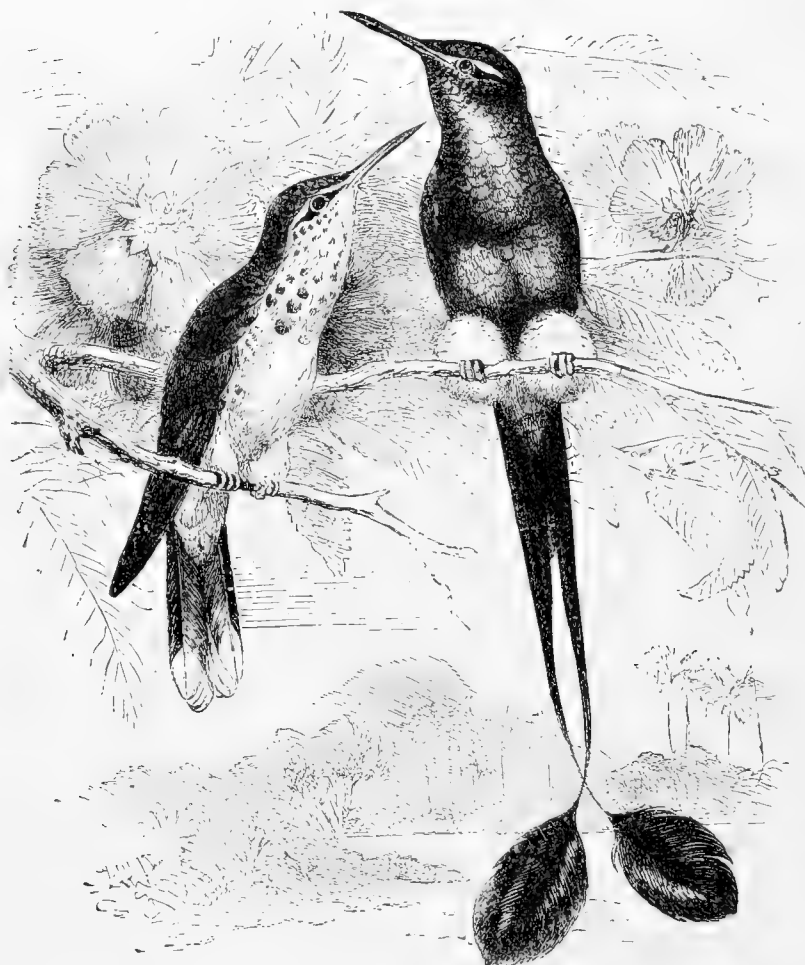
The RACKET-TAIL HUMMING-BIRD (*Discúra longicauda*) is a native of Cayenne, Surinam, and Demerara, and is also found in several portions of Northern Brazil. It is chiefly remarkable for the curious formation from which it derives its popular and appropriate name.

In the male bird, the face, throat, and part of the neck are light verditer-green, becoming more luminous towards the chest. Under the chin there is a little velvet-black spot, which is very conspicuous against the light green of the surrounding feathers. The upper parts are bronze-green, and a buff-white band crosses the lower end of the back. The very curious tail is deeply forked, the two exterior feathers being twice the length of the second pair, and the others decreasing in length in rapid progression. The general color of the tail is purple-black, the purple being especially visible on the "rackets." The female possesses no rackets on the tail, nor green on her head or throat. The velvet-black spot on the chin, however, retains its place.

THE WHITE-BOOTED RACKET-TAIL inhabits the Columbian Andes, and is very common near Santa Fé de Bogotá. It is a hill-loving bird, being generally found at an elevation of five or ten thousand feet above the level of the sea. It is thought to be confined within the third and tenth degrees of north latitude. This bird is remarkably swift of wing, its darting flight reminding the spectator of the passage of an arrow through the air. At one time it will hover close to the ground, hanging over some favorite flower and extracting the sweet contents of the blossoms; and at the next moment it will shoot to the very summit of some lofty tree, as if impelled by a bow, and leave but the impression of an emerald-green line of light upon the observer's eye. While hovering over the flowers, the long racket-shaped feathers of the tail

are in constant motion, waving gently in the air, crossing each other, opening and closing in the most graceful manner. But when the bird darts off with its peculiar arrowy flight, the tail-feathers lie straight behind it.

The male of this species is bronze-green upon the greater part of the body, the green taking a richer and redder hue upon the upper tail-coverts. The throat and breast are brilliant emerald-



WHITE-BOOTED RACKET-TAIL.—*Steganurus underwoodi*.

green. The wings are purple-brown, and the tail is brown, with the exception of the racket-tails, which are black "shot" with green. The feet are yellow, and upon the legs are placed two beautiful white puffs. The whole length of the bird is rather more than three inches. The female bird does not possess the racket-shaped tail-feathers, and is of a bronze-green upon the upper surface. The tail is brown, with the exception of the two middle feathers, which are bronze-green like the body. The two exterior feathers are tipped with white, and the others with bronze-green. The under surface is white, diversified with bronze-green spots on the breast and flanks. The puffs are smaller than in the male.

There are several species belonging to this genus, among which may be mentioned the PERUVIAN RACKET-TAIL, a bird which may be distinguished by the rusty-red color of the leg-muffs.

THE COLUMBIAN THORNBILL is an inhabitant of Santa Fé de Bogotá, and is remarkable for its adherence to the more temperate regions of that locality. It never seems to ascend to the hills, but prefers remaining in the plains or in some of the valleys where it can find the greatest abundance of food. It appears not to frequent the tops of trees, as is often the case with Humming-birds, but contents itself with the low flowering shrubs of the plains and valleys. The color of this bird is golden-green on the upper parts, changing into a warmer hue on the upper tail-coverts. Below, it is dull green, with the exception of a remarkable tuft or beard which hangs from the chin, and which is light green towards its base and purple-red towards its extremity. The wings are purple-brown, the tail brown with a bronze gloss, and the under tail-coverts brown-yellow. The female resembles the male, but has not the flame-like mark on the throat. The total length of this species is between five and six inches.

THERE are several species of Thornbills, among which may be noticed HERRAN'S THORNBILL (*Rhamphomicron herrani*), a bird which is remarkable for its broad purple tail and the snowy white tips of the three exterior feathers. All the thornbills possess the curious beard-like appendage to the chin.



A CURIOUSLY formed bird, remarkable for its long slender crest and the elongated feathers of its tail, is the POPELAIRE'S THORNTAIL (*Gouldia popelarii*). This beautiful little creature inhabits Peru and Columbia, and is found in the most elevated regions of that locality. It is a very quick flyer, but there is little known of its habits.

In the adult male, the crown of the head, the shorter feathers of the crest, together with the face and throat, are light golden-green, and the long slender feathers are black. The wings are purple-brown. The back is gold-green, with the exception of a bold bar of pure white, which crosses the back and forms a patch on each flank. The middle of the abdomen is black, the flanks are brown, and the under tail-coverts are grayish-white. The upper surface of the tail is blue, the shafts of the middle feathers are white, and the remaining feathers are white at their bases and brown for the rest of their length. The under surface of the tail is a bright steel-blue, and the shafts are white throughout their length.

The female possesses no crest and no elongated tail-feathers, and bears a very curious resemblance to the well-known insect termed the Humming-bird Moth.

ANOTHER curious example of the same genus may be found in CONVERS' THORNTAIL, a native of Santa Fé de Bogotá.

This species is very beautiful both in shape and coloring, and, as in the case of the preceding bird, the two sexes differ greatly in appearance. In the male of this bird the general color is green, a white bar running across the lower end of the back, and the tail-feathers being very long, narrow, and pointed. Their color is shining black, the shafts being white. In the female the general color of the plumage resembles that of the male, except that the colors are not so brilliant, and the throat is grayish-white, covered with brown-green spots. The tail is very short, and is composed of a series of rounded feathers of a dusky hue, and white at the tip. Both the species are swift flyers, and are said to resemble the swallow when on the wing.

A VERY small Humming-bird, remarkable for its curious spiky tail and rich feathery gorget, is the LITTLE FLAME-BEARER (*Selasphorus scintilla*), one of several species which possess the fiery tuft of feathers from which they derive their name of Flame-bearers.

This species inhabits the inner side of the extinct volcano Chiriqui, in Veragua, at an elevation of nine thousand feet above the level of the sea. It is a tiny bird, measuring only two and a half inches in length, and as it darts about the singular habitation in which it lives, its fiery gorget gleams with such a flaming crimson, that, as Mr. Gould happily remarks, it seems to have caught the last spark from the volcano before it was extinguished.

In the male, the upper surface is of a bronze-green. The gorget is of a fiery red, and as the feathers on each side are longer than those in the centre, it necessarily projects from the neck. Below the gorget is a band of white marked with buff, and the wings are purple-brown. The central feathers of the tail are brownish-black edged with red, and the remaining feathers are brownish-black on their outer webs, and reddish-rust on the inner webs. The under surface of the tail is a rusty-red. The female is duller in her coloring, and the gorget is shorter and of a whitish-gray spotted with brown. The flanks are buff, and the tail-feathers are not so pointed as in the male.

THERE are several species of Flame-bearers, among which may be mentioned the RUFOUS FLAME-BEARER (*Selasphorus rufus*), a bird which was originally discovered by Captain Cook. It is an inhabitant of Mexico, and is also found on the Pacific side of Northern America in the summer time, returning to Mexico in the winter. This species is well described by Mr. Nuttall, whose account is quoted by Audubon:—

“We began to meet with this species near the Blue Mountains of the Columbia River in the autumn, as we proceeded to the coast. These were all young birds, and were not very easily distinguished from those of the common species of the same age.

“We now for the first time (April 16) saw the males in numbers, darting, buzzing, and squeaking in the usual manner of their tribe; but when engaged in collecting its accustomed sweets in all the energy of life, it seemed like a breathing gem, a magic carbuncle of glowing

fire, stretching out its glorious ruff as if to emulate the sun itself in splendor. Towards the close of May the females were sitting, at which time the males were uncommonly quarrelsome and vigilant, darting out at once as I approached the tree, probably near the nest, looking like an angry coal of brilliant fire, passing within very little of my face, returning several times to the attack, sailing and darting with the utmost velocity, at the same time uttering a curious reverberating sharp bleat, somewhat similar to the quivering twang of a dead twig, yet also so much like the real bleat of some small quadruped, that for some time I searched the ground instead of the air for the actor in the scene.

“At other times the males were seen darting high up in the air, and whirling about each other in great anger and with much velocity. After these manœuvres, the aggressor returned to the same dead twig, where for days he resolutely took his station, displaying the utmost courage and angry vigilance. The angry hissing or bleating note seems something like *wht' t' t' t' sh' vee*, tremulously uttered as it whirls and sweeps through the air, accompanied also by something like the whirr of the night hawk. On the 29th of May I found a nest in a forked branch of the Nootka bramble (*Rubus nutkanus*). The female was sitting upon two eggs of the same shape and color as those of the common species, *Trochilus colubris*. The nest also was similar, but somewhat deeper. As I approached, the female came hovering round the nest, and soon after, when all was still, she resumed her place contentedly.”

The nest of this bird measures, according to Audubon's description, two inches and a quarter in height and an inch and three-quarters in breadth at the upper part, and is composed of mosses, lichens, and feathers, woven together with delicate vegetable fibres. The lining is very soft cotton. Another observer, Dr. Townsend, compares the curious note of this bird to the sound which is produced by the rubbing together of two branches during a high wind.

THE birds which compose the genus *Phaëthornis* are remarkable for the very long and beautifully graduated tail, all the feathers being long and pointed, and the two central far exceeding the rest. The two sexes are mostly alike, both in the color and shape of their plumage and in size. These birds inhabit Venezuela and the Carracas, being generally found in the richest district of those localities, where the flowers blossom most abundantly. All the Hermits build a very curious and beautiful nest, of a long funnel-like form tapering to a slender point, and woven with the greatest neatness to some delicate twig or pendent leaf by means of certain spiders' webs. The material of which it is made is silky cotton fibre, intermixed with a woolly kind of furze, and bound together with spider-web. Next we describe SALLÉ'S HERMIT.

Very little is known of its habits, but, like the generality of Humming-birds, it does not possess any great power of voice. Indeed, even in the few instances where one of these birds is gifted with vocal powers, its song is of a feeble and uncertain character. The best songster of all the Humming-birds appears to be the Vervain Humming-bird (*Mellisuga minima*), which, according to Mr. Bullock, can sing, although not very perfectly.

“He had taken his station on the twig of a tamarind-tree which was close to the barn and overspread part of the yard; there, perfectly indifferent to the number of persons constantly passing within a few yards, he spent most of the day. There were few blossoms on the tree, and it was not the breeding season, yet he most pertinaciously kept absolute possession of his domain; for the moment any other bird, though ten times as large as himself, approached near his tree, he attacked it most furiously and drove it off, always returning to the same twig he had before occupied, and which he had worn quite bare for three or four inches by constantly feeding on it. I often approached within a few feet with pleasure, observing his tiny operations of cleaning and pluming, and listening to his weak, simple, and oft-repeated note. I could easily have caught him, but was unwilling to destroy so interesting a little visitant, who had afforded me so much pleasure.

“In my excursions I procured many of the same species, as well as the long-tailed black and a few others, as well as the one I have mentioned as the smallest yet described, but which has the finest voice of any. I spent some agreeable hours in the place that had been the

Botanical Garden of Jamaica; and on the various trees, now growing to a luxuriant size, met with many curious birds, among which this specimen was perched upon the bread-fruit or cabbage-tree. He poured forth his slight querulous note among a most numerous assemblage of the indigenous and exotic plants and trees of the island, on a spot once the pride of Jamaica, but now a desolate wilderness." This beautiful Humming-bird will be described at length in a future page.

To return to Sallé's Hermit. The upper parts of its body are green-bronze, excepting the upper tail-coverts, which are rusty-red. The wings are purple-brown. The central tail-feathers are bronze, largely tipped with white, and the remaining feathers are white, with the exception of a broad black band, drawn obliquely across them near the base. Above and below the eye there is a white streak, and the color of the under parts of the body is sober gray.

A RATHER large species of Humming-bird is the JACOBIN HUMMING-BIRD (*Florisuga mellivora*). It is remarkable for the manner in which the rounded tail-feathers are arranged, and the very long upper tail-coverts. This bird represents a beautifully-colored species, glowing with boldly contrasted hues of white, blue, green, and black.

It inhabits Cayenne, Guiana, Trinidad, and seems to have rather an extensive range, being found from Cayenne to Peru. It is a very curious species, inhabiting broad and fluvial districts not more than two or three hundred feet from the level of the sea. The color is very variable, but is generally a light blue upon the head and throat, with a large white crescentic patch passing over the back of the neck. The back, the very long upper tail-coverts, and a line extending to each side of the neck, are golden-green, and the wings are purple-black, edged on the shoulders with golden-green. The tail is tipped with a narrow band of black. Some individuals have a green mark upon the blue of the head, and others are curiously mottled with white and brown.

THERE are several species of this genus, among which may be mentioned the GREAT JACOBIN (*Florisuga flabellifera*), a truly beautiful bird, and much larger than the preceding species. It is found in Tobago, in the Orinocos, and other neighboring localities. It lives mostly in low marshy situations, chiefly upon plantations abroad, and generally feeds while on the wing. Another curious species is the PIED JACOBIN (*Mellisuga atra*), a bird which is much blacker than either of the preceding. It inhabits the extreme parts of Brazil, from Pernambuco on the north to Rio Janeiro on the south. Like the preceding species, it is very variable in coloring.

THE Helmet-crests are very curious birds, and are at once known by the singular pointed plume which crowns the top of the head, and the long beard-like appendage to the chin. They all live at a very considerable elevation, inhabiting localities of such extreme inclemency that few persons would think of looking for a Humming-bird in such frozen regions. There are several species of Helmet-crest, and their habits are well described by Mr. Linden, the discoverer of LINDEN'S HELMET-CREST, in a letter written to Mr. Gould, and published in his monograph of the Humming-birds.

"I met, with this species for the first time in August, 1842, while ascending the Sierra Nevada de Merida, the crests of which are the most elevated of the eastern part of the Cordilleras of Columbia. It inhabits the regions immediately beneath the line of perpetual congelation, at an elevation of from 12,000 to 13,000 feet above the level of the sea. Messrs. Funck and Schlim found it equally abundant in the Paramos, near the Sierra Nevada, at the comparatively low elevation of 9,000 feet. It appears to be confined to the regions between the eighth and ninth degrees of north latitude.

It occasionally feeds upon the thinly-scattered shrubs of this icy region, such as the hypericum, myrtus, daphne, arborescent espeletias, and towards the lower limit on bejarias, but most frequently upon the projecting ledges of rocks near to the snow. Its flight is swift, but very short; when it leaves the spot upon which it has been perched, it launches itself obliquely

downwards, uttering at the same time a plaintive whistling sound, which is also occasionally uttered while perched; as well as I can recollect. I have never heard it produce the humming sound made by several other members of the same group, nor does it partake of their joyous spirit or perpetual activity. Neither myself nor Messrs. Funck and Schlim were able to discover its nest, although we all made a most diligent search.

“Its food appears principally to consist of minute insects, all the specimens we procured having their stomachs filled with small flies.”

The head and neck of the adult male are black, a line of white running along the centre. The long plumes of the throat are white. Round the neck and the back of the head runs a broad white band. The upper surface of the body and the two central tail-feathers are bronze-green, and the other feathers are a warm reddish bronze, having the basal half of their shafts white. The under surface is a dim brownish bronze. The length of the male bird is about five and a quarter inches. The female is coppery-brown upon the head and upper surface of the body, and there is no helmet-like plume on the head, nor beard-like tuft on the chin. The throat is coppery-brown covered with white mottlings, and the flanks are coppery brown washed with green. The length of the female is about one inch less than that of her mate.

Another species, the WARRIOR of dealers, and the GUERIN'S HELMET-CREST of naturalists (*Oxypogon guerenii*), is an inhabitant of the higher parts of the Columbian Andes, where it is tolerably common. It is easily to be distinguished from the preceding species by a bright green line which passes down the centre of the beard, and of which only a very faint indication is perceptible in the Black Warrior. There is also much more white upon the tail.

THERE are several species of the STAR-THROATED HUMMING-BIRDS, all of which are known by the bright metallic gleam of the feathers on the throat.

The ANGELA STAR-THROAT inhabits Buenos Ayres and many parts of Brazil. It seems not to be a very common bird, or at all events it is rarely found in collections. It is chiefly remarkable for the singular shape of its bill, which is evidently formed for the purpose of enabling the creature to penetrate to the bottom of the curiously-shaped blossoms on which it finds its sustenance. It feeds, apparently, upon the long-blossomed flowers of the lianas, which are very plentiful in the regions inhabited by the Star-throat, and whose cups are always filled with minute insects. The generic name, *Heliomaster*, is very appropriate, signifying Sun-star.

In the male, the crown of the head is metallic green, “shot” with ultramarine blue and gold, and the upper surface of the body is golden-green, with more gold upon the lower part of the back. The wings are purple-brown, and the tail purple-black with dark green gloss. Behind each eye there is a white spot, and a gray streak is drawn through the cheeks. The centre of the throat is a brilliant crimson, shining effulgently as if made of living fire, and edged with long feathers of a deep blue. The under surface is dark green, changing to rich blue in the centre, and on each side of the flanks there is a tuft of white feathers. The under tail-coverts are green, fringed with white.

The female is gold bronze on the upper part of the body, and the crown of her head is grayish. There is no crimson or blue on the throat; it is simply gray, covered with pale brown spots.

THE very remarkable bird whose portrait is seen in the accompanying illustration affords another example of the wonderful adaptation of means to ends which is often found among these birds. In the Sword-bill Humming-bird, sketched on a foregoing page, the beak is enormously lengthened, in order to enable it to feed on the long bell-like flowers wherein it finds its sustenance, and a similar modification of structure may be seen in the Star-throats. In the SICKLE-BILLS, however, which feed on the short curved flowers of those regions, the bill is also short and very sharply curved, in order to suit the peculiar shape of the flowers. This Sickle-bill is a very rare bird, and is found sparingly in Bogota and Veragua. The plumage is not very brilliant in its hues, but the various tints with which it is colored are pleasing in their arrangement, and give to the bird a very pretty aspect.

The crown of its head and the little crest are blackish-brown, and each feather has one small spot of buff on its tip. The upper parts of the body are of a dark shining green, with a slight buffy wash, and on the tips of several of the secondaries there is a little white spot. The two central feathers of the tail are a dark glossy green with small white tips, and the others are of the same hue in their outer webs, greenish-brown on the inner, and largely tipped with white. The under surface is brownish-black, diversified with some dark buff streaks upon the throat and breast, and with white streaks upon the abdomen and flanks; the under tail-coverts are brown fringed with buff. The total length of the bird is about four and a half inches.

ANOTHER species belonging to the same genus, CONDAMINE'S SICKLE-BILL (*Eutoxeres condamini*), is remarkable for its propensity to inhabit high ground. It is a very rare bird, and whenever it is discovered, it is seen feeding among the orchidaceous plants, at an elevation of ten thousand feet above the level of the sea.

THE little group of Humming-birds called the Sun-angels are all remarkable for the exceeding lustre of the feathers which decorate their throats, and the general beauty of their plumage. In nearly every species there is a white or buff crescentic mark immediately below the gorget, and they are all inhabitants of the Andes. Concerning the MARS SUN-ANGEL and its habits Mr. Gould speaks in the following words:—

“Of all the species of the Andean Humming-birds belonging to the genus *Heliangelos*, I regard this as the most beautiful and interesting; it has all the charms of novelty to recommend it, and it stands alone, too, among its congeners, no other member of the genus similarly colored having been discovered up to the present time. The throat vies with the radiant topaz, while the band on the forehead rivals in brilliancy the frontlet of every other species. . . . The country in which this rare bird flies is the elevated region of Northern Columbia, particularly the flat Paramos of Portachuela and Zambador, where Messrs. Funck and Schlim found it at an elevation of from seven thousand to nine thousand feet; they also met with it in the Paramos of Los Conejos at a similar elevation. In those districts there doubtless exist other fine species at present unknown to us, for we can scarcely imagine that these travellers procured examples of all the species of the genera which dwell therein, and which we may reasonably expect to be as rich in the feathered tribes as it is in another department of Nature's wonderful works, Botany.”

In the male bird there is a narrow mark upon the forehead of a deep fiery red, and the crown of the head and the upper surface of the body are bronze-green. Behind each eye there is a very small white spot, and a jetty-black cross-streak is drawn from the angle of the mouth towards the neck. The throat is decorated with a gorget of deep fiery red, below which is a crescent-shaped band of whitish buff, and the abdomen is deeper buff, changing to green upon the flanks. The two central feathers of the tail are bronze-green, and the remainder bronze-



SICKLE-BILL HUMMING-BIRD.—*Eutoxeres aquila*.

brown. The female has no red upon the throat or forehead. There are several species of Sun-angel, among which may be mentioned CLARISSA'S SUN-ANGEL (*Helianthus clarissæ*), a bird which is remarkable for the deep ruby-crimson with which its gorget is dyed. Thousands of these birds are killed annually by means of the deadly blowpipe, and their skins forwarded to Europe, where they are largely employed for various decorative purposes, such as being mounted in ornamental cases of stuffed birds for drawing-rooms, feather fans and fire-screens, or for head-dresses of more than ordinary brilliancy. Two thousand of these birds have been sold at Paris at a single time, merely for the manufacture of head-dresses.

THE two little birds which we now describe are remarkable for the manner in which their heads are decorated. One of them is seen to be a dark little creature, with the exception of a snowy white crown to its head, and a bold streak of white upon its tail. This is the SNOW-CAP HUMMING-BIRD, one of the most curious and the most rare of all the Trochilidæ. Its habits and the localities in which it lives are well described in the words of its discoverer, as quoted by Gould:—

“It was in the autumn of 1852, while stationed in the district of Belen, Veraquas, New Grenada, that I obtained several specimens of this diminutive variety of the Humming-bird family.

“The first one I saw was perched on a twig, pluming its feathers. I was doubtful for a few moments whether so small an object could be a bird, but on close examination I convinced myself of the fact and secured it. Another I encountered while bathing, and for a time I watched its movements before shooting it. The little creature would poise itself about three feet or so above the surface of the water, and then as quick as thought dart downwards, so as to dip its miniature head in the placid pool; then up again to its original position, quite as quickly as it had descended. These movements of darting up and down it would repeat in rapid succession, which produced not a moderate disturbance of the surface of the water for such a diminutive creature. After a considerable number of dippings, it alighted on a twig near at hand, and commenced pluming its feathers.”

The colors of this little bird are so dark, that it appears to be uniformly brown, until it is examined more closely, when it is seen to be of a coppery hue, on which a purple reflection is visible in extreme lights, the copper hue taking a warmer tint towards the tail. The crown of the head is dazzlingly white, and the tips of all the tail-feathers, and the bases of all except the two central, are also white.

ON the same drawing may be seen another remarkable little bird, possessed of a most beautiful and graceful crest. This is the SPANGLED COQUETTE, an excellent example of the very remarkable genus to which it belongs. All the Coquettes possess a well-defined crest upon the head, and a series of projecting feathers from the neck, some being especially notable for the one ornament, and others for the other.

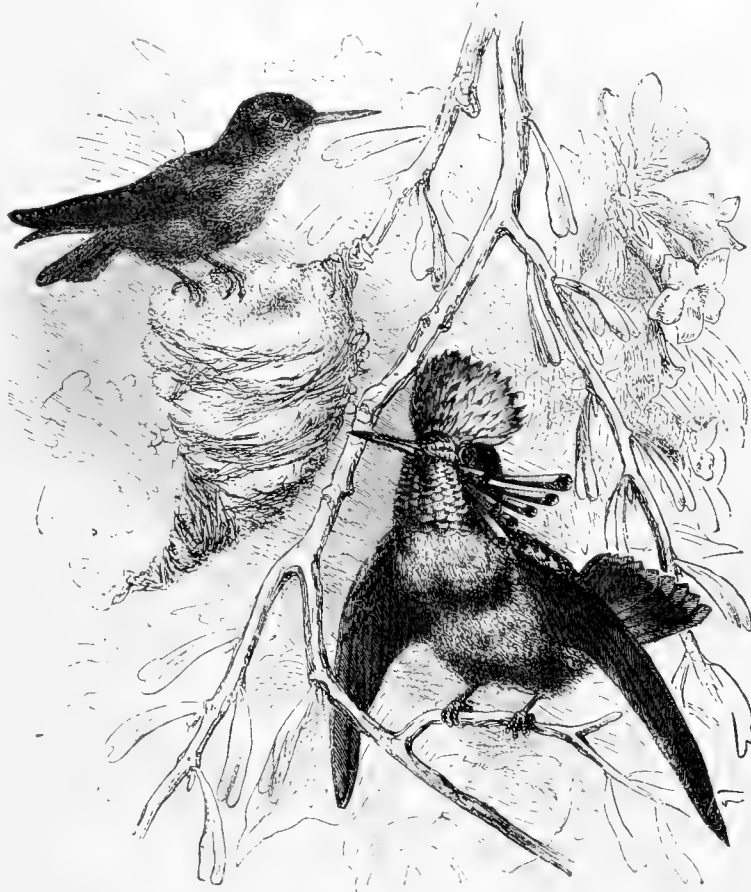
The Spangled Coquette is a native of several parts of Columbia. The singular crest is capable of being raised or depressed at the will of the bird, and produces a great effect in changing the whole expression of the creature. When raised to its fullest extent it spreads itself like the tail of the peacock, and much resembles the crest of the king tody, a bird which will be described in a future page. When depressed, it lies flat upon the bird, and is so large that it projects on either side, barely allowing the little black eyes to gleam from under its shade.

The crown of the head and the crest are light ruddy chestnut, each feather having a ball-like spot of dark bronze-green at the tip. The throat and face are shining metallic green, below which is a small tuft of pointed white feathers that have a very curious effect as they protrude from beneath the gorget. The upper parts are bronze-green as far as the lower part of the back, where a band crosses from side to side, and the rest of the plumage is dark ruddy chestnut as far as the tail. The tail is also chestnut-brown, with a slight wash of metallic green. The female has no crest nor green gorget.

THE TUFTED COQUETTE is one of the rare species of this beautiful genus.

It seems to be entirely a Continental bird, not being found in any of the West Indian Islands, and its principal residence seems to be in Northern Brazil and along the course of the Amazon as far as Peru. It may be readily known from the other species of Coquettes by the colors of its head, crest, and neck-plumes. The crest and top of the head are a rich ruddy chestnut, and the upper surface of the body is bronze-green, excepting the wings, which are purple-black, and a broad band of white which crosses the lower part of the back. From the white band to the insertion of the tail is bright chestnut. The tail is also chestnut, except the two central feathers, which are green at the latter half of their length. The forehead and throat are emerald-green, and the neck-plumes are snowy white tipped with resplendent metallic-green.

The female has no crest nor neck-plumes, and the band of white across the back is very narrow. The total length of the bird is about two inches and a half.



TUFTED COQUETTE.—*Lophornis ornata*.

ANOTHER species of this remarkable genus is GOULD'S COQUETTE (*Lophornis gouldii*). This species is remarkable for the beautiful pure white of the neck-tufts, and their green tips. When the crest and tufts of this bird are depressed they lie closely upon the other feathers, the crest coming to a sharp point upon the back of the neck, and the neck-tufts also coming to a point upon the shoulders. This species seems to be exclusively continental, and not to be found on any of the West Indian islands. At present it is supposed to inhabit the country from the embouchure of the Amazon to its sources in Peru. It is a very rare bird.

The crest of the male is rich chestnut-red, the upper surface is bronze-green, and a band of white crosses the lower part of the back. The forehead and throat are emerald-green. The female is comparatively a dull bird, having no crest nor neck-plumes. The length of this species is about two and a half inches.

BUT the most singular of all the genus, if not the most unique and remarkable of all the Humming-birds, is the PRINCESS HELENA'S COQUETTE (*Lophornis hélénæ*). This wonderful bird is a native of Vera Paz in Guatemala.

The curious forked crest and face are green, and the throat is of a metallic effulgent emerald in the centre, and surrounded with a series of long narrow white feathers, those which start from the neck being longest and generally edged with blue-black, while the others are much shorter and of a jetty black. From the back of the head start six long hair-like feathers, three on each side. The upper surface of the body is coppery-bronze, and a buff band crosses

the lower end of the back. The female is quite an ordinary little bird, without crest, neck-plumes, or long hair-feathers, and is generally of a dull bronze-green color, and grayish-white below, sprinkled with green.

THERE are many species of VIOLET-EARED Humming-birds, all of which are easily recognized by means of the patch of violet feathers which is placed on each side of the face.

The BOLIVIA VIOLET-EAR inhabits the country from which it derives its popular title, and is one of the migratory birds, passing over a considerable tract of territory in the course of its travels. The localities which it most prefers are the valleys and low grounds where maize is cultivated, and in such situations it is very plentiful. The character of the species is eminently pugnacious, and it will not permit any other bird to approach its dominions. It is a very pretty bird: the general color of the upper parts of the body is golden-green, a tint which extends to the two central feathers of the tail; the remainder of the tail is deep-blue green. The throat and breast are shining green, and the chin, abdomen, and a patch above the eye, are deep blue. The length of the bird is rather more than three inches.

THE lovely little SPARKLING-TAIL is an inhabitant of Mexico, and is found very plentifully in Guatemala, where it is remarkably familiar and visits the habitations of mankind without any reluctance, haunting every garden wherein are blooming flowers, and altogether displaying a wonderful amount of confidence. The nest of this species is very tiny, rounded and beautifully woven from various delicate fibres, cottony down, and spiders' webs, and is covered externally with lichens applied in a very artistic manner. In this nest are laid two eggs, hardly bigger than peas, of a delicate semi-transparent pearly white, and reminding the observer of the eggs of the common snail. The nest is always stuck upon a leaf or some slight twig by means of spiders' webs, so that instead of the great spider catching and eating the Humming-bird, as Madame Merian supposed, the Humming-bird is the real depredator, and robs the spider.

In coloring and form the two sexes are quite dissimilar.

The male is bronze-green above, with the exception of the bold crescent-shaped white feathers on the lower part of the back. The throat is rich metallic-blue, becoming velvety-black in certain lights, because each feather is black at the base and blue at the tip. The wings are of a rich dark purple-brown. Round the neck runs a broad snowy-white crescentic band, and the whole under surface is bronze-green, except the under tail-coverts, across which runs a band of white. The tail is very curious, exhibiting very many tints, and not very easy to describe. The two central feathers are rich shining green; the next green marked with bronze; the next dark brown, with two triangular white spots on the inner web, one near the middle and the other at the tip; the two central feathers are dark brown for the first half of their length, then comes a broad band of deep rusty-red, then a broad white band, then a brown band, and the tip is white. The whole length is about four inches.

The female is of a rich bronze-green on the upper surface of the body, and the two crescentic marks on the lower part of the back are buff instead of white, as in her mate. Her tail is short, and of a purple-black bronzed at the base; all the feathers except the two central ones are tipped with white and ringed with buff. The under surface is rusty-red, becoming darker on the under tail-coverts. The length is not quite three inches.

WE now come to one of the most imposing of all the Humming-birds, namely the SAPHO COMET, or the BAR-TAILED HUMMING-BIRD, as it is often called. It is a native of Bolivia, and is a migratory species, generally going to Eastern Peru in the winter. It is a remarkably familiar bird, haunting the gardens and orchards while the trees are blossoming, especially while the apple-trees are in flower. The males are extremely fierce and pugnacious, chasing each other through the air with surprising perseverance and acrimony. Of these Birds Mr. Bonelli gives a very spirited description:—

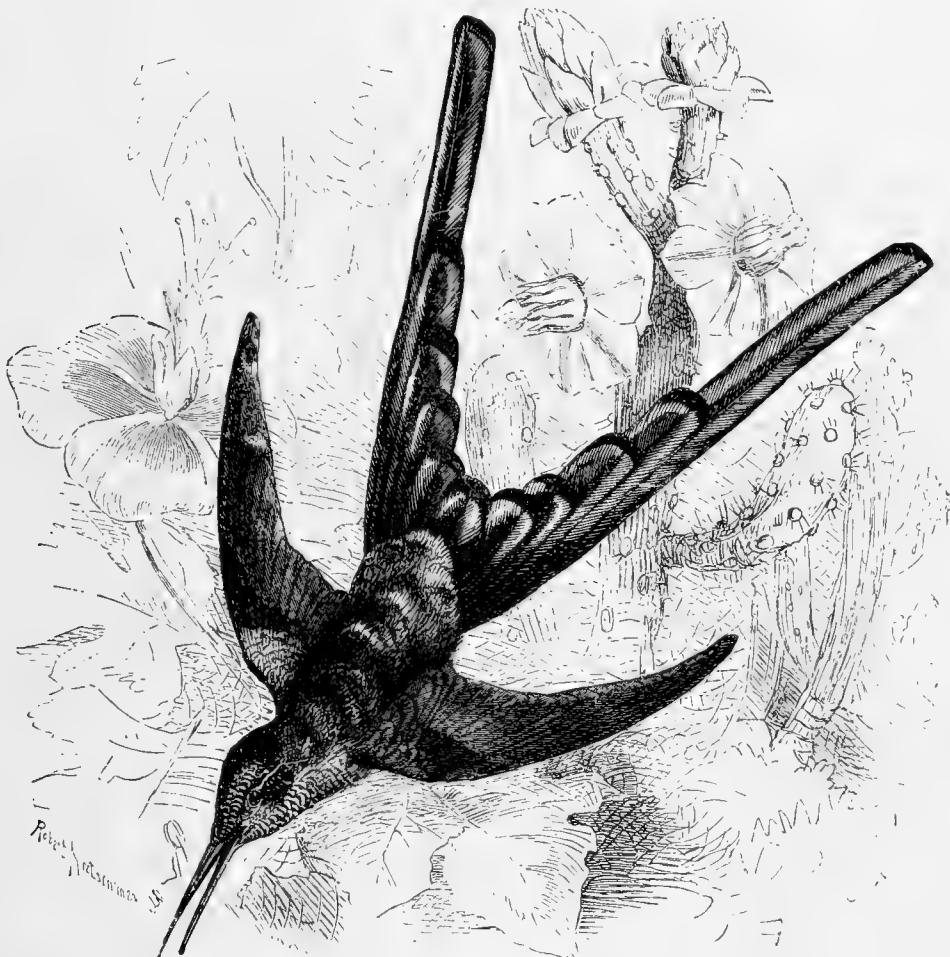
“It arrives in the environs of Chuquesaqua in the months of September and October, and takes up its residence in the shrubberies of the city and the gardens of the Indian cottages;



the hill-side of the neighboring country, clothed with indigenous trees and shrubs, also affords it a fit place of abode, whence it descends several times a day to the cultivated plains below, particularly to the fields of maize, pulse, and other leguminous plants; the rich flowers of the large cacti are also frequently visited, as they afford it a constant and abundant supply of insect food.

“Soon after their arrival the task of incubation is commenced; and when the summer is over, both the old and the young, actuated as it were by the same impulse, wend their way southward, to return again when the spring has once more gladdened the earth.

“The nest is a somewhat loose structure, outwardly composed of interlaced vegetable fibres, slight twigs, moss, etc., and frequently lined with soft hairs like those of the viscacha,



SAPPHO COMET.—*Spharganura sappho*.

with the lower portion prolonged considerably below the bottom of the cup-shaped interior, which is about an inch and a half in diameter and an inch in depth; the total length of the nest averaging from two and a half to three inches. The nest is placed in situations similar to those selected for the same purpose by the spotted fly-catcher, namely, against the sides of the walls, supported or entirely sustained by any hanging root or twig that may be best adapted to afford it security; the part of the nest next the wall is much thicker, but of a looser texture than the similar portion of the true structure. The eggs are two in number, oblong in form, of a pure white, and about half an inch in length by about five-sixteenths of an inch in breadth.

“The difficulty of shooting these birds is inconceivably great, from the extraordinary turns and evolutions they make when on the wing; at one instant darting headlong into a flower, at the next describing a circle in the air with such rapidity, that the eye, unable to

follow the movement, loses sight of it until it again returns to the flower which at first attracted its attention."

Magnificent as are these gorgeous birds when mounted as specimens, they lose much of their beauty in the needful handling, and give but a faint image of their real effulgent beauty. Many specimens are injured by being left too long before the skins are removed from the bodies, and in the lands where the Sappho lives, putrefaction takes place with such rapidity, that a delay of a few hours is fatal to the perfection of the skin. It has been found that these delicate creatures were much injured by the shot or other missiles employed in their capture, so a very ingenious trap was made for their especial benefit. It was noticed that the birds were accustomed to dash into the long pendent blossoms of certain flowers, so the ingenious collector put a little bird-lime into the bottom of every blossom, and thus secured many an unwary Humming-bird as it came to feed.

In the male bird the head, neck, the upper part of the back, the face, the sides of the neck, and great part of the under surface, are light green, bronzed on the sides of the neck and face. The lower part of the back is a deep crimson-red. The wings are purple-brown, and the throat metallic-green. The tail is ruddy brown at its base, and the remainder of its length is a fiery red, tipped with a velvety-black band. The female is smaller than the male, but is not possessed of his length of tail nor brilliancy of hue, her throat being white spotted with green, and the only piece of crimson being a patch on her back.

THERE is another species belonging to the same genus, which has been called the PHAON COMET (*Comètes phaon*), in allusion to the classical name of the preceding species. This is equally magnificent with the former, and is altogether a larger bird. It may be known from the Sappho by the color of the tail, which is wholly of a crimson-red. It inhabits Peru and Bolivia.

ON the engraving will be seen a much smaller bird, the YARRELL'S WOODSTAR.

This pretty creature is very rare, and inhabits the eastern parts of Peru and Bolivia. Mr. Gould thinks it is limited to the localities between the mountainous ranges and the sea. In the male, the crown of the head, the whole upper surface of the body, and the four central tail-feathers, are of a light yellow-green, and the chest, the middle of the abdomen, and the under tail-coverts are grayish-white. Upon the throat there is a gorget of purple-blue, "shot" with lilac in some lights, and of a brighter blue in the centre. The wings are grayish-brown, and the lateral feathers of the tail are dark brown. The total length of the bird is about two and a half inches.

AMONG other species belonging to the same genus may be mentioned the SHORT-TAILED WOODSTAR (*Calothórax micrúrus*). This odd little bird is remarkable for the extreme shortness of its tail-feathers, which when closed are, with the exception of the two central feathers, hidden under the upper tail-coverts. It is generally seen in the mimosas, and hums very loudly when flying.

THE RUBY AND TOPAZ HUMMING-BIRD derives its name from the coloring of its head and throat, the former being of a deep ruby tint, and the latter of a resplendent topaz. Sometimes it is called the Ruby-headed Humming-bird, and it is also known under the name of the Aurora. It is very common in Bahia, the Guianas, Trinidad, and the Caraccas, and as it is in great request for the dealers, is killed by thousands annually. There is no species so common in ornamental cases of Humming-birds as the Ruby and Topaz. It makes a very beautiful nest, round, cup-like, and delicately woven of cotton and various fibres, and covered externally with little leaves and bits of lichen.

The plumage of this species is extremely variable, but may be described briefly as follows. The forehead, the crown, and the nape of the neck are metallic ruby-red, and the chin, throat, and chest are effulgent topaz. The upper parts of the body are velvety bronze-brown, and the wings are purple-brown. The tail is rich chestnut-red, tipped with black, and the abdomen

is a dark olive-brown. The female has none of the ruby patches on the head, but retains a little of the topaz on the throat.

A VERY striking and remarkable bird, whose long forked tail extends to an astonishing length, is the BLUE-TAILED SYLPH (*Cyanthus cyanurus*). It is one of the most beautiful of the birds which are called by the name of Sylphs, in allusion to their beautiful form and graceful movements.

This beautiful bird is found in the temperate regions of the Andes, its range extending as far as Panama. It also inhabits the sides of the Cordilleras, at an elevation of five or ten thousand feet above the level of the sea, as the vegetation of those regions is most luxuriant in spite of the coldness of the climate, and affords plentiful nourishment for the Humming-birds. The flower on which it usually feeds is the *Sedum quitense*, and its flight is extremely rapid as it darts from one flower to another.

In the male bird the crown of the head is of a metallic golden-green, and the general color of the body is a bronze-green, becoming browner on the under parts. Upon the throat is a gorget of the most intense purple-blue, and the wings are purple-brown. The two central feathers of the magnificent tail are shining metallic-green, the two next are black at their base and rich blue towards their extremities, and tipped and edged with bright metallic-green, "shot" with blue. The outer feathers are black for the first half of their length, and the remaining portion is metallic steely-blue. Some white feathers are scattered across the end of the abdomen, the under tail-coverts are green, and there is a little white dab above the eye and another behind it.

The female is something like the male, but not so bright in coloring. The throat is grayish-white covered with green spots, and the abdomen is rusty-red, changing into bronze-green upon the flanks. The young male is duller in color than the adult, the tail is shorter, and there is no blue part upon the throat. Like many other of the Humming-birds, this species is extremely variable in its coloring, especially among the young males. The length of this species is about seven inches. It is not, however, so remarkable for the length of its tail as the TRAIN-BEARER (*Lesbia amaryllis*), a native of Quito. This bird, although a small creature, possesses a long and very straight tail, something like that of the Polytmus or the Sappho, but much larger in proportion, the length of the elongated feathers being nearly six inches.

ONE of the most striking forms among the Humming-birds is that which is exhibited by DE LALANDE'S PLOVER-CREST.

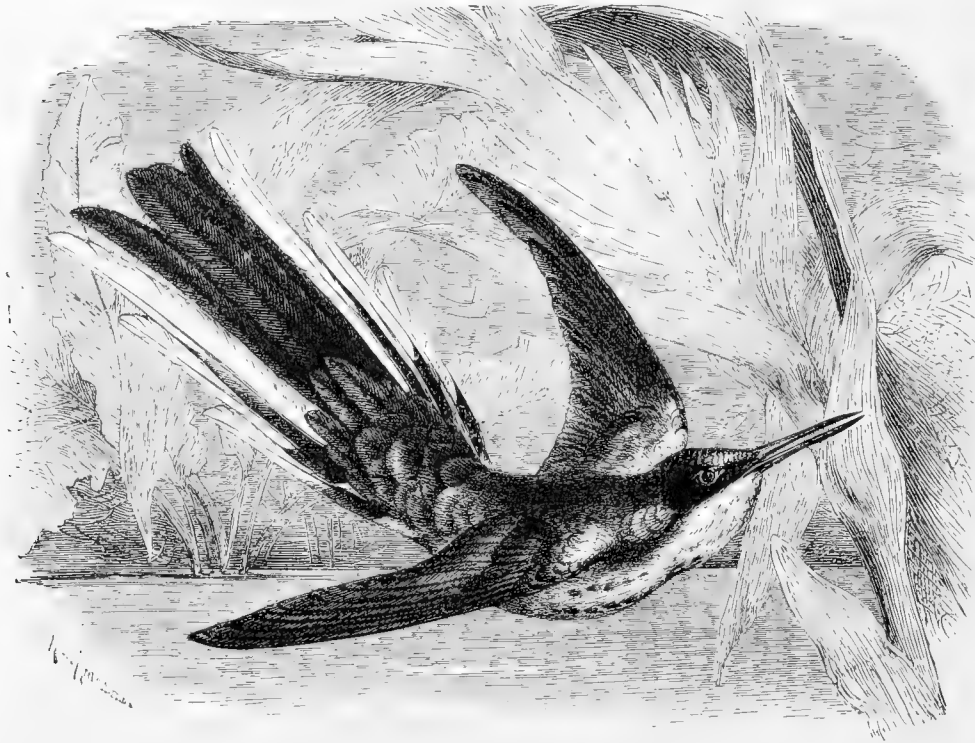
This singular bird is remarkable from the fact that the elevated plume which is placed upon the head is terminated by a single feather, instead of being double, as is usually the case with crested birds. This species inhabits the southern parts of Brazil. The nest which it builds is very pretty, and is ingeniously woven into a tuft of leaves or twigs at the extremity of some very slender branch, so that the whole structure droops downwards, and may be reckoned among the pensile nests. Its form is much elongated, and the materials of which it is composed are delicate pieces of roots, mosses and lichens, and spiders' webs.

The male bird is the sole possessor of the beautiful crest, the female being without that decoration. The crest and the top of the head are bright green, with the exception of the long single feather, which is jetty black. The upper surface is green washed with bronze, and the breast and abdomen are of an intense shining violet. Behind the eye there is a small white streak.

A HUMMING-BIRD, which in the accompanying illustration is represented with outspread wings and a rather curiously formed tail, is the CAYENNE FAIRY (*Heliothrix auritus*), an inhabitant of Guiana, Cayenne, and the forests near the mouth of the Amazon.

In the male, the general hue of the upper surface is glossy golden-green, very light on the forehead. The four middle feathers of the tail are blue-black, and the three exterior feathers are white. A jetty black line is drawn across each side of the face, including the

eye in its breadth, and terminated with a small tuft of violet-blue; below the black runs a luminous green line. The under parts of the body are snowy white.



CAYENNE FAIRY. — *Heliothrix aurata*

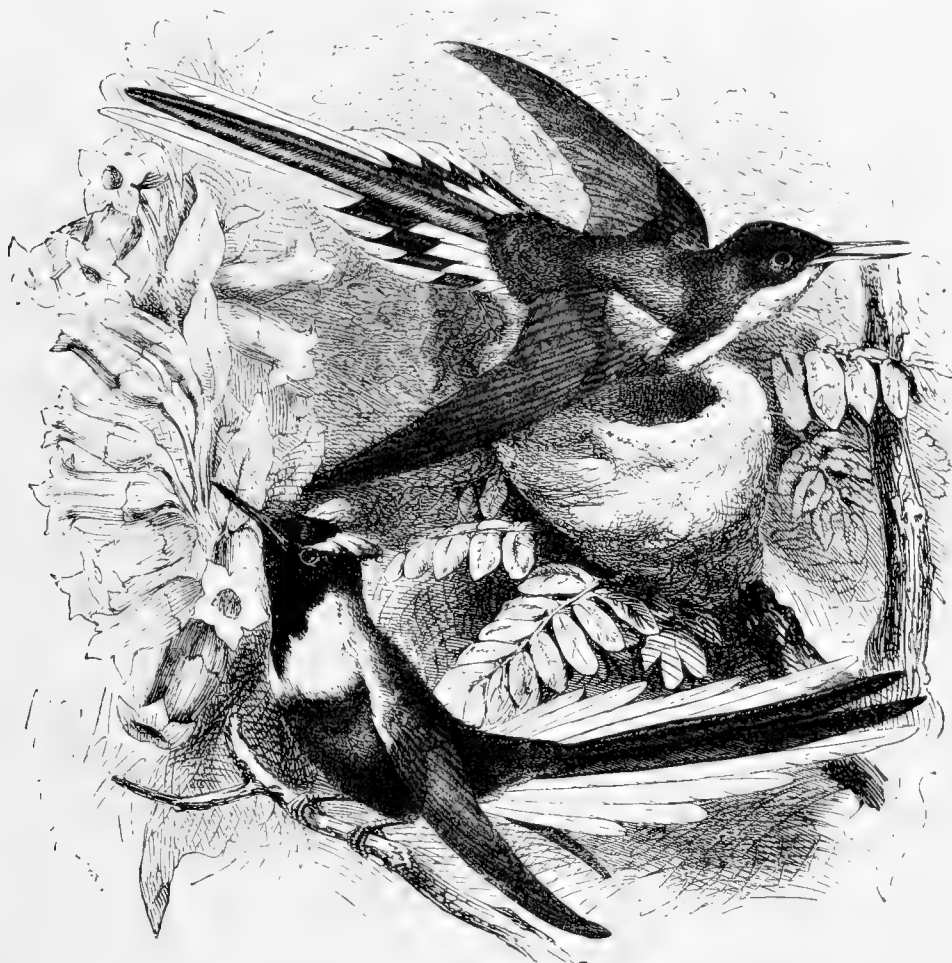
THE very beautiful bird which has been appropriately named the SUN-GEM inhabits the mountain ranges of Brazil, especially those of Minas Geraes, where it seems, as Mr. Gould poetically remarks, to be a veritable gem sprung out of the mountain and suddenly gifted with life. It may generally be found in the open country in nursery grounds, where it finds abundance of the small flowers on which it feeds. During the rainy season it resorts to the forest, and finds its nourishment in the orchidaceous plants which flourish there in such rich profusion.

The male bird is remarkable for a very conspicuous crest, which starts from either side of the head, and has gained for the bird the title of Double-crested Humming-bird. The name "cornuta," or horned, refers to this peculiarity. The forehead and crown of the head are azure blue, and the neck fiery crimson at its base, changing to green near the centre, and taking a rich golden radiance at the extremity. The throat, the sides of the face, and the pendent tuft of feathers from the chin are velvety-black. The back is bronze-green, and the wings purple-brown. The two central feathers of the tail are olive-brown and the rest white, edged with the same tint. The breast, sides of the neck, and the upper part of the abdomen are grayish-white, and the remainder of the under surface is bronze-green. The female has nearly as long a tail as the male, but her throat is buffy-white, and she has no crest on the head nor beard hanging from the chin.

A SINGULAR species is the AVOCET HUMMING-BIRD. It is remarkable for the curious manner in which the bill is curved upwards at the extremity, after running nearly straight for the greater part of its length. As this formation of beak bears some resemblance to that which is found in the well-known Avocet, the present species has been named the Avocet Humming-bird. When the first specimen of this bird was brought to Europe, the peculiar shape of the beak was thought to be accidental, and owing to pressure against the side of the box in which the bird had been packed; but it is now clear that the structure is intentional,

and that, in all probability, it subserves some very important purpose. Some persons have suggested, with some show of reason, that the beak is recurved in order to enable the bird to feed upon the nectar and insects which reside in the deepest recesses of certain tubular flowers.

It is a pretty bird, but is not gifted with the gorgeous and dazzling hues which are so lavishly shed upon the plumage of many Humming-birds. The head and the whole of the upper parts of the body are shining golden-green, and the throat is bright emerald. The under parts are also golden-green, with the exception of a black streak that runs from the



SUN-GEM.—*Heliactinurus cornutus*.

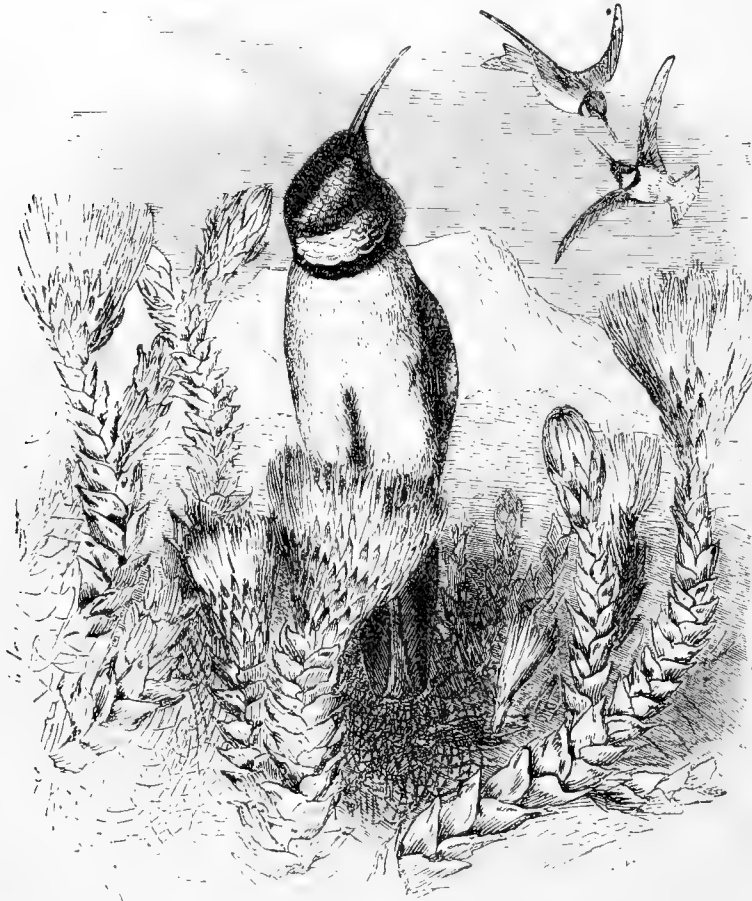
breast through the centre of the abdomen. The wings are purple-brown, and the lateral feathers of the tail are topaz.

OUR ideas of Humming-birds are naturally associated with the tropical climate and burning sun of the regions which they inhabit, and few persons would think of looking for any species of Humming-bird in a locality where the temperature seldom rises above that of an ordinary winter in York State. Yet the CHIMBORAZIAN HILL-STAR is never found except upon the elevated portions of the lofty mountains from which it derives its name, and inhabits exclusively the very edges of the line of perpetual snow.

This bird is never seen on any spot that is less than twelve thousand feet above the level of the sea, and is most commonly seen at a much greater elevation, specimens having been obtained on spots that are at least sixteen thousand feet above the ocean. Beyond this height the creature cannot live, as the line of perpetual snow commences at that point, and places an effectual barrier against the growth of the plants on which the bird finds its subsistence. The two sexes are seldom seen near each other, the males preferring to haunt the

extremities of the loftiest branches, while the females hover near the ground. Partly owing to this peculiarity, and partly on account of her sober tinting, the female generally escapes observation. The plant on which the Chimborazian Hill-star is usually found is the *Chuquiragua insignis*, a flowering alpine shrub, with large pale yellow blossoms, and the bird is so closely attached to this shrub, that it is never found at any great distance from its golden flowers.

The nest of this species is made of lichens, and is fastened to the side of a rock in some situation where it is protected by an overhanging ledge of rock.



CHIMBORAZIAN HILL-STAR.—*Oreotrochilus chimborazo*.

Except upon the head and throat, the Chimborazian Hill-star is not so brilliantly clothed as many of its compeers, but upon those parts the creature shines with rainbow lightness. The general color of the upper parts of the body is pale dusky olive-green, with the exception of the wings, which have the purple-brown tint usual among Humming-birds. The under parts are white, deepening into dusky-black upon the under tail-coverts, and there is a line of black down the centre of the abdomen. The head and throat are of the brightest and most resplendent blue, with the exception of an emerald-green patch in the centre of the throat. This patch is triangular in shape, and has one of the angles pointing upwards. Round the neck runs a broad collar of deep velvety-black, abruptly dividing the brilliant

hue of the head and throat from the plain black and white of the chest and abdomen, and giving the bird an appearance as if the head and throat of some brightly colored bird had been joined to the neck and body of a plainly clad individual of another species. The two central feathers of the tail are nearly of the same hue as that of the back, the two exterior feathers are white for the first third of their length, and greenish-black for the remaining two-thirds, while the other feathers are white, edged with greenish-black.

The female is a very soberly clad bird, being olive-green upon the head, white spotted with green upon the throat, and the remainder of the body olive-green, white, and brownish-black.

THERE are several species of Hill-stars, among which the PICHINCHIAN HILL-STAR is the most remarkable.

This bird is very local, inhabiting the volcanic mountain of Pichinca, in the republic of Ecuador, and being only found in a zone of five or six hundred feet in width, at an elevation of about eleven hundred feet above the level of the sea. It is a very remarkable fact, that although both these species inhabit volcanic mountains within thirty miles of each other, and are found at nearly the same elevation, the Pichinchian Hill-star is never seen upon Chimborazo, nor the Chimborazian Hill-star upon Pichinca. This species is very like the preceding but may be easily distinguished by the absence of the triangular green spot upon the throat.

A VERY elegantly shaped little bird is the GILT-CRESTED HUMMING-BIRD (*Orthorhynchus exilis*). It inhabits Martinique and other West Indian islands, where it is always found upon the low-lying grounds.

In color it is very pretty, the general hue of its body being green with bronze reflections, and its crest glowing with golden-green and emerald; the emerald hue being most conspicuous towards its point, and the gold towards the base. The nest is a very pretty compact little structure, beautifully rounded, and composed chiefly of cotton fibres, intermixed with the dried involucre of certain composite plants, and bound together with spiders' web.

THE beautiful little VERVAIN HUMMING-BIRD is one of the minutest examples of feathered life that are at present known to zoologists. In total length this bird does not measure three inches; while, as the tail occupies nearly an inch and the head half an inch, the actual length of the body will be seen to be not quite an inch and a half. It is a native of Jamaica, and has been admirably described by Mr. Gosse, while treating of the birds which inhabit that island.

The name of Vervain Humming-bird has been given to this tiny creature, because it is in the habit of feeding on the blossoms of the West Indian Vervain, but it is also known under a variety of other titles, and has been described by many scientific writers under different names. Speaking of this bird, Mr. Gosse says:—

“The West Indian Vervain (*Stachytarpheta*) is one of the most common weeds in neglected pastures, shooting up everywhere its slender columns set around with blue flowers to the height of a foot. About these our little Humming-bird is abundant during the summer months, pecking the azure blossoms a few inches from the ground. It visits the spikes in succession, flitting from one to another exactly in the manner of the honey-bee, and with the same business-like application and industry. In the winter, the abundance of other flowers, and the paucity of vervain blossoms, induce its attentions to the hedge-rows and woods.

“I have sometimes watched with much delight the evolutions of this little species at the moringa tree. When only one is present, he pursues the round of the blossoms soberly enough. But if two are at the tree, one will fly off and suspend himself in the air a few yards distant, the other presently starts off to him, and then, without touching each other, they mount upward with strong rushing wings, perhaps for five hundred feet. They then separate, and each starts diagonally towards the ground like a ball from a rifle, and wheeling round comes up to the blossoms again, and sucks as if it had not moved away at all.

“Frequently one alone will mount in this manner, or dart on invisible wing diagonally upwards, looking exactly like a humble-bee. Indeed, the figure of the smaller Humming-birds on the wing, their rapidity, their wavering course, and their whole manner of flight, are entirely those of an insect, and any one who has watched the flight of a large beetle or bee will have a very good idea of these tropic gems painted against the sky.”

The Vervain Humming-bird appears to be less susceptible of human influence than the Ruby-throated and the Long-tailed Humming-birds, for although Mr. Gosse succeeded in capturing several specimens of these beautiful little creatures, and confined them in a room, they were so hopelessly timid that nothing could be done with them. More than once he secured the female as she was sitting upon her eggs, and removed her, together with her nest, into a gauze-covered cage, hoping that she would continue her labors while in captivity, and produce a brood of young that would be familiar with mankind from their earliest birth. Maternal love, however, was not proof against the power of fear, and in every case the poor little bird forsook her eggs, fluttered about the cage aimlessly, and died within twenty-four hours.

The general color of this beautiful little bird is a brilliant metallic green, the wings being, as usual, purple-brown, and the tail deep black. The throat and chin are white, sprinkled profusely with little black spots, and the breast is pure white. The abdomen is also white, but diversified with a slight green tip to each feather, and the flanks are bright metallic-green nearly as resplendent as upon the back. The under tail-coverts are white, with a few very pale green spots. The colors of the female are rather more dull than those of her mate, the green being tinged with yellow, and the under parts without the green spots. The first half

of the tail is yellowish-green, and all the feathers of the tail, with the exception of the two central feathers, are furnished with white tips.

The nest of the Vervain Humming-bird is very small, in accordance with the dimensions of the architect, is round and cup-like in shape, and beautifully constructed of cotton fibres and other soft and warm substances. As is the case with the nests of almost all the species of Trochilidæ, the rim is so made as to curve slightly inwards, and is, in all probability, constructed for the purpose of preventing the eggs from rolling out of the nest when the "procreant cradle" is rocked by the tempestuous winds of the tropics. A somewhat similar structure may be seen in the nests of many other perching birds, and I well remember seeing the nest of a goldfinch which had been built at the extremity of a long and slender horizontal spray of oak, and which was completely turned inwards at the rim. No ordinary wind could have shaken the eggs out of the nest, as even when the branch was seized and drawn towards the ground, the eggs still remained in their places.

In one species, which was watched by Captain Lyon, the nest was not completed until the young birds were nearly fledged.

The mother bird built a small and rather shallow nest, in which she laid two eggs, and began to sit as usual. As soon, however, as the young were hatched, she set to work again at her nest, and added fresh material round the edges, so as to raise the sides and prevent her offspring from tumbling out of their house upon the ground. In proportion to the growth of the young, the mother increased the height of her walls, so that by the time the young were ready to fly, the nest had been transformed from a shallow, saucer-like structure, into a round and deeply-hollowed cup. It has been suggested in explanation of this curious behavior on the part of the mother bird, that her completed nest had been destroyed, and that she was forced to run up a hasty kind of hut for the reception of her young, and could only finish it when she was relieved from the constant duty of sitting on her eggs.

IN the nesting of the Humming-birds, there is one peculiarity that is worthy of a passing notice. In almost every case where a nest has hitherto been discovered, the materials of which it is composed are thick, soft and woolen, and in all instances are arranged in such a manner as to shield the eggs even from the effects of rain or atmospheric influences, as long as the mother bird is seated upon them. Mr. R. Hill, who has paid close attention to the nests of the Humming-birds, has ingeniously hit upon a connection between their structure and the electrical conditions of the atmosphere.

The injurious effect of a sudden increase of electricity is very strongly marked upon the young of all animals, the hurtful influence being in proportion to the growth of the victim. Eggs are peculiarly susceptible to the influence of electricity, and even when the chick is partially matured, are often killed by a passing thunder-storm. In climates where thunder-storms are so frequent and violent as in the lands which are inhabited by these birds, it is needful that the eggs should be protected from the deadly influence, and we accordingly find that the nests are oval or rounded in shape, and are made of substances which are bad conductors of electricity. In accordance with this principle, Mr. Hill proceeds to remark that "in tropical climates, there are a greater number of birds that build close nests than in the temperate climates of Europe. In the West Indian Islands, with the exception of the pigeon tribes and the Humming-birds (which latter build deep, thick, cottony nests), the nests are almost uniformly circular coverings of dried grass, varied by intermingled cotton, moss and feathers, with an opening from below, or an entrance at the side.

"The Banana bird weaves a hammock of fibres, sometimes of horse-hair, deep and purse-like, and loosely netted; the *Musicapa olivacea* (a fly-catcher), a hanging cot of withered leaves, straw, moss, fibrous thread, and spiders' webs fitted together; and the mocking-bird builds in the midst of a mass of wicker-work a neat nest of straw lined with hair. The woodpecker and the parrots take to hollow trees, but I hardly know any arboreal besides which constructs any nest that is not wholly covered or domed over.

"Very many insects that are exposed to the air during their metamorphoses weave coverings of silk and cotton, in which they lie shrouded, at once impenetrable to moisture, and



uninfluenced by the disturbances of the atmosphere. It would seem that the object, whatever it be, is the same in both. It is not for warmth that the insects spin these webs, for they form their coverings of silk and cotton in the hottest period of the year; and I find that whilst all our birds that build open nests (the Humming-birds build in May, June, and later) breed early, those that construct the domed and spherical ones nestle in the season between the spring and autumnal rains, when the air is saturated with electricity, and is in a state of constant change."

It is an interesting fact that so many as four hundred different species of birds—the Humming-birds—should have no representatives in the Old World. The Sun-birds of Africa and Asia appear nearest them in external features. Fifteen species are now enumerated as North American birds. In the tropical portions of South America the remaining species are found. Single species are occasionally seen in the Arctic regions, and as far south as Patagonia. The food of these little creatures consists almost entirely of insects, which they capture in the recesses of flowers. So varied are these little forms, one hundred and thirty genera are recognized among them. Ten genera are found in North America. The habits and manners of Humming-birds are peculiar, differing very markedly from any other birds. Their flight and movements generally resemble those of insects, though usually much more rapid. They are so nearly like the great nocturnal Sphinxes in their flight, that some of the latter have been called Humming-bird Moths.

They are not seen in forests, but love the sunshine and the flowers. Some feed during the twilight; probably because the insects they favor are out more abundantly at such times. Their pugnacious habits are well known. They attack without hesitation birds larger than themselves. So large a bird as the Sparrow Hawk has been seen to suffer from the attack of one of these little creatures. The very smallness was in his favor; for, with sufficient courage and a disposition to fight, he follows up blow after blow with his sharp bill, until his enemy retreats with disgust.

The nests of the Humming-bird are well-known marvels of beauty. The eggs are usually two, and pure white. Though these birds have been said to have no voice, Mr. Bell, the distinguished taxidermist of Audubon's staff, avers that he has distinctly heard one of the Central American species sing, uttering a fine, low note; and others have since testified the same.

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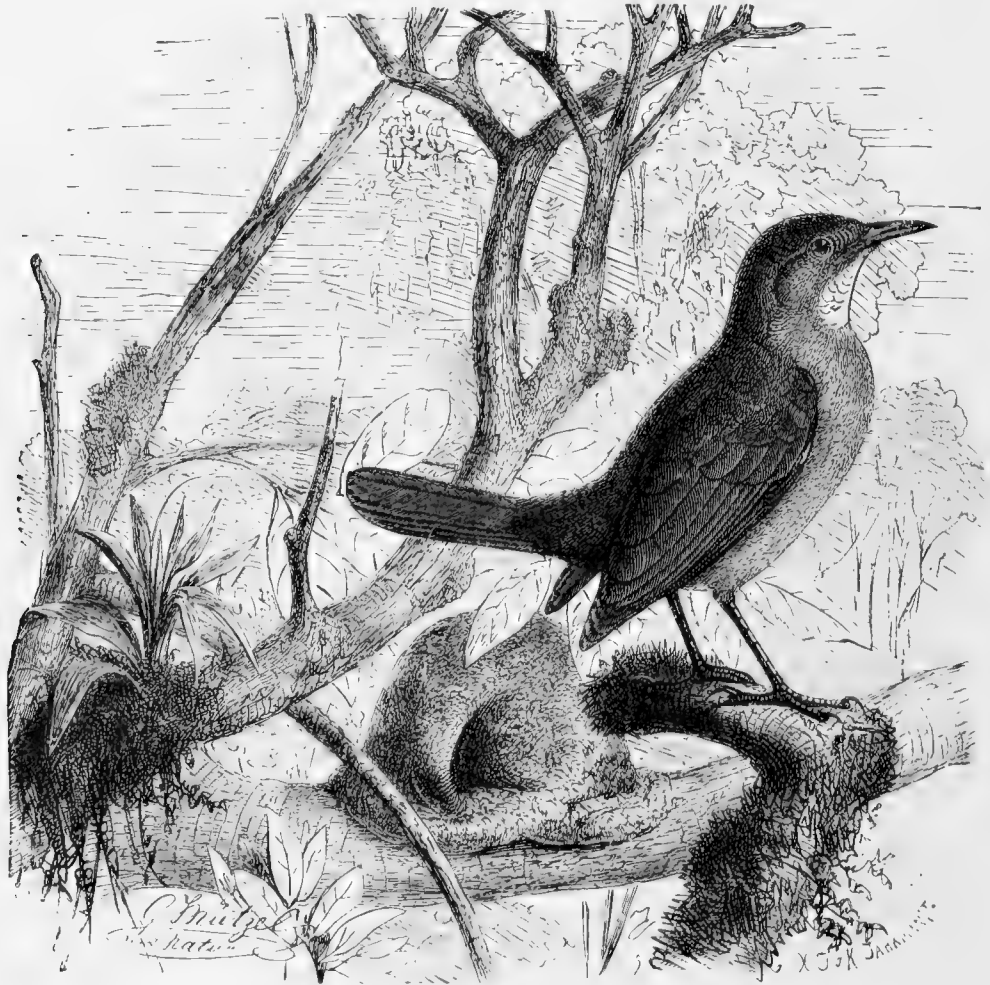
## CREEPERS.

WE now arrive at the large family of the CERTHIDÆ, or CREEPERS; a family which includes many birds of very different forms, and which can only be known to belong to it by their anatomical structure. In fact, the Creepers may be considered as analogous among birds to the antelopes among mammalia, and be considered as a "refuge for the destitute," formed for the purpose of receiving all the slender-billed birds which cannot find accommodation in any other more definite family.

The Certhidæ are mostly small birds, but there is one notable exception in the person of the celebrated lyre-bird of Australia. Many of them are good songsters, and they all feed chiefly upon insects, which they pick out of the bark of trees or unearth from the soil. The beak is rather long and slender, except perhaps in the nuthatch, which, although comparatively long, is possessed of great strength; and there is always a curve more or less marked. The beak is always sharp at its extremity, and the nostrils are placed in a little groove at the base of the bill, and defended by a membranous scale. The feet are, although slender in several species, possessed of remarkable strength, and furnished with sharp round claws, in order to enable the birds to cling to the tree-trunks in which they find their food.

THE OVEN-BIRDS derive their name from the peculiar form of their nests.

The edifice, for it fully deserves that name, is of considerable dimensions when compared with the small size of its architect, and is built in the shape of a dome, the entrance being on one side, so as to present a decided resemblance to an ordinary oven. The walls of the nest are fully an inch in thickness, and the materials of which the structure is composed are clay, grass, and various kinds of vegetable substances, which are woven and plastered together in so workman-like a manner, that the nest is quite hard and firm when the clay has been dried in the sun. The bird seems to be conscious of the security of its nest, for it takes no pains to



OVEN-BIRD.—*Furnarius rufus*.

conceal its habitation, but builds openly upon some exposed spot, such as the large, leafless branch of a tree, the top of palings, or even the interior of houses or barns.

The Oven-bird is not content with barely building this curious domed structure, but adds to its security by separating it into two parts, by means of a partition reaching nearly to the roof, the eggs being placed in the inner chamber. The bed on which the eggs are placed consists mostly of feathers and soft grasses. The number of the eggs is generally about four.

The Oven-bird is a bold little creature, caring nothing, as has already been implied, for the close proximity of man, and attacking fiercely any other bird that might happen to approach too closely to its residence, screeching defiantly the while. It is a quick, active bird, tripping over the ground with great rapidity while searching after its prey, and is almost invariably found in company with its mate. The flight of the Oven-bird is not at all strong, and it seldom indulges in any aerial excursions beyond a short flight from one bush to another. Both sexes take part in the construction of the nest, each going alternately for supplies of clay, straw, and

grass-stems, working them well together, and then flying for a fresh load as soon as its mate has arrived. It feeds principally on insects, having a special liking for those of the beetle kind.

THERE is an allied genus of Oven-birds, termed CINCLODES, the members of which are found upon the western coasts of South America, and generally frequent the sea-shore, where they feed upon the smaller crustaceans and mollusks. They are rather daring little birds, and will seek their prey at some distance from the shore, perching upon the fronds of floating seaweed, and pecking out the various marine creatures that are always to be found in such localities. Like the true Oven-birds, they are careless of the presence of man, and are so fearless that they can almost be taken by hand. Indeed, one voyager relates that he killed ten of these little birds with a stick without any difficulty, and hardly having to change his position.

ANOTHER small group of the Certhidæ is known to zoologists by the title of SYNALLAXINE BIRDS, and distinguished by the greater length of the outer toe, and its juncture to the middle toe nearly as far as the first joint. The hinder toe is long and rather powerful, and all the claws are sharply curved, pointed, and strong. The tail is rather long, and is almost always pointed, like that of the common creeper.

The Synallaxine birds are inhabitants of tropical America, and, like the oven-birds, are notable for the very curious nests which they construct. Although these birds are of small dimensions, they all build nests which might easily be attributed to the labors of some hawk or crow. The nest of one species is often from three to four feet in length, and is placed very openly in some low bush, where it escapes notice on account of its resemblance to a bunch of loose sticks thrown carelessly together by the wind. In its interior, however, the edifice is very carefully made, and, like the nest of the oven-birds, is divided into two recesses, the eggs being laid in the inner apartment, upon a bed of soft feathers.

The Synallaxine birds are generally found upon the trees, which they traverse with great rapidity in search of the various insects on which they feed, and may often be seen running about upon the ground, peering anxiously into every little hole and cranny, and dragging slugs, snails, worms, and beetles from the recesses in which they are accustomed to conceal themselves during the hours of daylight.

ANOTHER very small group of the Creepers is represented by the CURVED-BILLED CREEPER, a bird about the size of a blackbird, which is found in the forests of Brazil.

It is chiefly remarkable from the curiously-formed bill, which is very long in proportion to the size of the bird, and is curved in a manner that can best be represented by the form of a sickle. The bill, although so much elongated, is possessed of considerable strength, and is evidently employed for the purpose of drawing the insects on which the creature feeds from the crevices of the bark in which they dwell. As is indicated by the stiff and sharply-pointed feathers of the tail, the Curved-billed Creeper is in the habit of traversing the trunks of trees, and is able to support itself in a perpendicular position by hooking its long curved claws into the inequalities of the bark, and resting the weight of its body upon the stiff tail-feathers. The general color of this bird is brown, with a wash of cinnamon upon the greater part of the surface. The head and neck are of a grayer brown, and spotted with white.

WE now arrive at the true Creepers, of which birds the COMMON TREE-CREEPER is an excellent example.

This little bird is one of the prettiest and most interesting of the feathered tribes that are found in Europe. It is a very small bird, hardly so large as a sparrow, and beautifully slender in shape. The bill is rather long, pointed, and curved, and the tail-feathers are stiff and pointed at their extremities. The food of the Creeper consists chiefly of insects, although the bird will sometimes vary its diet by seeds and other vegetable substances. The insects on which it feeds live principally under the bark of various rough-skinned trees, and when it is engaged in running after its food, it runs spirally up the trunk with wonderful ease and celerity, probing every crevice with ready adroitness, its whole frame instinct with sparkling

eagerness, and its little black eyes glancing with the exuberance of its delight. While running on the side of the tree which is nearest to the spectator, it presents a very curious appearance, as its dark-brown back and quick tripping movements give it a great resemblance to a mouse, and ever and anon, as it comes again into sight from the opposite side of the trunk, its beautifully white breast gleams suddenly in contrast with the sombre-colored bark. Its eyes are wonderfully keen, as it will discern insects of so minute a form that the human eye can hardly perceive them, and it seems to possess some instinctive mode of detecting the presence of its insect prey beneath moss or lichens, and will perseveringly bore through the substance in which they are hidden, never failing to secure them at last.

The Creeper is a very timid bird, and if it is alarmed at the sight of a human being, it will



COMMON TREE-CREEPER.—*Certhia familiaris*.

either fly off to a distant tree, or will quietly slip round the trunk of the tree on which it is running, and keep itself carefully out of sight. It soon, however, gains confidence, and, provided that the spectator remains perfectly quiet, the little head and white breast may soon be seen peering anxiously round the trunk, and in a few minutes the bird will resume its progress upon the tree, and run cheerily up the bark, accompanying itself with its faint trilling song. It seldom attempts a long flight, seeming to content itself with flitting from tree to tree.

Although so timid a bird, the Creeper soon becomes familiarized with those whom it is accustomed to see, provided that they treat it kindly, and will even come to receive food from their hands. In one instance that has come to my knowledge, the little birds were seen to frequent the patches of gum that exude from the bark of several trees, and in one spot where a number of small branches united, so as to form a kind of cup or hollow, a little heap of gum was found, which seemed to have been placed there by the Creepers, as they were constantly seen haunting the spot. Feeling sure that the birds fed upon the gum, the spectators used to supply their larder not only with gum, but with crumbs of bread, different seeds, and little morsels of raw meat, which disappeared as regularly as they were provided.

Some persons have supposed that in climbing the trees it uses its beak, after the manner of the parrots and other climbing birds. This, however, is not the case, as the beak is only employed for the purpose of probing the bark, and the whole progression is achieved by means of the long, curved, and sharply-pointed claws, which retain their hold so firmly, that I have seen a Creeper hang by its claws after it had been shot, and remain firmly fixed to the bark long after life had fled.

The Creeper is a very nervous bird, and may be temporarily paralyzed by a smart blow given to the tree or branch on which it is running. Expert bird-catching boys will often secure this bird by flinging a stone or heavy stick at the tree, and then pouncing on the bird before it has recovered from its alarm. It can even be struck from its hold by suddenly running round the tree, and delivering a sharp blow upon the part of the trunk on which it is

clinging. It also takes advantage of the uniform brown tint of its back to conceal itself from a real or fancied foe, by clinging closely to the tree and pressing itself so flatly into some crevice, that a human eye can scarcely distinguish it from the bark. The Creeper does not confine itself exclusively to trees, but has often been seen running up old walls, and seeking for the insects that are always to be found in such localities.

The nest of the Creeper is usually made in the hollow of some decaying tree, and is made of grasses, leaves, and vegetable fibres, and lined with feathers. The eggs are very small, about seven or eight in number, and of an ashen-gray color, sprinkled with little gray-brown spots. Sometimes it builds in the hole of an old wall, and has been known to make its nest in a disused spout.

THE BROWN CREEPER (*Certhia familiaris*) is identical with the English bird above described. Two quite distinct varieties are recognized, one inhabiting Mexico.

The Brown Creeper is common throughout the year in New England. It is found in very high latitudes. During the winter months it approaches human habitations, delighting in orchards, where the trees afford more or less sustenance in the worms and larvæ that infest them.

THE WALL-CREEPER is a native of central and southern Europe, and is found plentifully in all suitable localities. It is called the Wall-Creeper because it frequents walls and perpendicular rocks in preference to tree-trunks.

In its movements it does not resemble the common Creeper; for, instead of running over the walls with a quick and even step, it flies from point to point with little jerking movements of the wing, and when it has explored the spot on which it has alighted, takes flight for another. The food of this bird is similar to that of the common Creeper, but it is especially fond of spiders and their eggs; finding them plentifully in the localities which it frequents. Old ruined castles are favorite places of resort for this bird, as are also the precipitous faces of rugged rocks.

The nest of the Wall-Creeper is made in the cleft of some lofty rock, or in one of the many holes which are so plentifully found in the old ruined edifices which it so loves.

In color the Wall-Creeper is a very pretty bird, the general color of the plumage being light gray, relieved by a patch of bright crimson upon the shoulders, the larger wing-coverts, and the inner webs of the secondaries. The remainder of the quill-feathers of the wing are black, and the tail is black tipped with white. It is a much larger bird than the Common Tree-Creeper, measuring about six inches in total length.

THERE is a curious genus of the Creeping-bird, known by the name of CLIMACTERIS. All the members of this genus are inhabitants of Australia, and notices of the individual species may be seen in Mr. Gould's well-known work on the birds of that country. They are generally found upon the tall gum-trees, traversing their rugged bark with great rapidity, and probing the crevices in search of insects, after the manner of the Common Creeper. They do not confine themselves to the bark, but may often be seen running into the "spouts," or hollow branches, which are so often found in the gum-trees, and hunting out the various nocturnal insects which take refuge in these dark recesses during the hours of daylight.

THE Nuthatches form another group of the Certhidæ, and are represented in Europe by the common NUTHATCH of our woods. They are all remarkable for their peculiarly stout and sturdy build, their strong, pointed, cylindrical beaks, and their very short tails.

The Nuthatch, although by no means a rare bird, is seldom seen except by those who are acquainted with its haunts, on account of its shy and retiring habits. As it feeds mostly on nuts, it is seldom seen except in woods or their immediate vicinity, although it will sometimes become rather bold, and frequent gardens and orchards where nuts are grown. The bird also feeds upon insects, which it procures from under the bark after the manner of the creepers, and it is not unlikely that many of the nuts which are eaten by the Nuthatch have been

inhabited by the grub of the nut weevil. It will also feed upon the seeds of different plants, especially preferring those which it pecks out of the fir-cones. Beech mast also seems grateful to its palate, and it will occasionally take to eating fruit.

In order to extract the kernel of the nut, the bird fixes the fruit securely in some convenient crevice, and, by dint of repeated hammerings with its beak, breaks a large ragged hole in the shell, through which the kernel is readily extracted. The blows are not merely given by the stroke of the beak, but the bird grasps firmly with its strong claws, and swinging its whole body upon its feet, delivers its stroke with the full weight and sway of the body.

The beak, by means of which this feat is accomplished, is remarkably strong and powerful, and can be used with a vigor and endurance that is quite astonishing. Many instances of



NUTHATCH.—*Sitta carolinensis*.

its powers have been narrated, among which we may mention that one of these birds which had been captured in a common brick trap, and had remained in its dark cell for some hours, was found when released to have been deprived of one-third of its beak, which had evidently been ground away by the continual pecking which had been kept up at the bricks. The person who caught the bird and who narrated the tale is the Reverend Mr. Bree. Another of these birds that had been put into a cage, immediately began to

hammer at the wooden supports of its prison, and although severely wounded in the wing, refused to cease from its exertions except to eat and drink, both of which operations it performed with the greatest coolness. For two days the poor bird continued to peck unceasingly at his cage, and at the close of the second day, sank under its extraordinary exertions.

The Nuthatch is a capital climber of tree-trunks, even surpassing the creeper in the agility with which it ascends and descends the perpendicular surface, clinging firmly with its strong claws, and running equally well whether its head be upwards or downwards. Even the creeper does not attempt to run down a tree with its head towards the ground. It is a very hardy bird, continuing to pick up an abundant supply of food even in the depths of winter, always appearing plump and lively.

The nest of the Nuthatch is placed in the hollow of a decaying tree, and the bird always chooses some hole to which there is but a small entrance. Should the orifice be too large to please its taste, it ingeniously builds up the orifice with clay and mud, probably to prevent the intrusion of any other bird. If any foe should venture too near the nest, the mother bird becomes exceedingly valiant, and dashing boldly at her enemy, bites and pecks so vigorously with her powerful beak, hissing and scolding the while, that she mostly succeeds in driving away the assailant. The nest is a very inartificial structure, made chiefly of dried leaves laid loosely upon the decaying wood, and rudely scraped into the form of a nest.

In its color the Nuthatch is rather a pretty bird, of pleasing though not of brilliantly

tinted plumage. The general color of the upper parts is a delicate bluish-gray, the throat is white, and the abdomen and under parts are reddish-brown, warming into rich chestnut on the flanks. From the angle of the mouth a narrow black band passes towards the back of the neck, enveloping the eye in its course and terminating suddenly before it reaches the shoulders. The tail is black on the base and gray towards the tip, except the two outer tail-feathers, which have each a black spot near the extremity. The shafts are also black.

The Nuthatches are represented in America by five species, very much resembling those of Europe. The White-bellied and the Red-bellied are the most common.

The Wrens are represented by nine species, in as many genera. Some of them have numerous varieties; twenty-three are recognized.

A large species called the CACTUS WREN is found in Mexico and California. Its systematic name is overpoweringly long for such a bird.

The HOUSE WREN (*Troglodytes ædon*) is the most familiar species. This cheery little bird is a welcome accompaniment to the country-house. Its remarkable cheerfulness and industry, and its pleasant song, claim for it a hearty welcome in the orchard or garden. It inhabits all the States, and is migratory.

Belonging to another group are several very small American birds, called, respectively, RUBY-CROWNED, GOLDEN-CRESTED, and CUVIER'S GOLDEN-CRESTED WREN. These birds are not true Wrens. Though so very small, their golden and ruby crests render them very attractive. The species differ from those of Europe.

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## WRENS AND WARBLERS.

WE now arrive at the family of the Wrens, in which group we find two birds so dissimilar in outward appearance as apparently to belong to different orders, the one being the common Wren of Europe, and the other the celebrated LYRE-BIRD of Australia.

This bird, which also goes under the name of NATIVE PHEASANT among the colonists, and is generally called BULLEN-BULLEN by the natives, on account of its peculiar cry, would, if it had been known to the ancients, have been consecrated to Apollo, its lyre-shaped tail and flexible voice giving it a double claim to such honors. The extraordinary tail of this bird is often upwards of two feet in length, and consists of sixteen feathers, formed and arranged in a very curious and graceful manner. The two outer feathers are broadly webbed, and, as may be seen in the illustration, are curved in a manner that gives to the widely-spread tail the appearance of an ancient lyre. When the tail is merely held erect and not spread, the two lyre-shaped feathers cross each other, and produce an entirely different outline. The two central tail-feathers are narrowly webbed, and all the others are modified, with long slender shafts, bearded by alternate feathery filaments, and well representing the strings of the lyre.

The tail is seen in its greatest beauty between the months of June and September, after which time it is shed, to make its first reappearance in the ensuing February or March. The habits of this bird are very curious, and are so well and graphically related by Mr. Gould, that they must be given in his own words:—

“The great stronghold of the Lyre-bird is the colony of New South Wales, and from what I could learn, its range does not extend so far to the eastward as Moreton Bay, neither have I been able to trace it to the westward of Port Phillip on the southern coast; but further research can only determine these points. It inhabits equally the bushes on the coast and those that clothe the sides of the mountains in the interior. On the coast it is especially abundant at the Western Port and Illawarra; in the interior, the cedar brushes of the Liverpool range, and, according to Mr. G. Bennett, the mountains of the Tumat country, are among the places of which it is the denizen.

“Of all the birds I have ever met with, the *Menura* is far the most shy and difficult to procure. While among the mountains I have been surrounded by these birds, pouring forth the loud and liquid calls for days together, without being able to get a sight of them, and



LYRE-BIRD.—*Menura superba*.

it was only by the most determined perseverance and extreme caution that I was enabled to effect this desirable object, which was rendered more difficult by their often frequenting the almost inaccessible and precipitous sides of gullies and ravines, covered with tangled masses of creepers and umbrageous trees; the cracking of a stick, the rolling down of a small stone,



or any other noise, however slight, is sufficient to alarm it; and none but those who have traversed these rugged, hot, and suffocating bushes, can fully understand the anxious labor attendant on the pursuit of the Menura.

“Independently of climbing over rocks and fallen trunks of trees, the sportsman has to creep and crawl beneath and among the branches with the utmost caution, taking care only to advance while the bird’s attention is occupied in singing, or in scratching up the leaves in search of food; to watch its action it is necessary to remain perfectly motionless, not venturing to move even in the slightest degree, or it vanishes from sight as if by magic. Although I have said so much on the cautiousness of the Menura, it is not always so alert; in some of the more accessible bushes through which roads have been cut, it may frequently be seen, and on horseback even closely approached, the bird evincing less fear of those animals than of man.

“At Illawarra it is sometimes successfully pursued by dogs trained to rush suddenly upon it, when it immediately leaps upon the branch of a tree, and its attention being attracted by the dog below barking, it is easily approached and shot. Another successful mode of procuring specimens is by wearing the tail of a full-plumaged male in the hat, keeping it constantly in motion, and concealing the person among the bushes, when, the attention of the bird being arrested by the apparent intrusion of another of its own sex, it will be attracted within the range of the gun. If the bird be hidden from view by surrounding objects, any unusual sound, such as a shrill whistle, will generally induce him to show himself for an instant, by causing him to leap with a gay and sprightly air upon some neighboring branch to ascertain the cause of the disturbance; advantage must be taken of this circumstance immediately, or the next moment it may be half-way down the gully.

“The Menura seldom, if ever, attempts to escape by flight, but easily eludes pursuit by its extraordinary powers of running. None are so efficient in obtaining specimens as the naked black, whose noiseless and gliding steps enable him to steal upon it unheard or unperceived, and with a gun in his hand he rarely allows it to escape, and in many instances he will even kill it with his own weapons.

“The Lyre-bird is of a wandering disposition, and although it probably keeps to the same bush, it is constantly engaged in traversing it from one end to the other, from the mountain base to the top of the gullies, whose steep and rugged sides present no obstacle to its long legs and powerful, muscular thighs. It is also capable of performing extraordinary leaps, and I have heard it stated that it will spring ten feet perpendicularly from the ground. Among its many curious habits, the only one at all approaching to those of the Gallinacæ is that of forming small round hillocks, which are constantly visited during the day, and upon which the male is continually tramping, at the same time erecting and spreading out its tail in the most graceful manner, and uttering its various cries, sometimes pouring forth its natural notes, at others imitating those of other birds, and even the howling of the native dog (Dingo). The early morning and the evening are the periods when it is most animated and active.

“Although upon one occasion I forced this bird to take wing, it was merely for the purpose of descending a gulf, and I am led to believe that it seldom exerts this power unless under similar circumstances. It is peculiarly partial to traversing the trunks of fallen trees, and frequently attains a considerable altitude by leaping from branch to branch. Independently of a loud full note, which may be heard reverberating over the gullies for at least a quarter of a mile, it has also an inward warbling song, the lower notes of which can only be heard within about fifteen yards. It remains stationary while singing, fully occupied in pouring forth its animated strain. This it frequently discontinues abruptly, and again commences with a low, inward, snapping noise, ending with an imitation of the loud and full note of the satin-bird, and always accompanied by a tremulous motion of the tail.

“The food of the Menura appears to consist principally of insects, particularly of centipedes and coleoptera. I also found the remains of shelled snails in the gizzard, which is very strong and muscular.”

The same writer, in a recent communication to the Zoological Society, mentions the discovery of a nest of the Lyre-bird, containing a nearly adult young bird of sixteen inches in height. In spite of its large size, it was a most helpless creature, and seemed to be quite incapable of escape, even with the assistance of its mother, who with devoted courage tried to withdraw it from its enemies, and laid down her life in the attempt.

The young Lyre-bird displayed no fear of its captors, but was easily induced to follow any one when allured by the imitation of the mother's cry. It fed well, its chief articles of diet being worms, ants, and their larvæ. For water it seemed to care but little, and seldom, if ever, was seen engaged in drinking. Although tended with great care, and its wants well supplied, this interesting captive died within eight days after it was taken. Dr. Bennett remarks of the young Lyre-bird, that when it is able to leave the nest it is very swift of foot, and as it instinctively conceals itself under rocks and among the densest thickets, its capture is a difficult task even for a native.

Of the adult bird, the same writer speaks as follows:—

“I first saw these birds in the mountain range of the Tumat country; lately they have been very abundant among the Blue Mountain ranges bordering on the Nepean river, above Emeu Plains (about thirty-five miles from Sydney). They are remarkably shy, very difficult of approach, frequenting the most inaccessible rocks and gullies, and on the slightest disturbance they dart off with surprising swiftness through the brakes, carrying their tail horizontally; but this appears to be for facilitating their passage through the bushes, for when they leap or spring from branch to branch as they ascend or descend a tree, the tail approaches to the perpendicular. On watching them from an elevated position, playing in a gully below, they are seen to form little hillocks or mounds, by scratching up the ground around them, trampling and running flightily about, uttering their loud shrill calls, and imitating the notes of various birds.”

The nest of the Lyre-bird is a large, loosely-built, domed structure, composed of small sticks, roots, and leaves, and of an oven-like shape, the entrance being in front. The lining is warm and soft, being composed of downy feathers.

The egg of this singular bird is quite as curious as its general form, and presents the curious anomaly of an egg as large as that of a common fowl, possessing all the characteristics of the insessorial egg. The general color of the egg is a deep chocolate tint, marked with purple more or less deep in different specimens, and its surface is covered with a number of stains and blotches of a darker hue, which are gathered towards the larger end, as is usual in spotted eggs.

ANOTHER species of Lyre-bird has been discovered, which is called ALBERT'S LYRE-BIRD (*Menura alberti*), in compliment to the Prince Consort. This species may be known by the comparative shortness of the lyre-shaped tail-feathers, and the absence of dark bars upon the web.

Dr. Stephenson, in speaking of this bird, says:—

“The locality it frequents consists of mountain ridges, not very densely covered with brush; it passes most of its time on the ground, feeding and strutting about with the tail reflected over the back to within an inch or two of the head, and with the wings drooping on the ground. Each bird forms for itself three or four ‘corroborating places,’ as the sawyers call them; they consist of holes scratched in the sandy ground, about two and a half feet in diameter, by sixteen, eighteen, or twenty inches in depth, and about three or four hundred yards apart, or even more.

“Whenever you get sight of the bird, which can only be done with the greatest caution and by taking advantage of intervening objects to shelter yourself from its observation, you will find it in one or other of these holes, into which it frequently jumps and seems to be feeding; then ascends again and struts round and round the place, imitating with its powerful musical voice any bird that it may chance to hear around it. The notes of the *Dacelo gigantea*, or laughing jackass, it imitates to perfection; its own whistle is exceedingly beautiful and varied. No sooner does it perceive an intruder, than it flies up into the nearest tree, first



## Animate Creation.

WE have concluded to submit for public patronage a work with the above title, being a series of exquisite Engravings representing the ANIMAL WORLD, executed with great scientific accuracy, and accompanied by full Descriptive Text, written in popular terms, so as to delight and instruct the people. Anyone who has considered the subject must be at a loss to understand why an ILLUSTRATED NATURAL HISTORY, comprehensive and at the same time popular, has not before this been published in this country. Indeed any lover of animals who has visited the great museums and zoological gardens and has had access to books of engravings in the public libraries, could not fail to remark the wealth of material in existence devoted to this subject. Being confirmed in our conviction of the desirability of such a work, we laid under contribution the best existing authorities for the production of most perfect representations of all the more important living creatures, and among the artists whose delineations will delight the reader, we may mention Harrison Weir, Wolf, Coleman, Fr. Specht, and Mutzel. By far the majority of the engravings in these volumes are from drawings made from the *living* animals, many at the Zoological Society's Gardens in London, England.

We purpose that our patrons shall be aided and interested in their study by such an array of pictures as has never before embellished any Natural History. In numerous instances the engraving is printed in oil-colors, and this portion of the illustrations has been taken charge of by Messrs. L. Prang & Co., of Boston, who we believe rank foremost for high artistic results in this department of printing. These Oleographs were copied under the superintendence of Mr. Prang from the renowned "Tafeln" of "Brehm's Thierleben," so that they may be declared perfectly reliable.

We sought competent advice from various sources as to the most suitable text that should accompany this panorama of handsome Engravings. It was found impossible to embody all the present ideas of naturalists in a single work like this on account of the rapid advances and constant changes in their knowledge of, and habits of thought respecting, the Animal World. And it seemed to us correct that the true object of Zoology is not to arrange, to number, and to ticket animals in a formal inventory, but to inquire into their life-nature, and not simply to investigate the lifeless organism.

What do we know of "Man" from the dissecting-room? Is it not Man, the warrior, the statesman, the poet, etc., that we are interested in? With all veneration which attaches itself to those who are the accredited possessors of abstruse learning, their inordinate use of phraseology detracts too much, we fear, from the fascination that the study of the Animal World would otherwise yield, and as we are not content to have our work restricted to a favored few, we thought the task placed in our hands to be to keep the work free from a repellant vocabulary of conventional technicalities. Our endeavor has been to find an author whose work would be noted for its fund of anecdote and vitality rather than for merely anatomical and scientific presentation, and we arrived at the conclusion that we could not do better than avail ourselves of the Rev. J. G. Wood's comprehensive work—a work most popularly approved by speakers of the English language. It would be superfluous to say one word concerning the standard character of his book, from the pages of which old and young at the other side of the Atlantic have obtained so much instruction and rational amusement. Avoiding the lengthened dissertations and minute classifications of specialists, he presents to his readers in popular terms a complete treatise on the Animal Kingdom of all climes and countries. The one objection that could be urged against it was, that animal life in America might be treated more fully and American forms given more consideration. In order to obviate this drawback and to do full justice to the creatures of our own country, we secured the aid of Dr. J. B. HOLDER, of the American Museum of Natural History in New York, an undoubted American authority, who has adapted Wood's work to American wants and given prominence to American forms of Animal life.

The splendid work on Rodentia, by Allen, Coues, and others, will be fully consulted. The valuable work on North American Birds, by Baird, Brewer, and Ridgway, will be the guide in the treatment of birds. The late arrangement of the classification and nomenclature of North American Birds, by Mr. Ridgway, and the Committee on that subject of the Ornithologists' Union, will be utilized in full. The arrangement of Mammals will be after the latest classification by Professor Flower, of the Zoological Society of London. So that this will be the first popular Natural History worthy of the name that has made its appearance here, which gives due and full recognition to the animate world surrounding us.

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N. E.

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The late CHARLES DARWIN writes:—"The illustrations are the best I ever saw in any work. I find it superfluous to enter here into particulars, as I already, in the 'Descent of Man,' have willingly and openly confessed how much I have profited by Mr. Brehm's book, and how highly I esteem it."  
Sir JOHN LUBBOCK, Bart., D.C.L.:—"You have, I think, done good service in publishing them. They are certainly very admirable."  
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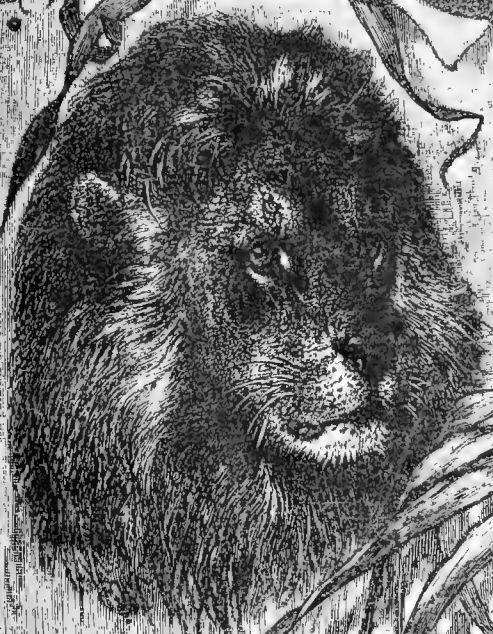
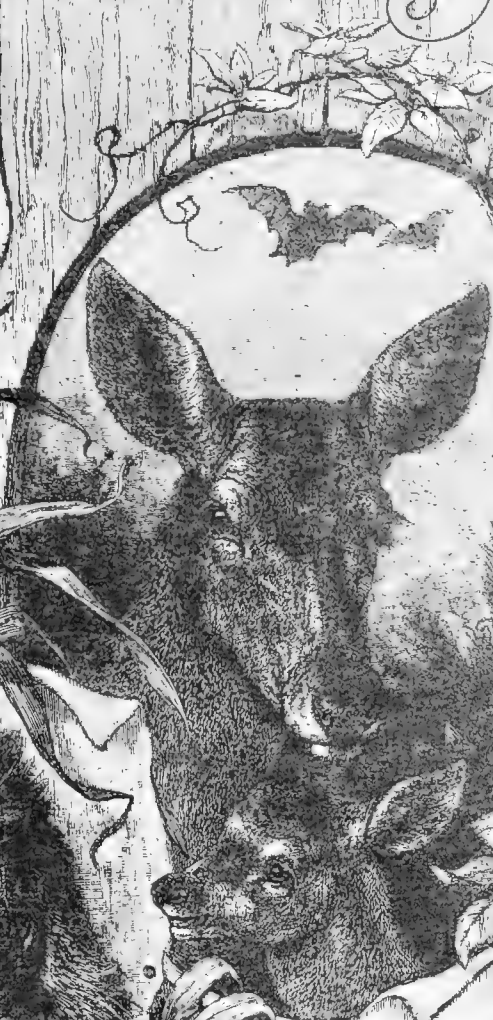
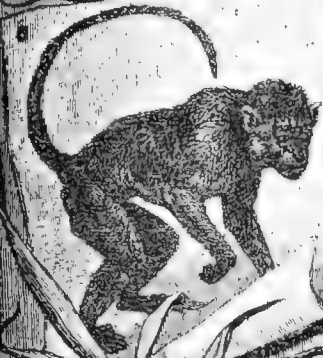
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alighting on the basement branches, and then ascending by a succession of jumps until it reaches the top, when it instantly darts off to another of its play-grounds.

“The stomachs of those I dissected invariably contained insects, with scarcely a trace of any other material. Now, collectors of insects know that gravel-pits and sandy holes afford them great treats, and it appears to me that one, if not the principal use of the excavations made by this bird, is to act as a trap for unwary coleopteras and other insects, which, falling in, cannot be again rescued, and are therefore easily secured.”

The nest of Albert's Lyre-bird is like that of the preceding species in general shape, but is almost wholly composed of long and slender twigs, and presents a most curious appearance. Specimens of this structure may be seen in the British Museum. The nest resembles nothing so much as a large round mass of loose sticks, into which some giant had thrust his foot and left the impression of his shoe. The hollow of the nest is, in fact, a kind of cave on a small scale, domed over by the sticks as they lie crossing each other in all directions.

WE are all familiar with the WREN, “the king of all birds,” as he is termed in ancient rhyme, his title to royalty resting on his defeat of the eagle in upward flight. The story runs that the birds assembled to choose a king, and that the election should fall on the bird who soared the highest. Up sprang all the birds into the sky, but highest of all towered the eagle, who, after mounting till his wearied wings could beat no more, proclaimed himself the sovereign of the birds. But all unperceived, the little Wren had been quietly perching between his shoulders, and as soon as the eagle ceased to mount, the Wren sprang into the air, and, rising on tiny pinion far above the wearied eagle, twittered forth the victory of wit and intellect over bulk and physical strength.

The long and harsh name of Troglodytes, which has been given to this bird, signifies a diver into caves, and has been attributed to the Wren on account of its shy and retiring habits, and its custom of hiding its nest in some hollow or crevice where it may escape observation. The Wren is seldom to be seen in the open country, and does not venture upon any lengthened flight, but confines itself to the hedge-rows and brushwood, where it may often be observed hopping and skipping like a tiny feathered mouse among the branches. It especially haunts the hedges which are flanked by ditches, as it can easily hide itself in such localities, and can also obtain a plentiful supply of food. By remaining perfectly quiet, the observer can readily watch its movements, and it is really an interesting sight to see the little creature flitting about the brushwood, fanning its saucily expressive tail, and uttering its quick and cheering note.

The voice of the Wren is very sweet and melodious, and of a more powerful character than would be imagined from the dimensions of the bird. The Wren is a merry little creature, and chants its gay song on the slightest encouragement of weather. Even in winter there needs but the gleam of a few stray sunbeams to set the Wren a-singing, and the cold Christmas season is often cheered with its happy notes. While skipping among the branches, the Wren utters a continuous little twitter, which, although not worthy of being reckoned as a song, is yet very soft and pleasing.

The nest of the Wren is rather an ambitious structure, being a completely domed edifice, and built in a singularly ingenious manner. If, however, the bird can find a suitable spot, such as the hole of a decaying tree, the gnarled and knotted branches of old ivy, or the overhanging eaves of a deserted building, where a natural dome is formed, it is sure to seize upon the opportunity and to make a dome of very slight workmanship. The dome, however, always exists, and is composed of non-conducting materials, so that the bird always contrives to insulate itself and its young from electrical influences. It is a very singular fact, that a Wren will often commence and partly build three or four nests in different localities before it settles finally upon one spot. Some persons have supposed that these supplementary nests are built by the parent bird as houses for its young after they have grown too large to be contained within the house where they were born, while others have suggested that they are experimental nests made by the inexperienced young while trying their 'prentice beak in the art of bird architecture.

For my own part, I believe that these partial nests have been made by Wrens when building for the first time, and consequently inexperienced in the world and its difficulties. They seem to fix too hastily upon a locality, and then to find, after they have made some progress with their house, that danger lurks near, perhaps in the form of a weasel, a shrike, or a snake. In one such instance of desertion the cause was sufficiently evident, for the head of a snake was seen protruding from the opening of the nest.

The materials of which the nest is composed are always leaves, moss, grass and lichens, and it is almost always so neatly built that it can hardly be seen by one who was not previously aware of its position. The opening of the nest is always at the side, so that the eggs are securely shielded from the effects of weather.

As to the locality and position in which the nest is placed, no definite rule is observed, for the Wren is more capricious than the generality of birds in fixing upon a house for her young. Wrens' nests have been found in branches, hedges, hay-ricks, water-spouts, hollow trees, barns and outhouses. Sometimes the Wren becomes absolutely eccentric in its choice, and builds its nest in spots which no one would conjecture that a bird would select. A Wren has been known to make its nest in the body of a dead hawk, which had been killed and nailed to the side of a barn. Another Wren chose to make her house in the throat of a dead calf, which had been hung upon a tree, and another of these curious little birds was seen to build in the interior of a pump, gaining access to her eggs and young through the spout.

The eggs of the Wren are very small, and are generally from six to eight in number.

During the winter, the Wren generally shelters itself from the weather in the same nest which it had inhabited during the breeding season, and in very cold seasons it is not an uncommon event to find six or seven Wrens all huddled into a heap for the sake of warmth, and presenting to the eye or hand of the spectator nothing but a shapeless mass of soft brown feathers.

In Mr. Thompson's natural history a curious anecdote is related, where a pair of fly-catchers who had made a nest and laid three eggs were ousted by a party of young Wrens just able to fly. The little birds had probably been ejected from home for the first time, and seeing so comfortable a nest, had taken possession of it. I have often observed the same conduct in many young canaries, for whenever a family of the newly-fledged birds is turned out of the nest, they generally wend their way to the home of some other female, and install themselves in possession of her nest and eggs before she is aware of their intentions.

The title of "Kitty Wren," which is often given to this bird, is owing to the peculiar little twittering sound of *Chit! chit!* which it utters while engaged in the pursuit of food.

The color of the Wren is a rich reddish-brown, paling considerably on the under surface of the body, and darkening into dusky brown upon the quill-feathers of the wings and tail. The outer webs of the former are sprinkled with reddish-brown spots, and the short tail-feathers are barred with the same hue. The bill is slender, and rather long in proportion to the general dimensions of the bird. The total length of the Wren is rather more than four inches. White and pied varieties are not uncommon.

WE now arrive at the very large family of the WARBLERS, a group in which the genera, when taken together, number more members than those of any other family. The first sub-family is that which is known by the name of the *Malurinae*, or soft-tailed Warblers.

THE first example of the soft-tailed Warblers is the celebrated TAILOR-BIRD of India and the Indian Archipelago. There are many species belonging to the genus *Orthotomus*, and as they all possess similar habits, there is no need of describing more than the example which has been shown. They are peculiar birds, haunting cultivated grounds, and being generally seen in pairs on fields and in gardens. They dislike lofty elevations, and may generally be seen near the ground, hopping about the lower branches of trees and shrubs in their search after insects, and occasionally seeking their prey on the ground. Their flight is rapid but undulating, after the manner of many short-winged and long-tailed birds.

The Tailor-bird is a sober little creature, not more conspicuous than a common sparrow,



and is chiefly remarkable for its curious nest, which is made in a singular and most ingenious manner. Taking two leaves at the extremity of a slender twig, the bird literally sews them together at their edges, its bill taking the place of the needle and vegetable fibres constituting the thread. A quantity of soft cottony down is then pushed between the leaves, and a convenient hollow scraped out in which the eggs may lie and the young birds may rest at their ease. Sometimes, if the leaf be large enough, its two edges are drawn together, but in general a pair of leaves are needed. A few feathers are sometimes mixed with the down.

This curious nest is evidently hung at the very extremity of the twigs, in order to keep it out of the way of the monkeys, snakes, and other enemies which might otherwise attack and devour mother and young together.

THE large genus *Drymoica*, which numbers nearly seventy species, is quite as remarkable as the preceding genus. Some species inhabit Africa, others Southern Europe, some are found in India, and

many in Australia. They are always found in open plains where the grass is long and thick, or among the rich rank herbage that grows in marshy localities. They mostly feed on the ground insects, and are well fitted by their very great speed of foot for the chase and capture of their swift insect prey. Being but indifferent in flight, they seldom take to wing, and always try to escape from their foes by means of running among the thick herbage in which they live. While running, they generally lift their tails and hold them over the back. Their song is loud, but by no means agreeable.

The nest of the PINC-PINC is of considerable dimensions, being often more than a foot in circumference and of a most singular shape and structure. The materials of which it is composed are vegetable fibres, beaten, twisted, and woven into a fine felt-like substance, and strongly fastened to the branches among which it is situated. It is of a rough, gourd-like shape, and is always entered by means of a neck, or spout, so that the bird is able from the interior to present its sharply-pointed bill to any assailant, and to prevent its entrance. Near the mouth of the nest there are generally one or two projections, which serve as perches for the bird to rest upon before it enters the nest, and may probably be used by the male as a seat whereon to recline while his mate is sitting upon the eggs within. The color of the nest varies according to the substance of which it is composed, sometimes being of a snowy whiteness, and at other times of a dingy brown.



TAILOR-BIRD.—*Orthotomus bennetti*.

The peculiar form of this and other similar nests is evidently for the purpose of enabling the parent bird to defend its home against the intrusions of the many foes to bird life with which these regions swarm. The eggs are generally from six to eight in number.

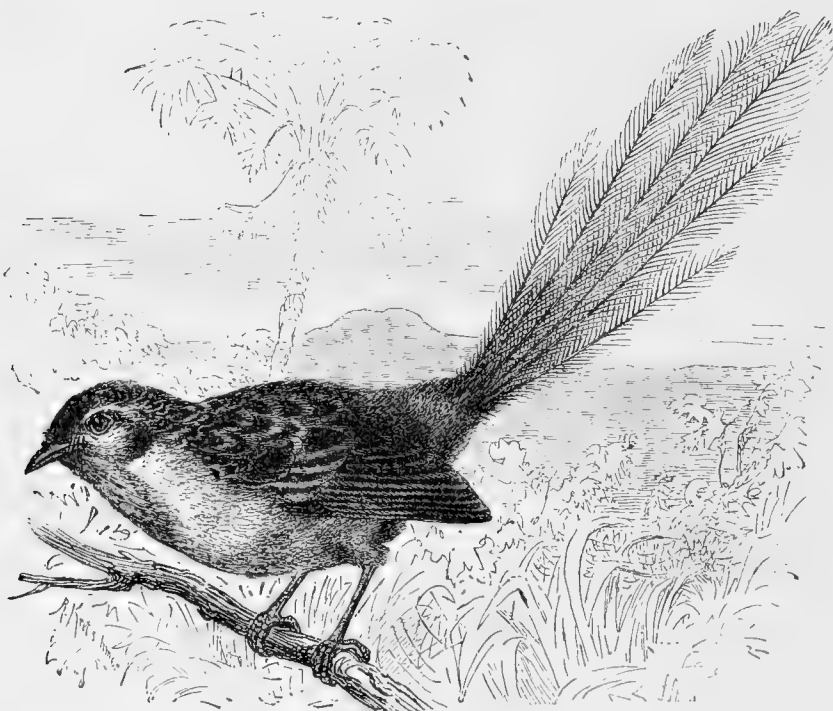
ANOTHER species of the same genus, the CAPOCIER, builds a nest which, although of coarser texture, is quite as beautiful as that of the pinc-pinc.

The materials are much the same as those employed by the pinc-pinc, but they are only closely felted together in the interior of the nest, and are left to flow loosely on its exterior. It is a very large edifice in proportion to the dimensions of the architect, and the cottony down, the flaxen fibres, and fine moss are woven together in so skilful a manner as to excite our highest admiration. Le Vaillant, who watched a pair of Capociers hard at work upon their nest, says that they were occupied for a whole week in their task. The interior of the nest is of an oval shape, rather roughly corresponding with the external outline, and it is entered through an opening in the side. One of these nests will sometimes reach nine inches in height. The Capocier is a native of Africa.

THE genus which has been chosen as a type of this family is MALURUS, the members of which are only found on the continent of Australia. They possess the habits of Drymoica, and even resemble those birds in the peculiar fashion of tilting up their tails as they run over the ground.

OUR last, and perhaps the most curious example of the Malurine birds, is the beautiful little EMEU WREN of Australia.

This pretty bird is remarkable for the development of the tail-feathers, which are extremely lengthened, and are nothing more than bare shafts slightly fringed on each side.



EMEU WREN.—*Stipturus malachurus*.

The bird never perches on high trees, and very seldom takes to wing, but runs over the grass with very great rapidity, holding its tail erect over its back in a singularly pert manner. It is generally found among long grass, and according to Dr. Bennett it congregated some years since in the Sydney Domain, near the Botanic Gardens, but has not since appeared in that locality. The color of this little bird is mottled brown above, and very light fawn below, deepening into chestnut on the flanks. The throat of the male is tinged with blue, and his tail-feathers are larger than those of his mate.

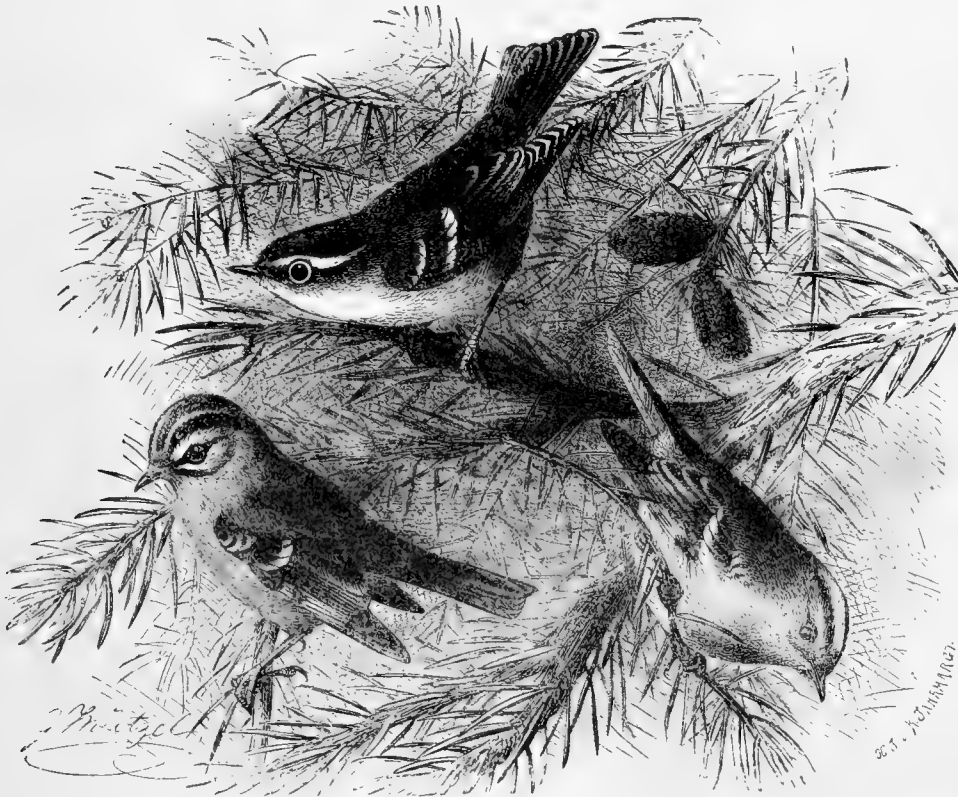
The nest of the Emeu Wren is very large in comparison to the size of its inhabitant, and is placed on the ground, where it looks like a large ball of grass with a hole in the side. The interior is snugly lined with soft feathers, and there are generally three eggs.

THE tiny GOLDEN-CRESTED WREN, as it is popularly called, is very common throughout Europe, and may be seen hopping and flitting merrily among the branches in copses, orchards,

and plantations. Although from its diminutive size it has gained the title of Wren, it has no claim to that designation, and is more rightly termed the Kinglet or *Regulus*.

This "shadow of a bird," as it is happily called by White, in his "Natural History of Selborne," is a remarkably hardy little creature, braving the severest frosts of winter, and mostly disdaining to avail itself of the shelter of human habitations. On account of its minute proportions and its retiring habits, it is a very unobtrusive bird, and is often thought to be extremely rare in localities where it may be found plentifully by those who know where to look for it. Even in places where it was held to be extremely scarce, I could always procure specimens at will by a judicious disposition of a little birdlime, and I have frequently discovered the admirably hidden and beautifully constructed nests of these interesting birds.

The Golden-crested Wren is notable for the crest of golden-colored feathers which is placed upon the crown of its head, which it can raise or depress at pleasure, and which gives so pert



GOLDEN-CRESTED WREN AND FIRE CRESTED WREN.—*Regulus cristatus et ignicapillus*.

and changeful an expression to the little creature. But for this golden crest, which is not at all conspicuous when the feathers are lowered, the bird might easily be mistaken for a tree-creeper as it runs up and down the branches, searching into the crevices of the bark for the little insects on which it feeds. The first specimen that I ever saw was traversing the branches of a fine "Blenheim Orange" apple-tree in an adjoining garden, and by my inexperienced eyes was at first taken for a very young creeper. Like the creeper, it can even run up a perpendicular wall, peering into every little crevice, and stocking up the moss and lichens for the purpose of obtaining the insects and their eggs that are lying concealed. It will also eat the chrysalides that are found so abundantly upon the walls.

All the movements of the Golden-crested Wren are full of spring and fiery activity, and the manner in which it will launch itself from one tree to another, and then, without a pause, commence traversing the branches, is a sight well worth seeing. Perhaps it is seen to best advantage among the fir-trees, where it finds great scope for its active habits. Up one branch it scuds, down another, then whisks itself through the air to a fresh tree, and then flings itself

back again to its former perch. Along the twigs it runs with astonishing rapidity, sometimes clinging with its head downward, sometimes running round and round them spirally, always twisting its pert little head in every direction, and probing each hole and crevice with its sharp slender little bill. The roughest-barked trees are its favorite resort, because in such localities it finds its best supply of insect food.

THE FIRE-CRESTED WREN is very similar to the preceding species, but may be distinguished from it by the ruddy hue of the forehead, the fiery orange of the crest, and the decidedly yellow hue of the sides of the neck. It is an inhabitant of Europe, but is a much rarer bird than the Golden-crest. Owing to the great resemblance between the two species, they have often been mistaken for each other, and it is only within a comparatively recent period that their diversity was established. Another species of the same genus, the DALMATIAN REGULUS (*Regulus modestus*), has, although very rarely indeed, been found in the northern regions of Europe. The general color of the plumage is greenish-yellow, and the crown of the head is marked by a narrow streak of paler yellow.

### SONG-WARBLERS.

THE *Luscinixæ*, or SONG-WARBLERS, are, as their name denotes, remarkable for their sweet song, to which accomplishment may be added the beauties of elegant shape and graceful movement. In their color they are very inconspicuous, brown, gray, and olive-green being the hues with which they are generally tinted, in accordance with the principle which has been lately laid down while treating of the Humming-birds. In all these birds the beak is strong, straight, sharply-pointed, and with a notch upon the upper mandible near its extremity. The feet have three toes in front and one behind, and the claw of the hinder toe is the largest and most sharply curved. The nostrils are placed at the base of the beak, are pierced through a rather large membrane, and are unprotected by feathers.

THE common WHITETHROAT is abundant in various parts of Europe, and is, perhaps, the best known of all its tribe.

It is a lively, brilliant little bird, and is remarkable for the curious movement which it makes when singing, and which seldom fails to attract the attention of the observer. Generally starting from some low bush, the Whitethroat begins its sweet quiet song, and then, springing suddenly into the air, wings its way perpendicularly upwards, as if it were about to rival the lark in its lofty flight. But after attaining a height of four or five feet, it slowly sinks upon the spot from which it had started, and again rises into the air with a fresh burst of music. While singing, it seems full of life and eagerness, and the white feathers of its throat, together with those of the crest, vibrate powerfully as the sweet notes are poured forth. The song is not a lengthened one, but is frequently repeated within a short space of time.

The Whitethroat possesses a strong spirit of rivalry, and will match itself against almost any songster that begins to utter his strain, having even been known to challenge the nightingale to a friendly trial of vocal powers. Sometimes it becomes a mimic, and imitates the songs of the other birds by which it is surrounded. In captivity it sings readily, and has been known to start into song only three days after its capture.

The haunts of this bird are generally among low bushes, brambles, underwood, and copses, among which it flits with restless activity. Owing to its habit of traversing the low and nettle-overgrown underwood, it has received the popular name of Nettle-creeper in many parts of England. The food of the Whitethroat consists chiefly of insects, and it is indefatigable in its attacks upon various caterpillars and flies, thereby doing great service to the gardener, who, however, generally aims at its destruction, because in the autumn it repays itself by a few of the fruits which it has saved from the caterpillar and the grub. The caterpillar of the cabbage butterfly is a favorite article of diet with this bird.

The Whitethroat arrives in the northern regions of Europe towards the end of April, the

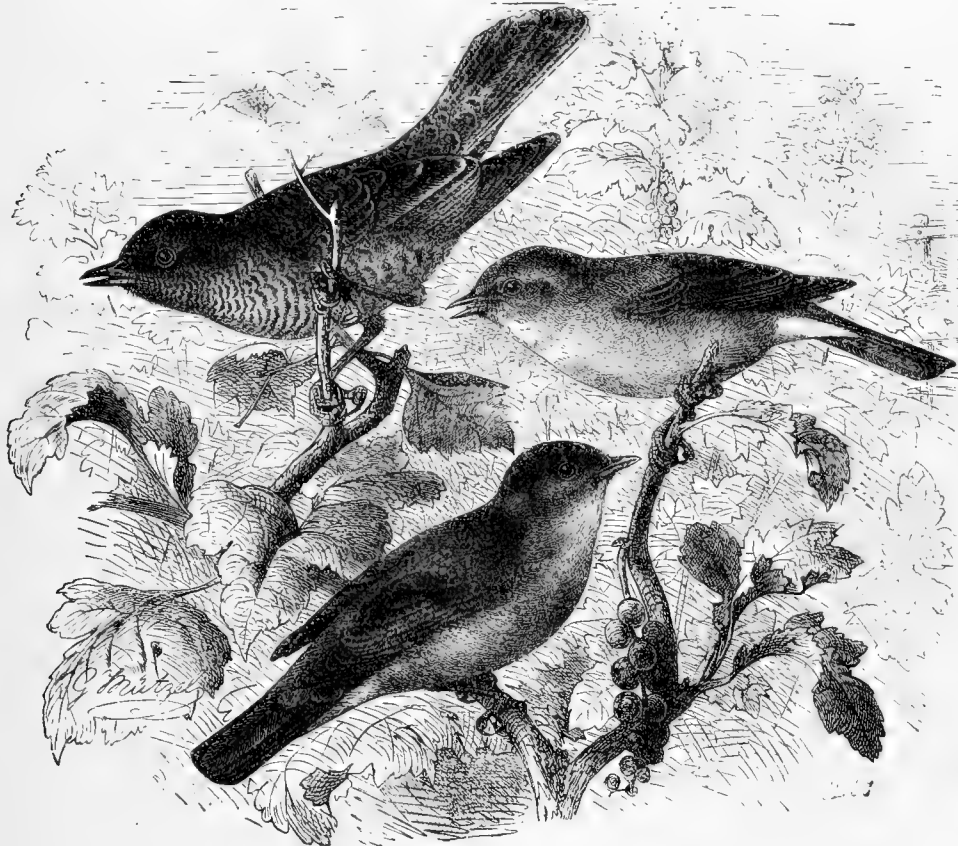


GROUP OF SONG-WARBLEDERS.



male always making his appearance before his mate, and immediately upon their arrival they set to work in searching after a fit spot on which to build their nest. For this purpose they generally choose some thick bush, and are often very indifferent about concealing it, placing it openly on the top of a stunted thorn-bush, within reach of every boy's hand. It is seldom placed at any great height from the ground, and I have generally found them situated at an elevation of two feet. The nest is not very elaborate in its structure, and is chiefly formed of various grasses twisted into shape, and slightly woven into the branches. The entire nest can, however, be easily removed, without the necessity of cutting the twigs to which it is fastened. The complete number of eggs is five, but their number is usually four. Their color is ashen-gray with a green wash, and they are boldly covered with ashen-brown and ashen-green spots and blotches.

The general color of the Whitethroat is reddish-brown on the upper parts of the body and brownish-white below, with the exception of the throat, which is of a beautifully pure white. Its total length is about five inches and a half.



GARDEN WHITETHROAT AND BLACK CAP WARBLER.—*Sylvia hortensis* and *S. atricapilla*.

THERE is another species of Whitethroat which is not so often seen as the last-named species. This is the GARDEN WHITETHROAT, sometimes called by the name of GREATER PETTICHAPS. It is also known by the name of GARDEN WARBLER.

This is an active and lively bird, restless to a degree, and constantly flitting from place to place and from branch to branch on unwearied wing, and seldom coming out into view. The song of this bird is much finer than that of the common Whitethroat, being more lengthened, fuller, and more melodious. Some persons have compared the rich mellow notes which it occasionally utters, to those of the blackbird. Although it chiefly frequents shrubberies, copses and plantations, it will often take a predilection to some garden, and if left undisturbed, soon learns confidence and becomes quite a familiar bird, permitting those with whose persons it is acquainted to approach within very close proximity before it takes alarm. But for its

very retiring habits it would be a well-known bird, and many persons have been charmed by its melody, who have no idea of the bird from whose small throat it proceeds.

The food of the Garden Whitethroat is mostly of an insect nature, but the bird is not averse to various fruits, and in the autumn often becomes rather obnoxious to the gardener.

The nest is not unlike that of the common Whitethroat, and is placed in similar localities; a low thick bush being the favorite spot, although on occasions the bird will build its house among thick herbage, or even among heavy ivy leaves. The nest is made quite as loosely as that of the preceding species, and is composed of grasses, fine fibrous roots, moss, hair, and lichens, and the interior is softly lined with hair and other similar substances. The eggs are greenish-white, covered with many spots and blotches of light brown and ashen-green.

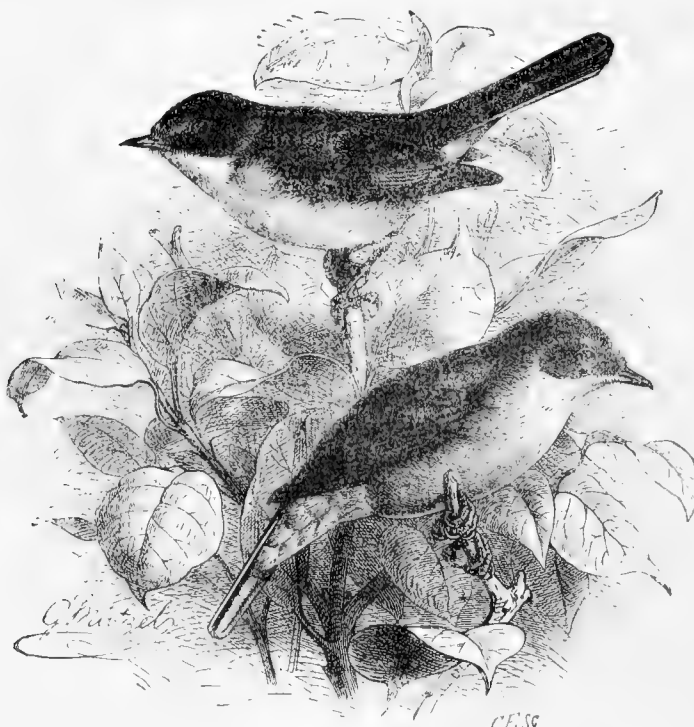
By its color the Garden Whitethroat can be distinguished from its relative, as the upper surface is of a more delicate brown, and the abdomen of a purer white than the throat, which is tinged with a pale brown. The under wing-coverts are pale buff, the beak is dark brown, and the eyes are beautiful hazel. The total length of this species nearly reaches six inches.

THE tiny CHIFF-CHAFF, one of the smallest of the European birds, is the first Warbler that makes its appearance in the north, and that cheers with its pretty little song and its light, lively actions.

The curious name of this bird has been derived from its cry, which bears some resemblance to the words "Chiff-chaff! Chery-churry!" often repeated. This little song is sometimes uttered while the bird is on the wing, but generally when it is perched on some convenient bough of a lofty tree. The localities which it most frequents are woods and hedge-

rows, and so lively is it in temper, that its pleasant little voice is often heard before the trees have put forth their verdure. It is a very useful bird, as it feeds almost wholly on insects, and on its first arrival saves many a grand oak-tree from destruction by devouring the caterpillars of the well-known green oak moth, which roll up the leaves in so curious a manner, and come tumbling out of their green houses at the slightest alarm. Gnats and other small flies are a diet much in favor with the Chiff-chaff; and one of these birds that had been captured and tamed was accustomed to dash to the ceiling of the room in which it was kept, and to snatch from thence the flies as they settled after their fashion on the white surface.

This little bird has been seen in northern parts of Europe as early as the twelfth of March, and it remains



CHIFF-CHAFF, OR LESSER PETTICHAPS.—*Sylvia cinerea*.

in those countries as late as the middle of October, so that it is the first to arrive and the last to depart from there of all the European Warblers.

The nest of the Chiff-chaff is something like that of the common wren, being a rounded structure with a hole in the side, through which the bird obtains admission into the interior. It is seldom placed at any great elevation from the ground, and is often built upon the soil itself at the foot of some overshadowing bush. The materials of which it is composed are generally leaves, grasses, and moss, and the interior is lined with a warmer bed of soft feathers. The eggs are five or six in number, and their color is whitish-gray, speckled with a few spots of dark red.



The general color of this bird is ashen-brown upon the upper parts of the body, the quill-feathers being, as is usual, of a darker hue. The whole under surface is white, washed with yellowish-brown, and the under wing-coverts are of a fine soft yellow hue. The beak and eyes are brown. The entire length of this pretty little bird is rather less than five inches.

ANOTHER interesting member of this large genus is the WILLOW WARBLER, WILLOW WREN, or YELLOW WREN, its various names being derived from the localities which it frequents and the color of its feathers.

The habits of this bird are very like those of the Whitethroat, and it feeds on much the same kind of food, preferring insects to any other diet, and seldom if ever invading the fruit trees. It generally arrives in northern parts of Europe about the middle of April, when its cheery song may be heard enlivening the hedgerows and copses, sometimes being poured forth while the bird is on the wing, but generally from some elevated branch. The nest of the Willow Wren is like that of the chaffinch, and is generally placed upon the ground. The eggs are from five to seven in number, and their color is white-gray, dotted with numerous spots of pinky-red. The young birds are hatched in May or June. In Mr. Yarrell's work on birds, there is a very interesting account of the attachment displayed by the Willow Wren to its nest.

"In the spring of 1832, walking through an orchard, I was attracted by something on the ground in the form of a large ball, and composed of dried grass. I took it up in my hands, and upon examination found that it was a domed nest of the Willow Wren. Concerned at my precipitation, I put it down again as near the same place as I could suppose, but with very little hope that the architect would ever claim it again after such an attack. I was, however, agreeably surprised to find next day that the little occupier was proceeding with its work. The feathers inside were increased, as I could perceive by the alteration in color.

"In a few days two eggs were laid, and I thought my little *protégée* safe from harm, when a flock of ducks, that had strayed from the poultry-yard, with their usual curiosity went straight to the nest, which was very conspicuous as the grass was not high enough to conceal it, and with their bills spread it quite open, displaced the eggs and made the nest a complete ruin. I now despaired, but immediately on driving the authors of the mischief away, I tried to restore the nest to something like its proper form, and placed the eggs inside. That same day I was astonished to find an addition of another egg, and in about a week four more. The bird sat, and ultimately brought out seven young ones, but I cannot help supposing it a singular instance of attachment and confidence after being twice so rudely disturbed."

The general color of this bird is dull olive-green on the upper parts of the body, the quill-feathers of the wing being brown roped with green, and those of the tail dark brown. The chin, throat, and breast are yellowish-white, and the abdomen is nearly pure white. The total length of the bird is about five inches.

THE LESSER WHITETHROAT, or BRAKE WARBLER, is another of the European Warblers, arriving in the north towards the end of April.

It is not nearly so pleasing or so brilliant a songster as the species which have already been mentioned, but it is nevertheless very liberal in the exercise of its vocal powers, and chatters merrily as it flutters about the hedgerows, dives into the branches and reappears on the branch of some convenient tree or bush. It is not so often seen as the common Whitethroat, being more shy, and venturing less frequently from its hiding-place. On account of this habit of chattering, it has been termed the Chatterer by several writers. The nest is something like that of the common Whitethroat, being an open, saucer-like structure, placed among brushwood, and generally found upon some thick bramble or stunted bush. The materials of which it is composed are grasses, roots, and fibres, and it is generally lined with hair.

The color of this species is dark gray upon the upper surface, and the quill-feathers are dark brown except the two exterior feathers of the tail, which are grayish-white. The under surface is beautifully white, with a slight but perceptible tinge of pale carmine on the abdomen. The total length of the bird rather exceeds five inches.

FROM the willow Warbler, the WOOD WARBLER is distinguished by the green hue of the upper part of the body, the pure white of the under surface, and the light yellow streak over the eye. There are also other distinctions which are of no very great importance, as the difference between the two species, which are in other respects very similar, is readily decided by the above-mentioned characteristics.

This bird is rather late in arriving in the north, seldom making its appearance before the end of April, and towards the more northern parts of Europe being a week or ten days later. It remains with us until September, when it takes its departure for a warmer clime. Immediately on its arrival it commences its lively, though not much varied song, and perching upon a branch pours forth the trilling notes in rapid succession and with the greatest earnestness. Three or four of these birds will often sing against each other, their throats vibrating, their wings shivering, and their whole bodies panting with eager rivalry. The song of the Wood Warbler resembles the word "twee-ee" very much lengthened, and as it closes its song, it changes the last note into a peculiar hissing or whistling sound, drooping its wings at the same time and agitating them in accordance with its notes. Sometimes the bird utters its trilling notes while flying from one tree to another.

The Wood Warbler is elegant in shape, being light and active and possessed of much command of wing, a qualification which is necessary for the procuring of its food. This bird does not feed on fruits or berries, but restricts itself to insects, especially when they are in the caterpillar state. The leaf-rolling caterpillars are its principal food, and of these insatiable devourers it destroys vast quantities before they can do much harm. In obtaining them it flits round the trees, and is able to snap up the caterpillars as they hang by the slender thread to which they always attach themselves when alarmed. Sometimes the Wood Warbler chases the insects on the wing, and in this manner destroys great numbers of the green oak moth that have escaped from its beak while they were in the caterpillar condition.

The nest of this species is placed on the ground under the shelter of thick herbage or an overhanging bush, and a domed structure composed principally of long dried grass, leaves, fibres, and moss. The entrance is by a hole at the side, and the interior is lined with hair and fine fibres, feathers not appearing to be employed for this purpose. The number of eggs is from four to six, and their color is grayish-white, profusely sprinkled with dark red and ash-colored spots, gathered most thickly into a belt round the larger end. The general color of this species is soft green-gray on the upper parts of the body, and pure white below, the latter characteristics having earned for the bird the local name of "lenty-white." A streak of bright yellow passes over the eyes, and reaches as far as the chin and the sides of the neck. In total length the Wood Warbler rather exceeds five inches.

WITH the exception of the nightingale, the BLACKCAP WARBLER is the sweetest and richest of all the European song-birds, and in many points the voice of the Blackcap is even superior to that of the far-famed Philomel.

The Blackcap derives its name from the tuft of dark feathers which crown the head, and which in the males are coal-black, but in the females are deep reddish-brown. It is rather late in arriving, seldom being seen or heard until the end of April, and it remains in the north until the middle of September. As several specimens of this pretty bird have been noticed in the far north of Europe in the months of December and January, it is probable that some individuals may not migrate at all, but remain in the country throughout the entire winter. Should it do so, it might easily escape notice, as it would not be likely to sing much during the cold months, and owing to its retiring habits it is at all times more likely to be heard than seen.

While singing, the Blackcap chooses some spot where it can conceal itself if alarmed, and there pours forth his melodious notes in security. Sometimes he will sing while perched upon an open branch, but he is very jealous of spectators, and if he fancies himself visible, immediately drops among the foliage, and is lost to sight. The song of this bird is well described by Mr. Mudie in the following words:—

"Its song is generally given from a high perch or an elevated branch, on the top twig



THE FINISHING TOUCH.



if the tree be not very lofty. While it sings, the axis of the body is very oblique by the elevation of the head, and the throat is much inflated. While the bird is trilling, in which it excels every songster of the grove in rapidity and clearness, and in the swells and cadences which it gives to the same trill, the throat has a very convulsive motion, and the whole bird appears to be worked into a high state of excitement. It has indeed the mildest and most witching notes of all our warblers; it has not, certainly, the volume and variety of the nightingale, neither has it the ineffably sweet chant of the garden warbler; but its notes take one by surprise, and the changes, and especially the trills, are finer than those of any other bird.

“The song, when the bird is at rest, appears to be by turns like those of several birds; but it transposes them into a lower, or rather a minor key, and finishes off with variations of its own; and, as is the case with the works of some of the more impassioned musical composers, the very genius (so to speak) of the bird interferes with the melody, and a sort of indescribable wildness is the character of the whole.”

The Blackcap has often been known to become a mimic of other birds, and will frequently spoil its own exquisite notes by introducing imitations of the surrounding songsters.

The food of the Blackcap consists chiefly of insects, but it also pays attention to the ripe fruit in the autumn, being especially fond of raspberries. Perhaps it may choose this fruit on account of the little white maggots that are so often found in the centre of the over-ripe raspberry. When in captivity it can be easily tamed, and sings well; but the capture and domestication of a free singing bird always appears to me to be so heartless a business, that I can never recommend any one to act in such a manner.

As to the canary and birds of that class, which have never known liberty, and would be quite bewildered if they were to escape into the open fields, not knowing where to obtain food or where to roost, it would be a cruelty not to give them the welcome shelter of their accustomed home, provided that the cage be roomy enough for them to exercise their wings, and they be well supplied with food and water. But to imprison the restless nature of the free wild bird in the midst of its happiness, to take away the power of flight, to remove it from its well-loved woods and fields, to take it away from its expectant mate, and to imprison it within the narrow precincts of a wire cage, merely for the purpose of gratifying our ears with its song, is really so refined a piece of selfish barbarity, that I can but enter my strongest protest against it.

The nest of the Blackcap is generally placed only a foot or so above the ground, within the shelter of a dense bush or tuft of rank herbage, and is composed of vegetable fibres and hairs rather loosely put together. The eggs are four or five in number, and are of a pale, reddish-brown dappled with a deeper hue of brown. The general color of the Blackcap is gray, with a wash of dark green upon the upper surface and ashen-gray upon the lower surface. The total length of the bird is not quite six inches, its extent of wings nearly nine inches, and its weight not quite half an ounce.

THE well-known and far-famed NIGHTINGALE is an inhabitant of Europe, visiting the northern countries about the middle of April, and remaining there until the breeding season is over.

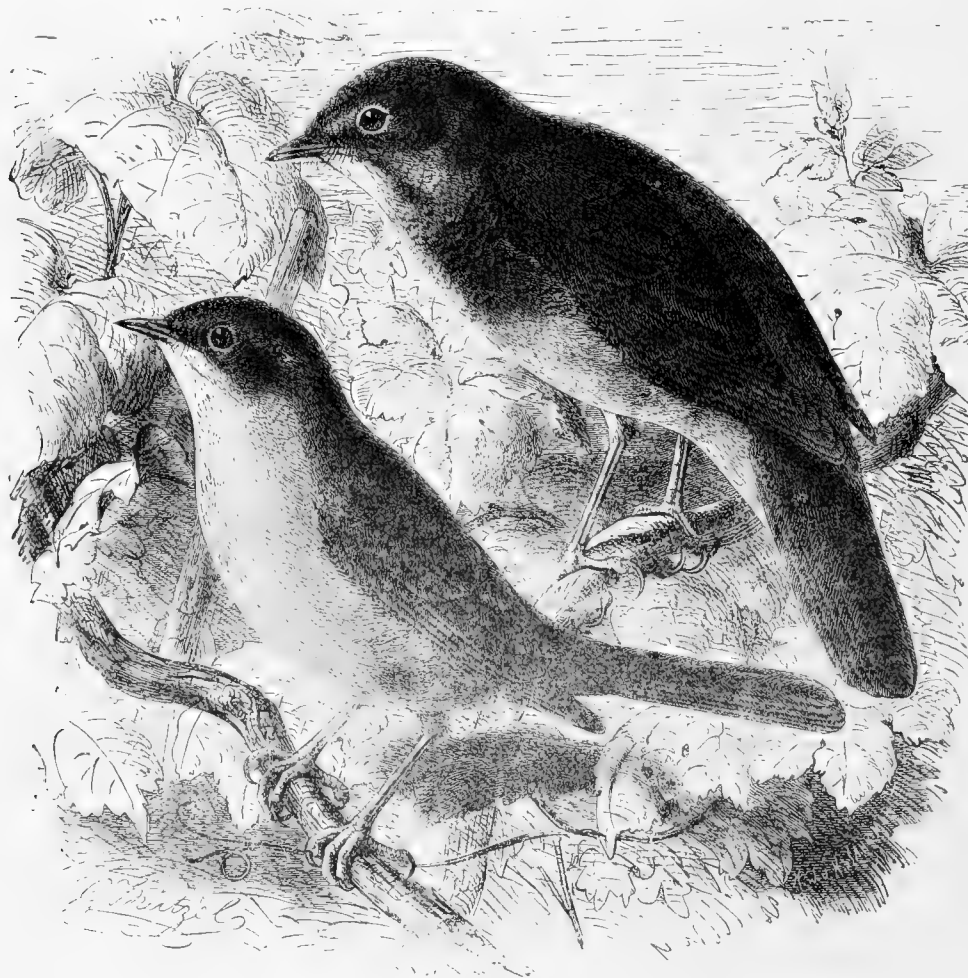
The far northern countries of Europe are seldom visited by this bird, and in Ireland and Scotland it is almost unknown. Attempts have been made to introduce the Nightingale into different parts of England by substituting its eggs for those of robins and other small birds, but although the young were regularly hatched and fledged, they all retired at the usual season and never came back again.

It is very probable that the quality and drainage of the soil and the character of the cultivation may have some influence upon the Nightingale, for it is well known that certain singing birds which had previously been excluded from the northern parts of England have advanced northward together with cultivation, and the Nightingale may probably follow their example.

The food of the Nightingale consists principally of various insects, and it is so powerfully attracted by the common meal-worm, that one of these creatures employed as a bait is sure to

attract the bird to its destruction. It appears to make great havoc among the caterpillars, which come out to feed at night, and are to be seen so abundantly on damp, warm evenings. In the autumn it is somewhat of a fruit-eater, and has been seen in the act of eating "black-heart" cherries, plucking them from the tree and carrying them to its young. In captivity it is best fed upon meal-worms, raw beef scraped with a knife and given very fresh, hard-boiled egg and water, all mixed into a kind of paste. The idea, however, of caging a Nightingale, seems so barbarous, that I shall say nothing more on that subject.

As is well known, the song of the Nightingale is almost wholly uttered in the evening, but the birds may sometimes be heard in full song throughout the day. Towards the end of



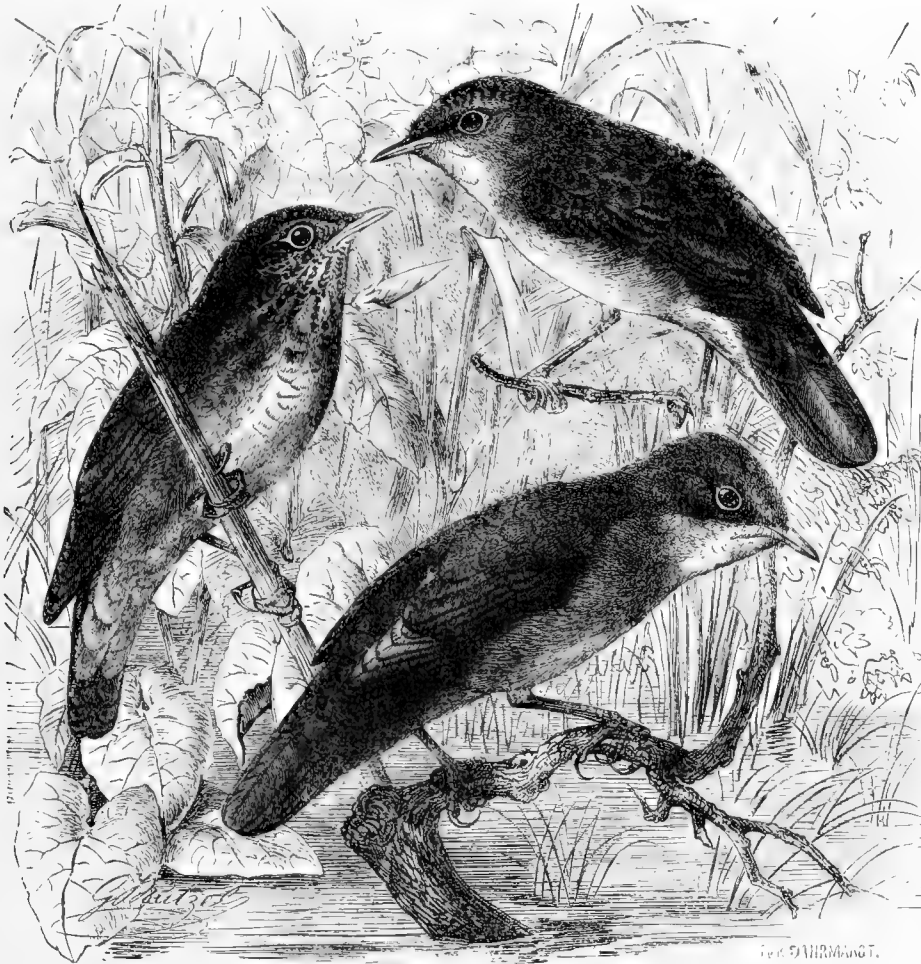
NIGHTINGALES.—*Luscinia vera* and *Luscinia philomela*.

June, when the young birds are hatched, the song changes into a kind of rough, croaking sound, which is uttered by way of warning, and accompanied with a sharp, snapping sound of the beak. The time when the Nightingales sing loudest and most constantly is during the week or two after their arrival, for they are then engaged in attracting their mates, and sing in fierce rivalry of each other, hoping to fascinate their brides by the splendor of their voices. When once the bird has procured a partner, he becomes deeply attached to her, and if she should be captured, soon pines away and dies, full of sorrowful remembrances. The bird dealers are therefore anxious to catch the Nightingale before the first week has elapsed, as they can then, by dint of care and attention, preserve the bird in full song to a very late period. Mr. Yarrell mentions an instance where a caged Nightingale sang upon an hundred and fourteen successive days.

The nest of the Nightingale is always placed upon or very near the ground, and is generally carefully hidden beneath heavy foliage. One such nest that I discovered was placed

among the knotted and gnarled roots of an old ivy-covered thorn stump that still maintained its place within a yard of a footpath. The nest is made of grass and leaves, and is of exceedingly slight construction, so slight, indeed, that to remove it without damage is a very difficult process, and requires the careful use of the hands. The eggs are generally four and sometimes five in number, and are of a peculiar smooth olive-brown, that distinguishes them at once from the egg of other birds of the same size.

The color of the Nightingale is a rich hair-brown upon the upper parts of the body, and grayish-white below, the throat being of a lighter hue than the breast and abdomen. The entire length of the bird rather exceeds six inches.



GRASSHOPPER WARBLERS.—*Locustella nevada*, *L. fluviatilis*, and *L. luscinoides*.

THE little GRASSHOPPER WARBLER has earned its name by its very peculiar song, which bears a singular resemblance to the cry of the grasshopper or the field cricket. It arrives in the north some time in April, according to the weather, and leaves in September.

Speaking of this bird, Mr. White, the naturalist of Selborne, says: "Nothing can be more amusing than the whisper of this little bird, which seems to be close by, though at a hundred yards' distance; and when close at your ear is scarce louder than when a great way off. Had I not been a little acquainted with insects, and known that the grasshopper kind is not yet hatched, I should have hardly believed but that it had been a *locusta* whispering in the bushes. The country people laugh when you tell them that it is the note of a bird. It is a most artful creature, skulking in the thickest part of a bush, and will sing at a yard's distance, provided it be concealed. I was obliged to get a person to go on the other side of the hedge where it haunted; and then it would run, creeping like a mouse before us for a hundred yards together, through the bottom of the thorns; yet it would not come into fair sight;

but in a morning early, and when undisturbed, it sings on the top of a twig, gaping and shivering with its wings."

I can corroborate this account by personal experience of the bird, and generally found that the country people entirely denied that the strange hissing whistle was that of a bird, and attributed it to the field-mouse. The ventriloquial power (if it may so be termed) is as remarkable as in the case of the common grasshopper, for it is almost impossible to ascertain from the sound the distance or even the direction of the creature which utters it.

The nest of the Grasshopper Warbler is cup-shaped, and made of various kinds of grasses, the coarser being woven round the circumference, and the finer placed in the centre. It is so admirably hidden that it is discovered less frequently than that of any other warbler. In all my bird-hunting days, I was never fortunate enough to secure an egg of the Grasshopper Warbler, although the bird was far from uncommon. A large patch of furze is a favorite locality for the nest, and the bird hides it so ingeniously among the thick roots of the prickly shelter, that even when the bird is watched to its home, its discovery is a matter of very great difficulty. The eggs are from five to seven in number, and their color is reddish-white, speckled with dark red spots.

The general color of the Grasshopper Warbler is greenish-brown, each feather being brown in the centre and green at the edges, so that its whole aspect presents rather a spotty or mottled appearance. The under surface is pale brown, diversified with some dark spots on the neck and breast. The total length of the bird is about five inches and a half.

THE generic title of *Calamodyta*, which has been given to the grasshopper Warbler and the SEDGE WARBLER, signifies a diver into reeds, and has been attributed to these birds in consequence of their habit of diving abruptly among the herbage whenever they are alarmed.



SEDGE WARBLER.—*Acrocephalus phragmitis*.

The Sedge Warbler arrives in this country about the same time as the last-mentioned species, and immediately repairs to the low-lying spots where it can find that peculiar herbage that grows near water. Sedges, reeds, rushes and willows are its favorite resorts, and upon the branches of the last-mentioned tree this Warbler may be observed, on the rare occasions when it deigns to present itself in full view. In such localities it conceals itself most effectually, and although it pours forth its pleasant song with great fluency, prefers to remain secluded in the thick foliage of its home. On one or two occasions, while sitting in a boat drawn among the thick reeds that are found in rivers, I have both seen and heard this interesting little creature, and noticed that it seldom shows itself within six or seven inches of the reed tops. By remaining perfectly quiet, a careful observer may note the peculiar fitful movements of the Sedge Warbler, as it dives among the reeds, and ever and anon shows itself in small open space, only to disappear the next moment.

The song of the Sedge Warbler is not powerful, but is very constantly uttered. It may be heard to the best advantage in the early morning and the dusk of the evening, and, like that of the nightingale, is often prolonged far into the hours of darkness. The strain is quick, and has a peculiar guttural sound that is quite indescribable in words.

The structure of the nest and its position are extremely variable, according to the locality in which the bird dwells. Generally the nest is composed of moss and various fibres, the finest being always worked into the centre so as to form a warm bed for the nest and young.



It is always placed under cover, sometimes being protected by a bunch of reeds drawn together, sometimes built in the midst of some thick bush, and sometimes overshadowed by a tuft of rank aquatic herbage. The eggs are from four to six in number, and their color is a very light yellow-brown, dappled with a darker hue.

The general color of this bird is brown of various shades above, pure white on the chin and throat, and buff upon the breast and abdomen. Its total length is rather under five inches.

THE FAN-TAIL WARBLER, which has been referred by Mr. Gould to the genus *Salicaria*, is a most interesting little bird, and deserving of our best admiration, not only for the elegance of its form and delicate beauty of its coloring, but for the wonderful skill which it displays in the formation of its nest.

The cradle in which is laid the nest of the Fan-tail Warbler is most ingeniously constructed from the living reeds among which the bird loves to make its residence. As it is so minute a creature, it is unable to make use of the thick and sturdy stems, but employs the flat leaf-blades and the smaller grasses in its architectural designs. Each leaf is pierced by the bill, drawn closely to another blade, and secured to it by means of a cottony thread which is passed through the perforation, and secured at each stitch by a knot so elaborately tied, that, in the words of Mr. Gould, "it appears the work of reason." The nest itself is composed of various soft and downy fibres, which are collected from different plants. In this wonderfully constructed nest the Fan-tail Warbler lays four or five eggs of a "bluish-flesh" color.

The popular name of Fan-tail has been given to this bird on account of the peculiar shape of the expanded tail, which is exhibited by the bird whenever it sets itself in motion. It is a lively little bird, popping in and out of the foliage in a very wren-like manner, spreading and flirting its beautifully loquacious little tail while it darts from spot to spot, as the Spanish ladies flirt their love-speaking fans. When observed, it takes to its wings, and will fly to a considerable distance before alighting. It is a native of the Mediterranean shores, and is found along the northern and eastern parts of Europe, and the adjoining portions of Africa and Asia. At Gibraltar it is found in plenty, enlivening the bushes with its quick and active movements, and its shrill merry notes.

The color of this pretty little bird is a warm chestnut-brown, each feather being marked with a dark strip running down its centre. The under surface is white with a brown wash, and the tail is brownish-black, each feather being graduated so as to give it the appearance of a partly-opened fan. Each tail-feather is tipped with white, presenting an agreeable contrast to the darker hues of the basal portions. The total length of this bird is about five inches.

### THE ERYTHACINÆ.

A SMALL but very interesting group of birds now claims our attention. These are the *Erythacinæ*, or Redbreast kind, including the Redbreast, the Wheatear, the Chats, the Redstart, and other similar birds.

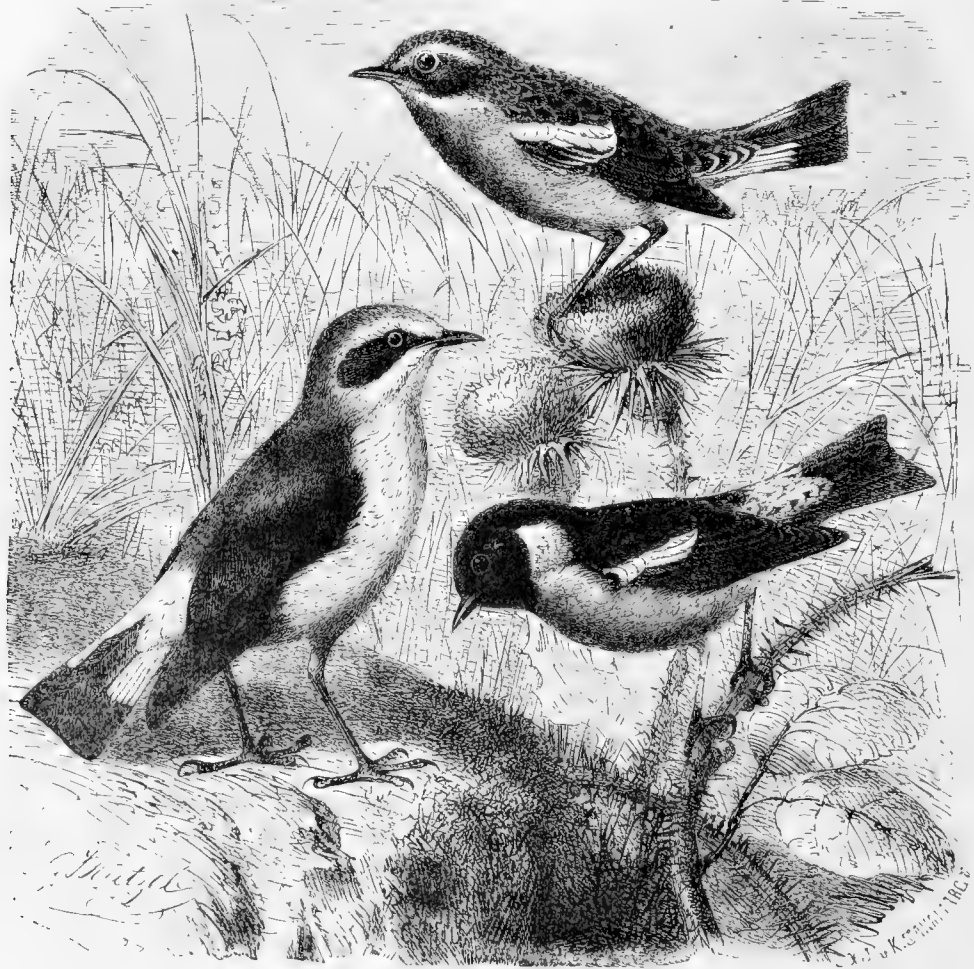
THE WHEATEAR, OR FALLOW CHAT, is well known, and on account of the delicate flavor of its flesh when fat, is sadly persecuted throughout the whole time of its sojourn in northern parts of Europe.

Being in great favor for the table, where it is popularly known as the ortolan, and consequently fetching a good price in the market, it is caught in great numbers, and sold to the game-dealers. The trap by which it is captured is a remarkably simple affair, consisting merely of an oblong piece of turf cut from the soil, and arranged crosswise over the cavity from which it was taken. A horse-hair noose is supported under the turf by means of a stick, and the trap is complete, needing no bait or supervision. It is the nature of the Wheatear to run under shelter at the least alarm; a passing cloud sufficing to drive it under a stone or into a hole in a bank. Seeing, therefore, the sheltering turf, the Wheatear runs beneath it, and is

caught in the noose. These simple traps are much used by the shepherds, who can make and attend to four or five hundred in a day, and have been known to catch upwards of a thousand Wheatears within twenty-four hours.

In the northern parts of England, the Wheatear is equally persecuted, but from superstitious motives; the ignorant countrymen imagining that its presence foretells the death of the spectator. In order, therefore, to avert so sad an omen, they kill the bird and destroy its eggs on every opportunity.

The chief reason for this absurd practice is, that the Wheatear is in the habit of frequenting any locality where it can find shelter for its eggs and young, and, therefore, may often be



WHEATEAR.—*Saxicola oenanthe*; WHINCHAT.—*Pratincola rubetra*; STONECHAT.—*Pratincola rubicola*.

found amid old ruins, in burial-grounds, or cairns. "Though it is a very handsome bird," says Mudie, "and in the early season sings sweetly, its haunts have gotten it a bad name. Its common clear note is not unlike the sound made in breaking stones with a hammer; and as it utters that note from the top of the heap which haply covers the bones of one who perished by the storms or by his own hand; or from the mound, beneath which there lie the slain of a battle-field, magnified through the mist of years; or from the rude wall that fences in many generations, it is no very unnatural stretch to the pondering fancy, which dwells in these parts, to associate the Wheatear with all the superstitions that unphilosophically, but not irreverently, belong to the place of graves.

THE STONECHAT is one of the birds that remain in Europe throughout the year, being seen during the winter months among the furze-covered commons which are now rapidly becoming extinct.

The name of Chat is earned by the bird in consequence of its extreme volubility, for it is one of the noisiest birds in existence. Its song is low and sweet, and may be heard to great advantage, as the bird is not at all shy, and, trusting to its powers of concealment, sings merrily until the spectator has approached within a short distance, and then, dropping among the furze, glides quickly through the prickly maze, and rises at some distance, ready to renew its little song. It is a lively bird, ever on the move, flitting from place to place with restless activity, and ever and anon uttering its sweet strains. Even in the winter months the Stonechat will make itself audible as it flutters about the furze-grown spots in which it loves to live. It is in these localities that it finds its supply of winter food, for the thick furze-bushes afford shelter to various worms and insects, and the little Chat is able to procure a plentiful meal by digging in the damp ground.

It is rather difficult to force a Stonechat to leave its shelter, and a shower of missiles generally has the effect of making it keep closer within its concealment. This little bird has the faculty of making a patch of furze very lively, for it pops in and out in a quick cheerful fashion, twitters its pretty song, dives among the rich golden-crowned bushes, and reappears with a toss of the head, and a flirt of the wing, as if exulting in the exuberance of its happiness. In the winter, the same bushes afford it concealment and shelter, for the heavy masses of snow only rest upon the furze, and leave abundant open space beneath, in which the little bird has perfect freedom of movement, and under which it is sure to find worms and insects buried in the soil. Snails, slugs, and other similar creatures always retire for the winter into sheltered spots, and they form many a meal for the Stonechat. Plantations, especially those that are made of young pines or firs, are favorite haunts of the Stonechat; but as the branches are all at some distance from the ground, the bird seldom, if ever, attempts to build its nest under their shade.

The Stonechat resembles the fly-catcher in some of its habits, especially in its custom of feeding on an elevated twig, the top of a post, or the highest pebble of a stone-heap, and catching the flies as they pass by its perch. Unlike the fly-catcher, however, it does not make choice of one perch, and return to it day after day; but after catching six or seven flies upon one spot, flutters to another, and from that to a third, ever changing its position from time to time.

The nest of the Stonechat is made of mosses, grass of different kinds, and is lined with fine fibres, hairs, and feathers. The number of the eggs is from four to six, and their color is very pale blue, diversified with numerous minute spots of reddish-brown upon the large end of the shell. The colors of the Stonechat are rather pretty. The head, the neck, the chin, throat, back, and tail, are deep sooty-black, contrasting boldly with the pure white of the tertial wing-coverts, the upper tail-coverts, and the sides of the neck. The remaining wing-coverts are deep brown, and the quill-feathers of the wings are also brown. The breast is chestnut, and the abdomen yellowish-white. The total length of the bird is rather more than five inches.

THE bird which occupies the top of the last illustration is called the WHINCHAT, on account of its fondness for the furze or whin. The stonechat has, however, quite as much right to the title, as it frequents the furze as constantly as the Whinchat.

This species may be easily distinguished from the preceding, by the long and bold white streak which passes across the sides of the head, and the absence of white upon the wing-coverts. It is a migratory bird, although it has on one or two occasions been seen in the north of Europe during the winter. In many of its habits it resembles the stonechat, and might readily be mistaken for that bird by any one who was not well acquainted with the two species. It sings rather constantly, uttering its sweet strains while on the wing, or while perched on some elevated bough. Mr. Yarrell mentions that it is fond of imitating the notes of other birds, and that a caged Whinchat has been heard to mimic the whitethroat, the redstart, willow warbler, missel thrush, and nightingale. The same bird would frequently sing at night.

Like the wheatear, the Whinchat becomes extremely fat in the autumn, and as it is prized

as a delicacy for the table, is rather persecuted by the game-dealers and their emissaries. The food of this bird is the same as that of the stonechat. The Whinchat arrives in this country about the middle or towards the end of April, according to the locality and the weather. It builds its nest soon after its arrival, and hatches its young about the end of May or the beginning of June. The nest is placed on the ground, is made after the fashion of the stonechat's habitation, and contains from four to six bluish-green eggs, slightly speckled with reddish-brown. Two broods are hatched in the course of the year.

The coloring of the Whinchat is as follows: The top of the head, the neck, and the back are mottled brown, each feather being lighter at the circumference than in the centre. An irregular broad brown streak extends from the angle of the mouth to the back of the neck, and above the eye is a long and rather wide streak of white. Another white stripe passes immediately below the dark-brown streak, and extends from the chin almost to the shoulder. The tail is white upon the base, and brown at the tip, each feather being edged with a lighter shade of the same hue. The chin is white, the throat and chest are pale fawn, and the abdomen is buff. The length of the bird is not quite five inches.

THE specific title of *phœnicura*, which is given to the REDSTART, signifies ruddy-tail, and is attributed to the bird in consequence of the light ruddy-chestnut feathers of the tail and upper tail-coverts.

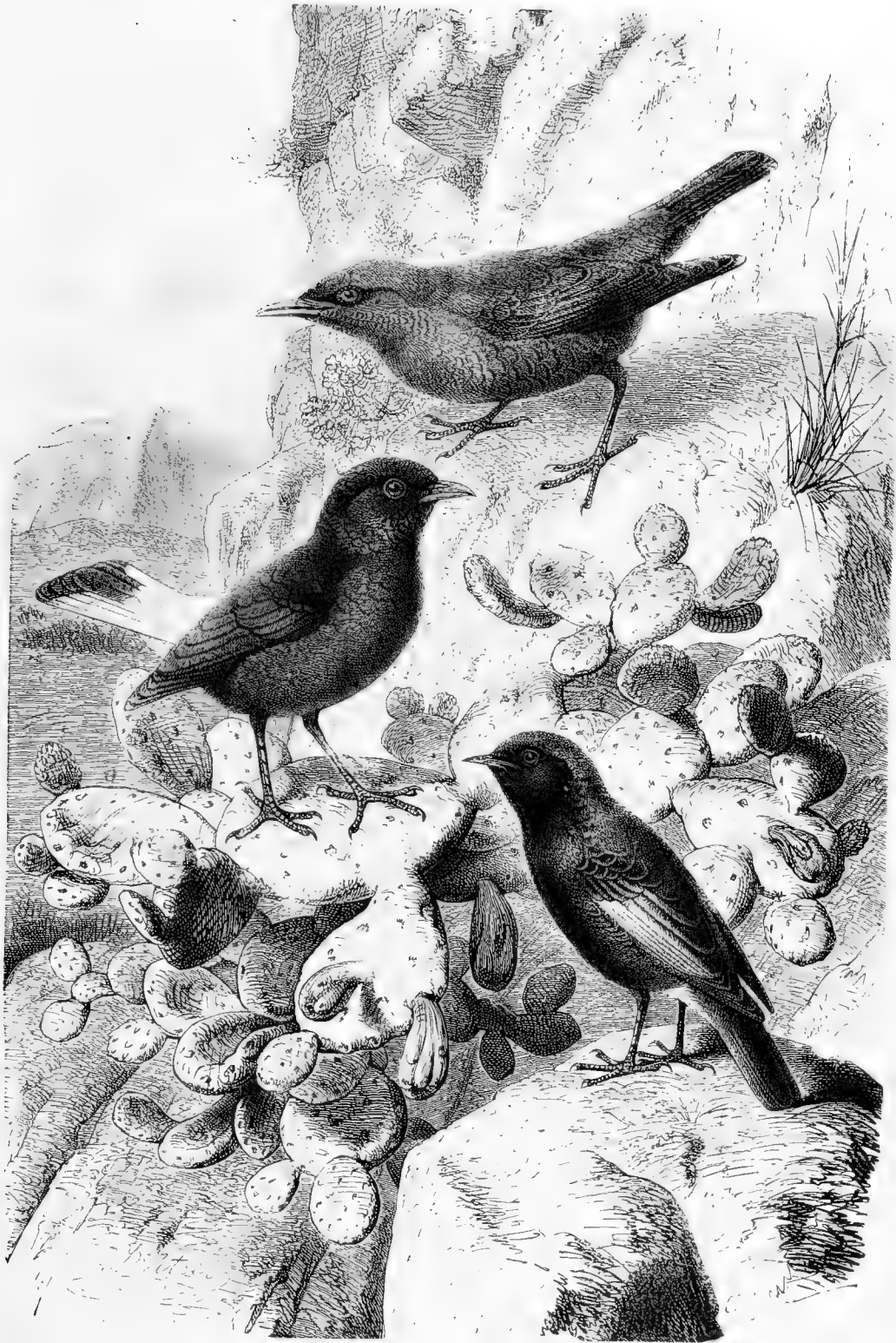
It is a handsomely colored and elegantly shaped bird, and is a great ornament to our fields and hedgerows. The name of Redstart is a very appropriate one, and has been given to the bird in allusion to the peculiar character of its flight. While walking quietly along the hedgerows, the observer may often see a bird flash suddenly out of the leafage, flirt its tail in the air, displaying strongly a bright gleam of ruddy hue, and after a sharp dash of a few yards, turn into the hedge again with as much suddenness as it had displayed in its exit. These manœuvres it will repeat frequently, always keeping well in front, and at last it will quietly slip through the hedge, double back on the opposite side, and return to the spot from whence it had started.

No one need fancy, from seeing the bird in the hedge, that its nest is in close proximity, for the Redstart seldom builds in such localities, only haunting them for the sake of obtaining food for its young. The nest is almost invariably built in the hole of an old wall, in a crevice of rock, a heap of large stones, in a hollow tree, or in very thick ivy. I have known this bird to make its nest in quite a small hole in a wall; the nest looking out upon a passage, and being within five feet of the ground. The eggs are generally five in number, although they vary from four to seven, and are of a beautiful blue, with a slight tinge of green. They are not unlike those of the common hedge sparrow, but are shorter and of a different contour.

The Redstart has a very sweet song, which, although not very powerful, is soft and melodious, bearing some resemblance to that of the nightingale. The bird has a habit of sitting on the top of a wall or some elevated spot, and there pouring forth his song, looking about in every direction, as if inviting a challenge, and spreading and closing his tail at intervals. Presently, without ceasing the song, he will dart off to another spot, in one of the short, uncertain flights which characterize the species, and settling upon some fresh perch, sing with new vigor. It often happens that in the breeding season the Redstart continues to sing far into the night, and recommences at the earliest approach of dawn.

The food of the Redstart is mostly of an insect nature, and is obtained in various ways. Sometimes the bird dashes from its perch upon a passing insect, after the manner of the fly-catcher; sometimes it chases beetles and other creeping insects upon the leaves and branches of the hedges; sometimes it hunts for worms, grubs, and snails from the ground; and it often picks maggots out of fungi, decaying wood, mosses, and lichens. Soft ripe fruit is also eaten by the Redstart, which, however, ought to be allowed its free range of the garden in recompense for the great service which it has performed in the earlier portion of the year, by devouring the myriad insects that feed upon the blossoms of fruit-trees. The softer berries form part of the Redstart's diet, but the bird does not seem to care about the hard seeds.

The coloring of the Redstart is as follows: The top of the head, the neck, and the back



REDSTARTS.



are bluish-gray, contrasting finely with the jetty black of the chin, the throat, the face, and the sides of the neck. The wings are rich brown, slightly streaked with a lighter shade of the same hue, and the upper tail-coverts and all the tail-feathers are bright ruddy chestnut, with the exception of the two central tail-feathers, which are striped with the same hue as the wing-feathers. The breast and all the lower surface is very pale chestnut, and the forehead is white. The length of the bird is more than five inches.

ANOTHER species of the same genus is occasionally, though very rarely, seen in Europe. This is the BLACK REDSTART (*Ruticilla tithys*), and is readily distinguished from the common species by the sooty black hue of its breast and abdomen. This bird resembles the common Redstart in many of its habits, but is seldom seen on open ground. A curious anecdote is related of this bird, which well exemplifies the force of parental affection.

A railway carriage had been left for some weeks out of use in the station at Giessen, Hesse Darmstadt, in the month of May, 1852, and when the superintendent came to examine the carriage, he found that a Black Redstart had built her nest upon the collision spring; he very humanely retained the carriage in its shed until its use was imperatively demanded, and at last attached it to the train which ran to Frankfort-on-the-Maine, a distance of nearly forty miles. It remained at Frankfort for thirty-six hours, and was then brought back to Giessen, and after one or two short journeys, came back again to rest at Giessen after a period of four days. The young birds were by this time partly fledged, and finding that the parent bird had not deserted her offspring, the superintendent carefully removed the nest to a place of safety, whither the parent soon followed. The young were, in process of time, full fledged, and left the nest to shift for themselves. It is evident that one at least of the parent birds must have accompanied the nest in all its journeys, for putting aside the difficulty which must have been experienced by the parents in watching for every carriage that arrived at Giessen, the nestlings would have perished from hunger during their stay at Frankfort, for every one who has reared young birds is perfectly aware that they need food every two hours. Moreover, the guard of the train repeatedly saw a red-tailed bird flying about that part of the carriage on which the nest was placed.

THE REDSTART (*Setophaga ruticilla*). This American species is a very small but especially handsome bird. The bright-red patch on its sides gleams with particular brightness as the bird darts through the thick green foliage. Two species, nearly allied, are respectively the Painted Fly-catcher and Red-bellied Fly-catcher, both from Mexico.

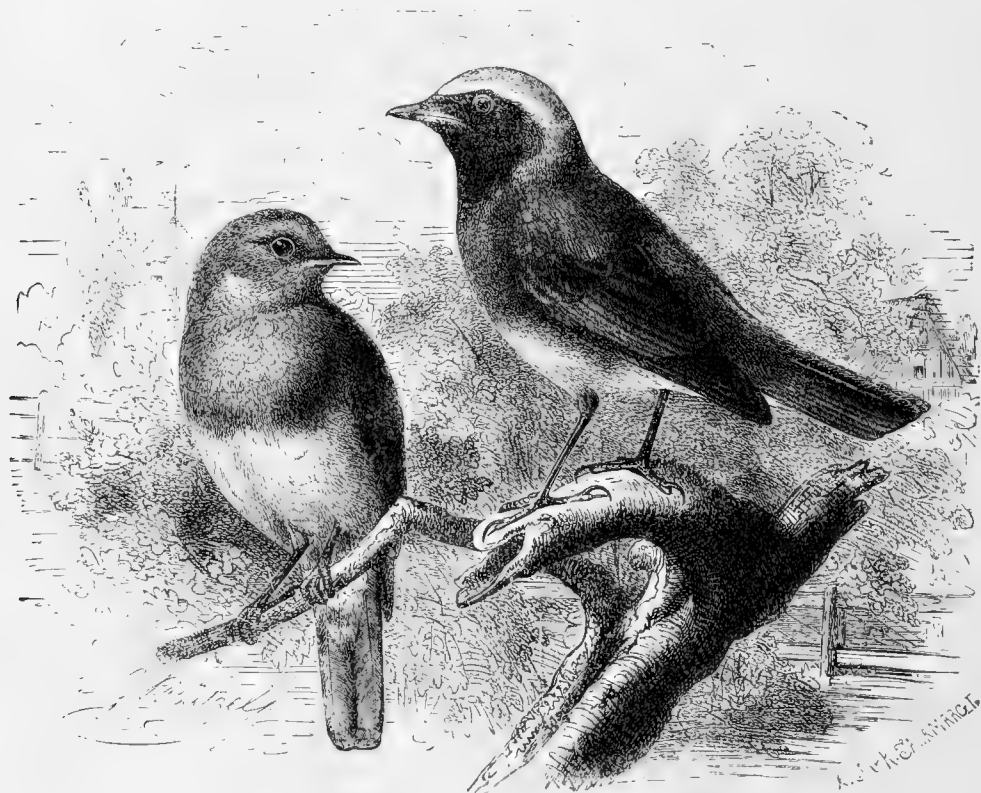
THERE are few birds which are more familiar to us than the REDBREAST, or ROBIN, a bird which is interwoven among our earliest recollections, through the medium of the Children in the Wood, and the mournful ballad of the Death and Burial of Cock Robin.

Although the Redbreast remains in Europe throughout the winter, it is very susceptible to cold, and one of the first birds to seek for shelter, its appearance among the outhouses being always an indication of coming inclemency. In cold weather, the Redbreast seldom perches upon twigs and branches, but crouches in holes, or sits upon the ground. The bird seems strongly attached to man and his home, and will follow the ploughman over the fields, picking up the worms which he turns up with the ploughshare, or enter his house and partake of his evening meal. Both bold and shy, the Redbreast is a most engaging bird, and seldom fails of receiving the affection of those to whom he attaches himself. One of these birds was exceedingly familiar with all our family, his acquaintance having commenced through the medium of some crumbs from our hands, and would always come to us whenever we called his name, "Bobby." Sometimes he would accompany us on our way to church through the lanes, and I have even seen him keeping pace with us.

Bread and butter is a very favorite dainty with the Robin, who has often been known to come uninvited, and to peck from the table. "Butter," according to Mr. Thompson, "is so great a dainty to these birds, that in a friend's house, frequented during the winter by one or two of them, the servant was obliged to be very careful in keeping what was in her charge

covered, to save it from destruction; if unprotected, it was certain to be eaten. I have known them to visit laborers at breakfast-time to eat butter from their hands, and enter a lantern to feast on the candle. One, as I have been assured, is in the constant habit of entering a house in a tan-yard, by the window, that it might feed upon tallow, when the men were using this substance in the preparation of hides. But even further than this, I have seen the Redbreast exhibit its partiality for scraps of fat, etc. Being present one day in December, 1837, when a golden eagle was fed, a Robin, to my surprise, took the eagle's place on the perch the moment that he descended to the ground to eat some food given him, and when there, picked off some little fragments of fat or scraps of flesh; this done, it quite unconcernedly alighted on the chain on which the 'rapacious' bird was fastened.

"I at the same time learned that this Robin regularly visited the eagle's abode at feeding-time, though as yet there was no severity of weather. Although the Robin escaped the golden eagle unscathed, as much cannot be said for one which occasionally entered the kitchen at the



REDBREAST AND REDSTART.—*Erythacus rubecula* and *Ruticilla phoeniceus*.

Falls, and sang there; having one day alighted on a cage in which a toucan was kept, this bird with its huge bill seized and devoured it." Another Robin, mentioned by the same author, was in the habit of attending on a carpenter, stealing the shavings as materials for his nest, and making very free with his grease-pot, pecking from it while in his hand.

The Robin is also remarkably fond of bread and butter on which honey or sugar has been spread, and will eat of this dainty until it is hardly able to fly. One of these birds who had been treated to such a repast, was so pleased with it that he returned, bringing with him three companions, who gorged themselves to such a degree, that they were taken up by hand, and put away for the night into a comfortable recess. After a while, between twenty and thirty Robins came to the house in hopes of obtaining the sweet food. Perhaps they may be instinctively led to sugar and fatty substances, as a means of preserving themselves against the effects of cold. Cream is in great favor with the birds during the winter months, and they have been seen to enter an outhouse which was employed for washing purposes, and to eat the soap.

The Redbreast is a most combative bird, fighting its own species with singular energy, and often killing its opponent. One of these birds killed upwards of twenty of its own kind,



merely because they came into a greenhouse which he chose to arrogate to himself. It is very jealous, too, of its human friends, and not only prohibits other individuals from sharing in the friendship, but will often drive away its own young if they approach too closely.

The nest of this bird is generally placed near the ground in a thick leafy bush, or in a bank, and is composed of dry leaves, moss, grass, hair, and feathers. I have seen the nest very well concealed among the thick ivy that had wreathed round a tree-trunk, and placed about eight feet from the ground. The bird seldom flies directly to its nest, or leaves it directly, but alights at a little distance, and creeps through the leaves or branches until it enters its home. When, however, the Redbreast chooses to become familiar with man, it takes advantage of his friendship, and deposits its nest and eggs under his care. The localities which have been chosen for the Robin's home are diverse beyond description, one of the most curious being the centre of a large cabbage growing in a garden.

The bird has been known to make its nest in a workman's tool-basket hanging against the wall, in a fold of a window-curtain, upon a shelf in a greenhouse, in the side of a saw-pit, in a knot-hole of timber used in a ship which was being built, the birds being not in the least discomposed by the constant hammering of the trenails. Mr. Thompson gives the following quaint account of a Redbreast and its nest:—

“At Fort William, the seat of a relation, the following circumstance occurred. In a pantry, the window of which was left open during the day, one of these birds constructed its nest early in the summer. The place selected was the corner of a moderately high shelf, among pickle-bottles, which, being four-sided, gave the nest the singular appearance of a perfect square. It was made of green moss, and lined with a little black hair; on the one side which was exposed to view, and that only, were dead beech-leaves. When any article near the nest was sought for by the housekeeper, the bird, instead of flying out of the window, as might have been expected, alighted on the floor, and waited there patiently until the cause of disturbance was over, when it immediately returned to its nest. Five eggs were laid, which, after having been incubated without success for the long period of about five weeks, were forsaken.

“The room above this pantry was occupied as a bird-stuffing apartment; after the Redbreast had deserted the lower story, a bird of this species—doubtless the same individual—visited it daily, and was as often expelled. My friend, finding its expulsion of no avail, for it continued to return, had recourse to a novel and rather comical expedient. Having a short time before received a collection of stuffed Asiatic quadrupeds, he selected the most fierce-looking carnivora, and placed them at the open window, which they nearly filled up, hoping that their formidable aspect might deter the bird from future ingress. It was not, however, to be so frightened ‘from its propriety,’ but made its *entrée* as usual. The walls of the room, the tables in it, and nearly the entire floor, were occupied by these stuffed quadrupeds.

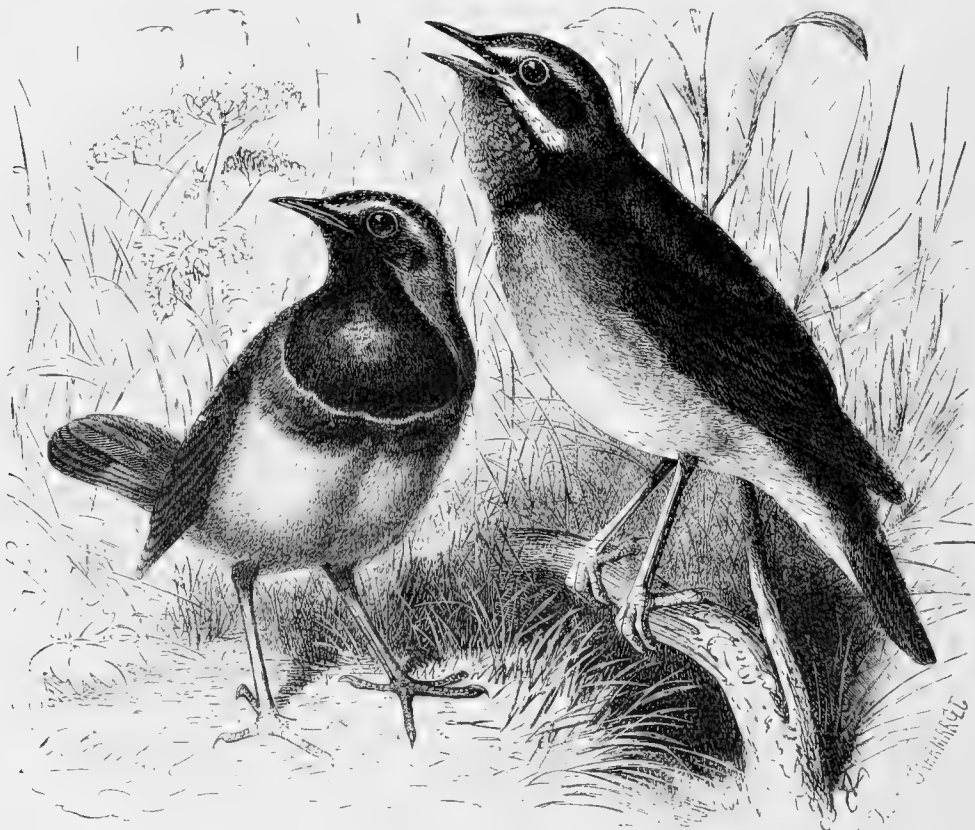
“The perseverance of the Robin was at length rewarded by a free permission to have its own way, when, as if in defiance of the *ruse* that was practised against it, the place chosen for the nest was the head of a shark which hung on the wall (the mouth being gagged may have prevented it being the site); while the tail, etc., of an alligator stuffed, served to screen it from observation. During the operation of forming this nest, the Redbreast did not in the least regard the presence of my friend; but both man and bird worked away within a few feet of each other. On the 1st of June I saw it seated on the eggs, which were five in number; they were all productive, and the whole brood in due time escaped in safety.”

The eggs of the Redbreast are generally five in number, as is the case with most of the song birds, and their color is grayish-white, covered with variously sized spots of pale rusty red. The song of this bird is very sweet and pleasing; and it is a pretty sight to observe two or more Redbreasts perched on different trees, and answering each other with their musical cries. Whenever the Redbreast perches on the top of a tree or other elevated spot, and begins to sing merrily, it is an unfailing indication that the weather of the coming day promises to be fair. The bird sings throughout the greater part of the year, beginning early in spring, and continuing it very late into the autumn. Even in the winter months, a bright sunny day is apt to excite the Robin to perch upon a twig, and pour forth a sweet though broken melody.

While hopping and feeding about the ground, it is wonderful to see what large worms and insects the little bird will devour. Should the worm be too large for him to swallow entire, as indeed is mostly the case, he tosses it about with his beak, bangs it against the ground, flings it over his head, jumps on it, and when he has thus mashed it into a pulp, pulls it to bits, and devours it piecemeal.

The color of the male Robin is bright olive-brown on the back, orange-red on the throat, chin, breast, forehead, and round the eye. A stripe of blue-gray runs round the red, and the abdomen and lower part of the breast are white. The bill and eyes are black. The female is colored after the same manner, but the tints are not so vivid as in her mate. The total length of the bird is nearly six inches, and its weight about half an ounce.

THE BLUE-THROATED WARBLER is very common in the southern parts of Europe, but is extremely rare in the north.



BLUE-THROATED WARBLER.—*Cyanecula suecica*; and CALLIOPE.—*Calliope kamtschatkensis*.

It is a sweet songster, the notes having some resemblance to those of the whinchat, but being more powerful. It prefers to haunt low-lying, marshy grounds, and places its nest among tufts of the rank herbage that generally grows in such localities. The nest is most carefully hidden, and cannot readily be discovered. The materials of which it is composed are dried grass and mosses, and it is lined with grass of a finer character. The eggs are greenish-blue, something like those of the redstart. The bird has a curious habit of rising into the air while singing, spreading its tail widely, and sailing with quivering wings and spread tail to a spot at some distance from that at which it rose. It begins its song early in the morning, and does not cease until late in the evening, being in this respect similar to the redbreast.

The color of this bird is rather varied, and is briefly as follows: The upper part of the body is rich brown, a color which extends to the two central tail-feathers, all the other rectrices being bright chestnut at the basal half, and black at the extremity. The chin, throat, and

upper part of the breast are brilliant blue, excepting a spot in the centre, which is white in young birds, but warms into red as they increase in age. A well marked black bar runs below the blue, followed by a narrow streak of white, and a rather broad band of the same ruddy chestnut as that of the tail. The abdomen is grayish-white. The total length of the bird is about six inches.

THE birds that belong to the genus *Copsychus* are spread over several portions of India and Africa, where they are rather plentiful in certain favored localities.

The DAYAL is an inhabitant of India and Ceylon, and in its wild state is a solitary bird, haunting the lower trees and jungle, and often paying visits to gardens and cultivated grounds. It is rather shy, and prefers the thickest foliage for its perch, never caring to rise to any great elevation if observed, but merely flying from tree to tree at a short distance from the ground. Its food consists of insects, which it generally takes upon the ground, jerking its tail upwards in a satisfied kind of manner, and then returning to its post among the bushes. As it regains its perch, it has a curious habit of depressing its tail, as if to counteract the effect of its former elevation. The song of the Dayal is remarkably good, and it possesses the power of mimicking other birds.

As it is readily tamed, it is often caught and caged, and when domesticated is employed in various rôles, the most common being that of a combatant. It is a most brave and combative little bird, and will fight to the death with as much courage as any gamecock. Even in its wild state it is constantly engaged in fighting, the male birds challenging each other just as is the case with the domestic fowl, and joining in combat as soon as they can come to close quarters. The native bird-catchers take advantage of this propensity, and employ a tame male for the purpose of decoying the wild birds into captivity; the whole process being singularly like that which is adopted for the capture of elephants in the same country.

The tame bird, on hearing the accustomed signal from his master, pours forth a defiant challenge, which is immediately answered by the nearest male. The decoy bird is then let loose, and the two immediately engage in fight, so fierce that both the combatants are seized by the bird-catcher. It is a very remarkable fact that the tame bird seems to take a pride in aiding its master, and will hold its struggling antagonist by beak and claws in order to prevent it from making its escape. In Ceylon this bird goes by the name of the Magpie Robin.

THE Warblers embraced under the family *Sylviolidae* are very numerous; sixty species are recognized.

THE PINE CREEPING WARBLER (*Dendræca pinus*) is one of the most familiar species. It is a very early visitor; often arriving north before the chilling winds have ceased. They frequent the pine groves, hence their name.

THE BLACK POLL WARBLER (*Dendræca striata*) is another common bird. It has earned the title "harbinger of summer" on account of its late arrival in New England. It ranges from the Arctic regions to the West Indies.

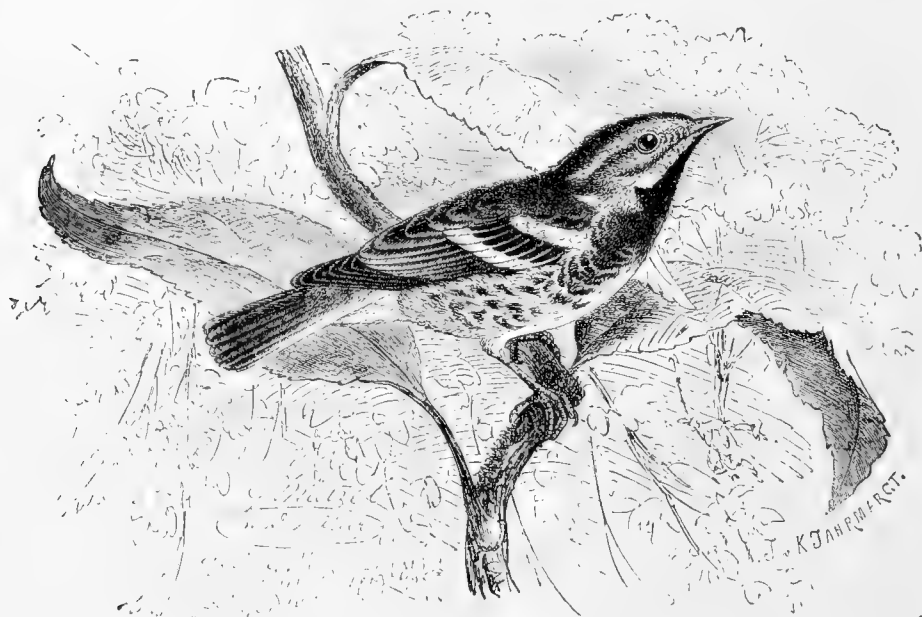
BLACK-AND-YELLOW WARBLER (*Dendræca maculosa*). This is common in the Eastern States, and as far west as the Missouri River.

THE BLACKBURNIAN is the most beautiful in plumage; its rich golden-spotted decorations are quite distinctive. It breeds in Maine.

THE CHESTNUT-SIDED WARBLER is exceedingly pretty in its plumage. It is especially limited to New England and the Atlantic States, breeding in Massachusetts and northward.

THE BLACK-THROATED GREEN WARBLER (*Dendræca virens*) is one of the many pretty

songsters that tarry with us in the New England States, but in limited numbers. It is rather common in the pine woods of Portsmouth, N. H., in June, and it is supposed to breed in the vicinity. Its nests with eggs have been found near Boston. Wilson says but little of it.



THE BLACK-THROATED GREEN WARBLER.—*Dendroica virens*.

Many of these pretty species are interesting, and descriptions of each would be very pleasing had we room to devote to them.

THE MARYLAND YELLOW-THROAT (*Geothlypis trichas*) is a very familiar bird—called in New England, Yellow-bird—and is not unlike a canary. Wilson says of it: “This is one of the humble inhabitants of the briars, brambles, alder bushes and such shrubbery as grows most luxuriantly in low, wet places, and might with propriety be called *Humility*; its business or ambition seldom leading it higher than the tops of the underbrush. Insects and larvæ being its principal food. It inhabits the whole United States, from Maine to Florida. Though by no means shy, it seldom approaches the farm-house.

THE YELLOW-RED POLL (*Dendroica palmarum*) is a common species. Unlike others, it spends much of its time feeding on the ground. In the fall it is seen flocking with the snow-birds.

Several species of this great family of Warblers are unfavorably named “thrush,” as the Golden-crowned Thrush and Water Thrush. Water Wagtail is a more appropriate name for one of them, as it has the habit of bobbing its tail constantly while feeding. There are three of this genus (*Siurus*).

THE pretty little BLUE-BIRD of America is deservedly a great favorite in the country which it inhabits, not only for its delicate blue back, red bosom, and sweet song, but from the engaging familiarity of its character.

In many respects the Blue-bird takes the place of the redbreast in the affections of bird-loving persons, and fearlessly associates with mankind, even though it be not driven to such companionship by cold or hunger. It is the harbinger of spring, and makes its appearance as soon as the snow begins to melt away from the surface of the earth, and the soil to loose itself from the icy bonds in which it had been held. Sometimes a few days of sharp frost or heavy snow will drive the Blue-bird to its hiding-place, but it soon emerges when the inclemency of the weather is past, and cheers the face of nature with its light-colored feathers and sweet rich

song. Many persons are in the habit of arranging a box with a hole in the side as a nest-box for the Blue-bird, and the grateful little creature never fails to take advantage of the domicile thus offered to it, and to pour forth its thanks in frequent music.

Although, as a rule, the Blue-bird is not seen except in the spring and summer months, it is evident that some specimens must remain throughout the winter, as even in the depth of the cold season, a few days of sunshine and warmth are sure to witness the presence of two or three Blue-birds that have been tempted by the genial warmth to leave for a while the snowy home in which they have been resting. The habits of this pretty bird are very interesting, and not the least so is the extreme care which it takes of its nest and young, sitting near them and singing its best, and occasionally flying off and returning with a caterpillar or other insect for their benefit.

The Blue-bird builds its nest in the hollows of decaying trees and other similar situations, where the eggs and nest are well sheltered from the rain and cold. The eggs are generally from four to six in number, and their color is a pale blue. Two broods are generally produced in a single season, and it is not uncommon for the bird to rear a third brood later in the year, should the weather be propitious. The food of this bird consists of various insects, chiefly those of the coleopterous order, spiders, small worms, and in the autumn of soft fruits and seeds. The bright, cheerful song of the Blue-bird is heard throughout the greater part of the year, commencing at the end of February or the beginning of March, and not ceasing until the end of October. The spring, however, is the season which is most enlivened by the song.

This species is widely and plentifully spread throughout the greater part of North America, and during the cold weather moves southward towards Brazil, Mexico, Guinea, and the neighboring parts, beginning its migration about November. The total length of the Blue-bird is rather more than seven inches, and its coloring is as follows: The head, back of the neck, and the whole upper surface is of a rich azure with purple reflections, excepting the shafts of the quill-feathers of the wing and tail, which are jetty black, and produce a very pleasing effect when contrasted with the blue. The quill-feathers of the wing are also black at their extremities. The throat, breast, and sides are rich ruddy chestnut, and the abdomen is white. The female is similar to her mate in coloring, but the tints are not so bright.

**THE BLUE-BIRD (*Sialia sialis*).** This favorite songster is one of the earliest visitors, arriving from the South about the middle of March, and sometimes earlier.

Wilson says of him: "The pleasing and sociable disposition of this little bird, entitles him to especial recognition. As one of the first messengers of spring, bringing the charming tidings to our very doors, he bears his own recommendation always along with him, and meets with a hearty welcome from everybody. The usual spring and summer song of the Blue-bird is a soft, agreeable, and oft-repeated warble, uttered with open, quivering wings, and is extremely pleasing. In his motions and general character, he has great resemblance to Robin Redbreast of England; and had he the brown-olive of that bird, instead of the blue, could scarcely be distinguished from him."

**THE CALIFORNIA BLUE-BIRD (*Sialia mexicana*)** is an inhabitant of the Pacific coast. The preceding species is not seen west of the Mississippi River, the present species taking its place on the west of this line. The shade of blue in this species is more intense than in the Eastern.

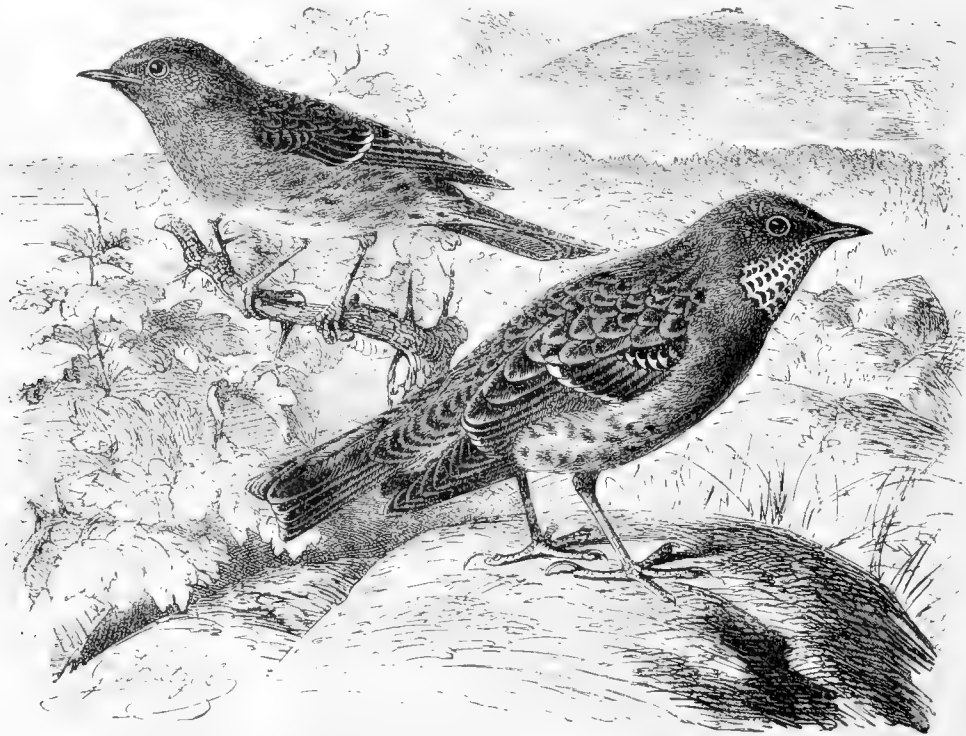
**THE ROCKY MOUNTAIN BLUE-BIRD (*Sialia arctica*)** is one of Audubon's discoveries. It is a lighter blue than the two preceding species, and has none of the brown shade. The bill is stouter and longer. The wings are longer in proportion to the body, reaching nearly to the end of the tail. It inhabits the high, dry, central plains in upper Missouri to the Rocky Mountain range, and south to Mexico, being rare on the coast of California.

**THE STONECHAT (*Saxicola œnanthe*)** is an allied species, called in Europe the Wheatear. It is a straggler in Greenland.

## ACCENTORS.

ONE or two examples of the pretty, though sober-plumaged, Accentors, are to be found in Europe, that which is best known being the HEDGE ACCENTOR, or HEDGE SPARROW, as it is often, though wrongly, called, as it by no means belongs to the same group of birds.

The Hedge Accentor is very common through the whole of Europe, and may be heard in the gardens, copses, and hedge-rows, chanting its pleasing and plaintive melody without displaying much fear of its auditors. It seems, indeed, to be actually attracted to man, and, in spite of the terrible havoc which is made year after year by young bird-nesters among its



HEDGE SPARROW and ALPINE ACCENTOR.—*Accentor modularis* and *alpinus*.

homes, it always draws near to human habitations as soon as the cold days of autumn commence, and may be seen flitting about the barns and outhouses in a perfectly unconcerned manner.

It is especially adapted for living among the hedges, as it possesses a singular facility in threading its way through the twigs, stems, and branches. It seems equally at home in dried brushwood, and may often be seen traversing the interior of a woodpile with perfect ease. The nest is one of the earliest to be built, and as it is frequently completed and the eggs laid before the genial warmth of spring has induced the green leaves to burst their inclosures, it is easily seen, and is the first victim of the neophyte bird-nester, who pounces upon its soft mossy walls and delicate blue eggs with exulting eagerness. The more experienced nester, however, will never touch so easy a prey, caring nothing for eggs which the veriest novice can discover.

The nest is generally placed at a very low elevation, seldom more than two or three feet from the ground, and it is rather large in proportion to the size of the bird. The materials of which the structure is made are various mosses, wool, and hair, and the eggs are usually five in number, of a bright bluish-green color. Sometimes, but very rarely, six eggs are found in a single nest. Bird-nesting boys are not the only foes with whom the Hedge Sparrow has to contend, for the cuckoo profits by the exposed position of the nest, and lays her eggs in the home of the Hedge Sparrow more often than in that of any other bird. There are generally

two broods of young in the year, and when the nest is robbed, the mother bird often lays three sets of five eggs in the course of the season, of which she may think herself fortunate if she succeeds in rearing one.

The song of the Hedge Accentor is sweet, but not varied nor powerful, and has a peculiar plaintive air about it. The bird is a persevering songster, continuing to sing throughout a large portion of the year, and only ceasing during the time of the ordinary moult. Like many other warbling birds, it possesses considerable powers of imitation, and can mock with some success the greater number of British song-birds.

This bird is nearly as bold as the sparrow, and will sometimes take up its residence in cities, where it soon gains the precociously impertinent airs that characterize all town birds, speedily loses the bright rich brown and gray of its plumage, and assumes as dingy a garb as that of the regular city sparrow.

The color of the Hedge Accentor is bluish-gray, covered with small brown streaks upon the head and the back and sides of the neck. The back and wings are brown streaked with a deeper tint of the same hue, and the quill-feathers of the wings and tail are of a rather darker brown, and not quite so glossy. The chin, the throat, and upper part of the breast are gray, and the lower part of the breast and the abdomen are white, with a wash of pale buff. The legs and toes are brown, with a decided orange tinge, and the beak is dark brown. The total length of the bird is nearly six inches.

THE ALPINE ACCENTOR (*Accentor alpinus*) is another European representative of this group.

The countries where this bird is usually found are Italy, France, Germany, and several other parts of Europe. It is a mountain-loving bird, seldom descending to the level of the plains except during the stormy months of winter. It can readily be distinguished from the ordinary Accentor by the throat, which is white spotted with black, and by the chestnut-black and white streaks upon the wing-coverts. The Alpine Accentor is larger than its British relative, being six inches and a half in total length, and its blue-green eggs are larger than those of that bird.

#### TITMICE.

THE group of birds which are distinguished by the name of *Parinæ*, or TITMICE, are easily recognizable, having all a kind of family resemblance which guards the observer from mistaking them for any other bird. They are all remarkable for their strong, stout, little beaks, the boldly defined color of the plumage, and the quick irregularity of their movements. They are all insect-eaters, and are remarkably fond of the fat of meat, by means of which, used as a bait, they can often be caught. Their feet and claws, though slight and apparently weak, are really extremely strong, enabling the bird to traverse the boughs with great rapidity, and to cling suspended from the branches.

THE first example of these birds is the GREAT TITMOUSE, an inhabitant of many parts of Europe.

It does not migrate, finding a sufficiency of winter food in its native land. During the summer it generally haunts the forests, gardens, or shrubberies, and may be seen hopping and running about the branches of the trees in a most adroit manner, searching for insects, and occasionally stocking them out of their hiding-places by sharp blows of the bill. The beak of the Great Titmouse is, although so small, a very formidable one, for the creature has often been known to set upon the smaller birds, and to kill them by repeated blows on the head, afterwards pulling the skull to pieces, and picking out the brains.

During the winter the Great Titmouse draws near to human habitations, and by foraging among the barns and outhouses, seldom fails in discovering an ample supply of food. Mr. White has recorded a curious instance of the ingenuity displayed by this species while searching for food. "In deep snows I have seen this bird, while it hung with its back

downwards (to my no small delight and admiration) draw straws lengthwise from out the eaves of thatched houses, in order to pull out the flies that were concealed between them; and that in such numbers that they quite defaced the thatch, and gave it a ragged appearance." In very severe winters, the birds will even carry away the barley and oat straws from the ricks.

THE little BLUE TITMOUSE is one of the most familiar birds of Europe, as it is widely spread throughout the land, and is of so bold a nature that it exhibits itself fearlessly to any observer.

In many of its habits it resembles the last-mentioned species, but it nevertheless possesses a very marked character, and has peculiarities which are all its own. As it trips glancingly over the branches, it hardly looks like a bird, for its quick limbs and strong claws carry it over the twigs with such rapidity that it resembles a blue mouse rather than one of the feathered tribe. Being almost exclusively an insect-eating bird, and a most voracious little creature, it renders invaluable service to the agriculturist and the gardener by discovering and destroying the insects which crowd upon the trees and plants in the early days of spring, and which, if not removed, would effectually injure a very large proportion of the fruit and produce. In the course of a single day a pair of blue Titmice were seen to visit their nest four hundred and seventy-five times, never bringing less than one large caterpillar, and generally two or three small ones. These birds, therefore, destroyed, on the average, upwards of five hundred caterpillars daily, being a minimum of fifteen thousand during the few weeks employed in rearing their young.

While searching for insects, the Blue Titmouse often bites away the buds of fruit-trees, together with pears and apples, but in almost every case it seeks to devour, not the fruit, but a maggot which lies concealed within it, and which, if not destroyed, would not only injure the particular fruit, but would also destroy many others by means of its future progeny. The food of this bird is of a most multifarious character, for the Blue Titmouse has been known to eat eggs, other birds which it kills when young or disabled, meat of various kinds, for which it always haunts the knackers' yards and country slaughter-houses, peas, oats, and the various kinds of food which are to be found in farm-yards. So fond is it of fat meat, that a piece of beef suet is an unfailing bait which always succeeds in attracting the Titmouse into the jaws of the trap. It has even been known to peck holes in hens' eggs; for the purpose of eating the contents; but on account of the large size of the eggs, it was not able to attain its purpose. I have even seen the Titmice unite against a tame hawk which I kept, assault him simultaneously, and carry off the piece of meat which had just been given to him.

It is a very pugnacious little bird, and is always ready for a combat with any one of its own kind. But in the breeding season its combative character is developed to the fullest extent, and the tiny blue creature will boldly attack a man if he should happen to approach too near the nest. Should the position of the nest be discovered, and the hand inserted in order to feel for the eggs, the mother-bird utters a sharp, angry hiss, and bites so sharply at the intruding fingers that they are generally hastily withdrawn, under the impression that a viper has been the hidden aggressor. Small as is the bird, her beak is so sharp and strong that it can cause considerable pain, and has earned for the bird the provincial name of Billy Biter. I once got the tips of my fingers sadly maltreated by a female Titmouse, while I was trying to feel the position of the eggs.

The nest of this species may be found in the most extraordinary localities, such as hollow trees, holes in old walls, the interior of disused spouts, sides of gravel-pits, the hat of a scarecrow, the inside of a porcelain jar, or the cylinder of a pump. One bird had actually chosen a bee-hive as its residence, and had succeeded in building its nest and rearing its young while surrounded by the bees going to and returning from their work. Another Titmouse contrived to get into a weathercock on the summit of a spire, and there made its nest in security. The eggs are small and rather numerous, being generally about eight or ten, but sometimes exceeding the latter number.





SELMAR HESS, PUBLISHER, N. Y.

TITMICE.





**Testimonials to the "Tafeln" of Brehm's Thierleben.**

The late CHARLES DARWIN writes:—"The illustrations are the best I ever saw in any work. I find it superfluous to enter here into particulars, as I already, in the 'Descent of Man,' have willingly and openly confessed how much I have profited by Mr. Brehm's book, and how highly I esteem it."

Sir JOHN LUBBOCK, Bart., D.C.L.:—"You have, I think, done good service in publishing them. They are certainly very admirable."  
W. B. CARPENTER, M.D., LL.D., writes:—"I can quite endorse the favorable opinions already given by distinguished zoologists as to the high character of the illustrations generally."

WE have concluded to submit for public patronage a work with the above title, being a series of exquisite Engravings representing the ANIMAL WORLD, executed with great scientific accuracy, and accompanied by full Descriptive Text, written in popular terms, so as to delight and instruct the people. Anyone who has considered the subject must be at a loss to understand why an ILLUSTRATED NATURAL HISTORY, comprehensive and at the same time popular, has not before this been published in this country. Indeed any lover of animals who has visited the great museums and zoological gardens and has had access to books of engravings in the public libraries, could not fail to remark the wealth of material in existence devoted to this subject. Being confirmed in our conviction of the desirability of such a work, we laid under contribution the best existing authorities for the production of most perfect representations of all the more important living creatures, and among the artists whose delineations will delight the reader, we may mention Harrison Weir, Wolf, Coleman, Fr. Specht, and Mutzel. By far the majority of the engravings in these volumes are from drawings made from the *living* animals, many at the Zoological Society's Gardens in London, England.

We purpose that our patrons shall be aided and interested in their study by such an array of pictures as has never before embellished any Natural History. In numerous instances the engraving is printed in oil-colors, and this portion of the illustrations has been taken charge of by Messrs. L. Prang & Co., of Boston, who we believe rank foremost for high artistic results in this department of printing. These Oleographs were copied under the superintendence of Mr. Prang from the renowned "Tafeln" of "Brehm's Thierleben," so that they may be declared perfectly reliable.

We sought competent advice from various sources as to the most suitable text that should accompany this panorama of handsome Engravings. It was found impossible to embody all the present ideas of naturalists in a single work like this on account of the rapid advances and constant changes in their knowledge of, and habits of thought respecting, the Animal World. And it seemed to us correct that the true object of Zoology is not to arrange, to number, and to ticket animals in a formal inventory, but to inquire into their life-nature, and not simply to investigate the lifeless organism.

What do we know of "Man" from the dissecting-room? Is it not Man, the warrior, the statesman, the poet, etc., that we are interested in? With all veneration which attaches itself to those who are the accredited possessors of abstruse learning, their inordinate use of phraseology detracts too much, we fear, from the fascination that the study of the Animal World would otherwise yield, and as we are not content to have our work restricted to a favored few, we thought the task placed in our hands to be to keep the work free from a repellant vocabulary of conventional technicalities. Our endeavor has been to find an author whose work would be noted for its fund of anecdote and vitality rather than for merely anatomical and scientific presentation, and we arrived at the conclusion that we could not do better than avail ourselves of the Rev. J. G. Wood's comprehensive work—a work most popularly approved by speakers of the English language. It would be superfluous to say one word concerning the standard character of his book, from the pages of which old and young at the other side of the Atlantic have obtained so much instruction and rational amusement. Avoiding the lengthened dissertations and minute classifications of specialists, he presents to his readers in popular terms a complete treatise on the Animal Kingdom of all climes and countries. The one objection that could be urged against it was, that animal life in America might be treated more fully and American forms given more consideration. In order to obviate this drawback and to do full justice to the creatures of our own country, we secured the aid of Dr. J. B. HOLDER, of the American Museum of Natural History in New York, an undoubted American authority, who has adapted Wood's work to American wants and given prominence to American forms of Animal life.

The splendid work on Rodentia, by Allen, Coues, and others, will be fully consulted. The valuable work on North American Birds, by Baird, Brewer, and Ridgway, will be the guide in the treatment of birds. The late arrangement of the classification and nomenclature of North American Birds, by Mr. Ridgway, and the Committee on that subject of the Ornithologists' Union, will be utilized in full. The arrangement of Mammals will be after the latest classification by Professor Flower, of the Zoological Society of London. So that this will be the first popular Natural History worthy of the name that has made its appearance here, which gives due and full recognition to the animate world surrounding us.

**Terms of Publication.**

The extent of the work will be 68 parts of 28 pages, at the price of 25 cents each. The entire publication will contain 34 Oleographs and 68 Full Page Engravings on Wood, besides many hundreds of exquisite Illustrations interspersed through the text. The parts will be issued every two weeks, and are payable only as delivered. No subscriber's name will be received for less than the entire work, and anyone removing, or not regularly supplied, will please address the Publisher by mail.

N. E.

**SELMAR HESS, Publisher, New York.**

# Animate Creation

A popular edition  
of the

Standard  
Natural  
History

Our  
Living  
World



Selmar Hess,  
Publisher  
New York



The bird is readily tamed, as may be seen by the following anecdote related by Mr. Thompson.

“One of the ‘Falls,’ when let out of the cage in summer, roosted upon the top; but in winter, although in a warm room, selected the hottest place in which it could remain safely for the night, namely, under the fender, a locality which afforded it at the same time sufficient space and shelter. This bird, from its familiarity and vivacity, was most amusing. The cage was covered with close netting, which it several times cut through, thereby effecting its escape into the room. It then flew to the children, and having taken hold of a piece of bread or cake in the hand of the youngest, would not forego the object of its attack, although shaken with the greatest force the child could exert; indeed, the latter was so persecuted on one occasion for a piece of apple, that she ran crying out of the apartment. It was particularly fond of sugar.

“Confined in the same cage with this bird were some other species, and among them a red-breast, which it sometimes annoyed so much as to bring upon its head severe chastisement. A favorite trick was to pull the feathers out of its fellow-prisoners. A young willow wren was sadly tormented in this way. A similar attempt was made on a song-thrush introduced into its domicile, but it was successfully repelled. This mischievous Tit escaped out of doors several times, but returned without being sought for.”

THE two little birds described below, the Rufous-bellied Titmouse and the Yellow-cheeked Titmouse, are among the most striking examples of this pretty group, the one for its bold and conspicuous crest, and the other for the curious coloring of the head and neck.

THE YELLOW-CHEEKED TITMOUSE inhabits several parts of Asia, and is mostly found among the northwestern Himalayas, where it is rather abundant. In its habits it resembles the ordinary Titmouse of Europe. The nest of this species is constructed of moss, hair, and fibres, and is lined softly with feathers. The position in which it is placed is usually a cavity at the bottom of some hollow stump, generally a decaying oak, and it contains four or five eggs of a delicate white blotched with brownish spots. The coloring of this bird is rather peculiar and decidedly bold. The top of the head, the crest, a streak below the eye, and a broad band reaching from the chin to the extremity of the abdomen, are deep jetty-black. The cheeks are light yellow, as is the whole of the under surface of the body, with the exception of the flanks, which take a greener hue. The wings are gray, mottled with black and white, and the tail is black with a slight edging of olive-green.

THE RUFIOUS-BELLIED TITMOUSE inhabits Southern India and Nepál, and cannot be considered as a rare bird. In this pretty creature the head, the crest, and the throat are jet-black, contrasting boldly with the pure white of the ear-coverts and the back of the neck. The back, wings, and tail are ashen-gray, washed with a perceptible tinge of blue, and the abdomen is reddish-gray, as are the edges of the primary and secondary quill-feathers of the wing.

THE LONG-TAILED TITMOUSE is familiarly known throughout Europe, and is designated under different titles, according to the locality in which it resides, some of its popular names being derived from its shape, and others from its crest. In some parts of Europe it is called “Long Tom,” while in others it goes by the name of “Bottle-crested Tit,” or “Pcke-pudding,” the latter word being a provincial rendering of the useful ordinary apparatus termed a pudding-bag.

The coloring of this species is as follows: The upper part of the head, the cheeks, the throat, and the whole of the under surface are grayish-white, warming into a rosy hue upon the sides, flanks, and under tail-coverts. A broad stripe of deep black passes over the eye and ear-coverts, and joins a large triangular patch of the same jetty hue, which extends from the shoulders as far as the upper tail-coverts. The shoulders, the scapularies, and the lower part of the back are washed with a decided tinge of a ruddy hue. The wings are mostly black, with the exception of the tertiary quill-feathers, which are edged with white. The long

central feathers of the tail are black, and the remainder are black on the inner webs and white on the outer. They are regularly graduated in length, each pair being about half an inch shorter than the preceding pair. Both sexes are similar in their coloring. The total length of the bird is about five inches and a half.

IN personal appearance the CRESTED TITMOUSE is the most conspicuous of the European species, on account of the peculiarity from which it derives its name.

It is a very rare bird in the northern parts of Europe, but when it makes its appearance there, is generally seen in little troops. On several parts of the European continent it is plentifully found, especially frequenting Denmark, Sweden, Russia, Switzerland, and Germany. It prefers the pine forests to any other locality, and it generally builds its nest in the hole of some decaying tree, the oak appearing to be the most favored. In one single instance noticed by Sir W. Jardine, the nest was almost wholly lined with the cast exuviae of snakes. The eggs are about eight or ten in number, and their color is generally white, spotted with a few light red specks.

The coloring of this bird is mostly black and white, disposed in a pleasing manner and supplemented by mouse-colored shadings on its upper parts. The feathers of the crest are black at the base and edged with a rather broad band of white; the back and wings are soft brown, the under surface of the chest and abdomen is very pale fawn, and the under surface of the wings and tail is a delicate pearly gray. It is a small bird, the total length being only four inches and a half.

ANOTHER European Titmouse is the COLE TITMOUSE (*Parus ater*), so called on account of the dark coloring of its plumage.

It is a tolerably common bird throughout Europe. In its habits it is not unlike the Long-tailed Titmouse, being ever restlessly in motion, and constantly running up and down the branches of trees and bushes in search of its insect prey. It is not quite so fearless of man as some of the allied species, and is found in small woods, hedge-rows, and copses, rather than in gardens and orchards, so that it frequently escapes the notice of a casual observer. The nest of this species is usually placed above the ground, and is built in some sequestered and sheltered situation, such as the hole of a tree or a wall, the hollow of gnarled or projecting roots, or in the midst of some very thick and shrubby bush. It is composed of moss and wool, and lined with hair. The eggs are generally about seven or eight in number, and are of a pure white, mottled with pale reddish spots.

The voice of the Cole Titmouse is rather peculiar, and is well described by Mudie:—"The song of the Cole Tit is not indeed one of many notes, or of mellifluous inflections; it is little else than the same note repeated four or five times, but with so much variety of pitch and tune as to form a sort of cadence which would make a good variety anywhere, as it is shrill and clear, and one which is particularly welcome and cheering in those mountain woods which the summer warblers but rarely visit. The bird sings in the noontide heat, when most birds, and especially those on the open wastes, with which the haunts of this species are usually interspersed, are silent."

The Cole Titmouse is colored as follows: The head, chin, throat, ear-coverts, and parts of the sides of the neck are deep black, and the cheeks, sides of the neck, and a patch upon the nape are white. The back is bluish-gray, and the wings are brownish-gray with a little green on some of the feathers, and two narrow bars of white across the tips of the coverts. The breast is grayish-white, and the abdomen is pale fawn washed with a slight tinge of green. The total length of the Cole Titmouse measures about four inches and a half.

THE MARSH TITMOUSE is another European species, and may be distinguished from the preceding species, to which it bears a considerable resemblance, by the absence of the black patch upon the throat and the white spot on the nape of the neck. It derives its popular name from its marsh-loving habits, as it is generally to be found near the water meadows and the low-lying banks, hopping about the osiers and willows, or seeking its food in the swampy grounds.



The Titmice form a numerous race, five genera and sixteen species inhabiting North America. Several varieties are also known. The European species are beautifully illustrated in these pages, showing the general characteristics. The American species are not so diversified in colors, nor in form, but are cheery little creatures. Their chick-a-dee-dee-phœbee notes in the cold winter weather claims for them much admiration.

THE BLACK-CAPPED TITMOUSE (*Parus atricapillus*), is one of our most familiar birds. He is resident the year 'round; active, noisy, restless, hardy beyond any of his size, braving the severest cold of our continent as far north as the country around Hudson's Bay, and always appearing most lively in the coldest weather. The males have a variety of very sprightly notes, which cannot, indeed, be called a song, but rather a lively, frequently-repeated, and often-varied twitter. They are mostly seen in fall and winter, when they leave the depths of the woods and approach nearer scenes of civilization. At such seasons they abound among evergreens, feeding on the seeds of the pine-trees.

THE BEARDED TITMOUSE is one of the long-tailed species. It is rare in England, and has only lately been introduced into the British Fauna. It is not uncommon on the continent. It displays the singular feat, seen in some of this race, of hanging head downwards to feed on its prey. Its voice is remarkably soft and low, and resembles, it is said, the distant sound of small cymbals.

THE LEAST TIT is, truly, a "tid-bit" of a bird, only four inches in length. It inhabits the Pacific coast.

#### BUSH-CREEPERS.

THE *Mniotiltinæ*, or Bush-Creepers, are well represented by the common BUSH-CREEPER of India.

It is a sociable little bird, being generally seen in small troops, and often associating with birds of different species. Although not very shy, it yet loves retired localities, such as woods and thickets, and may there be seen flitting merrily among the foliage and underwood, and perpetually engaged in a search after insects. In some of its movements it resembles the honey-eaters, for it often pushes its head completely into the corollas of flowers while endeavoring to capture the minute insects that lurk at the bottom of the cup, and emerges with its forehead covered with yellow pollen. The voice is a low twittering note, constantly uttered while the bird is in motion, but there is no real song.

The nest of the Bush-Creeper is rather variable in its position and structure, sometimes being suspended from the branches, and at others placed in the centre of some thick bush. Generally it is suspended between two twigs, to which it is woven by means of various animal and vegetable fibres, mostly obtained from the cocoon of caterpillars and the fibrous bark of trees. The shape of the nest is cup-like, but the whole structure is so delicately balanced that even in a fierce storm the eggs are not flung out of their places.

There are many species of Creepers, some of which inhabit Asia, others are found in Africa, and some in Australia. The word *Mniotiltinæ* is of Greek origin, and signifies "moss-pluckers," while the term *Zosterops* signifies "girdle-faced," and has been given to this bird in consequence of a well-defined circlet of light-colored feathers which surrounds the eye.



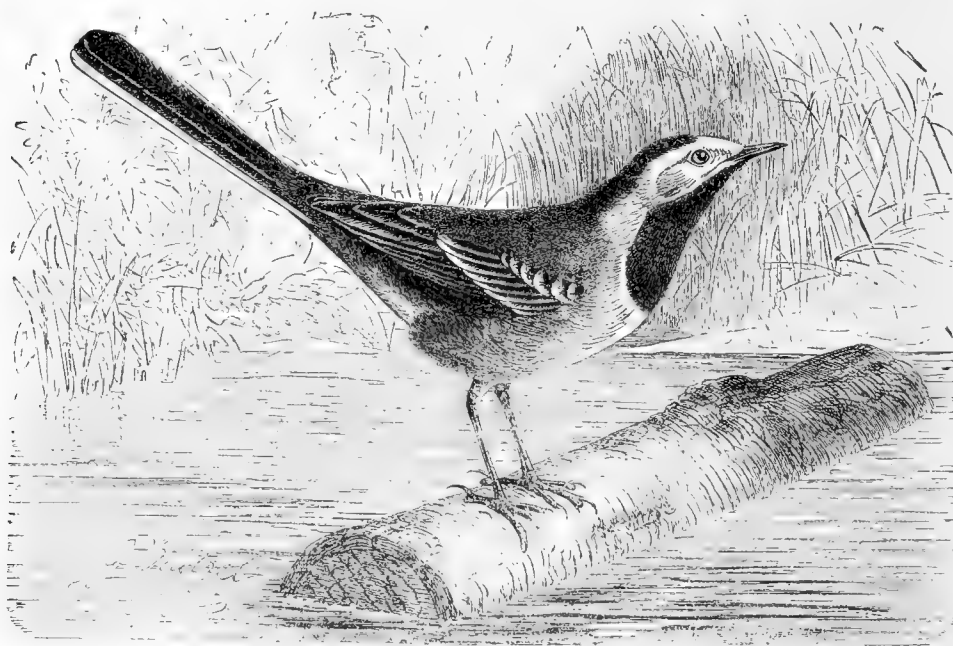
## WAGTAILS.

WE now arrive at a small group of birds, which is sufficiently familiar to every observer of nature through the different representatives which inhabit this country. The WAGTAILS, so called from their well-known habit of jerking their tails while running on the ground or on settling immediately after a flight, are found in both hemispheres, and are all well known by the habit from which they derive their popular title. No less than nine species of this group occur in Europe, some of which are nearly as well known as the common sparrow, while others are less familiar to the casual observer.

THE PIED WAGTAIL is the most common of all the European examples of this genus, and may be seen at the proper season of the year near almost every pond or brook, or even in the open road, tripping daintily over the ground, pecking away at the insects, and wagging its tail with hearty good-will.

Mr. Yarrell mentions that this bird is an accomplished fisher, and excels in snapping up the smaller minnows and fry as they come to the surface of the water. It also haunts the fields where sheep, horses, or horned cattle are kept, and hovers confidently close to their hoofs, pecking away briskly at the little insects which are disturbed by their tread. It also delights in newly-mown lawns, and runs over the smooth surface with great agility, peering between every grass-blade in search of the insects which may be lying concealed in their green shelter. The flight of the Pied Wagtail is short and jerking, the bird rising and falling in a very peculiar manner with every shake of the wings.

Several Wagtails which used to frequent our garden were fond of meat, and, together with the blue titmice, would often assault, or rather pretend to assault, the tame sparrow-hawk, and cruelly steal his dinner before his eyes. Indeed, the Wagtails seemed to be quite the rulers over that unfortunate hawk, and led him a sad life.



WHITE WAGTAIL.—*Motacilla alba*.

As the WHITE WAGTAIL has often been confounded with the preceding species, I have thought that a figure of each species would be advisable in the present work. According to Mr. Gould, who first determined the characteristics between the two species, they may be distinguished from each other by the following marks of difference :—



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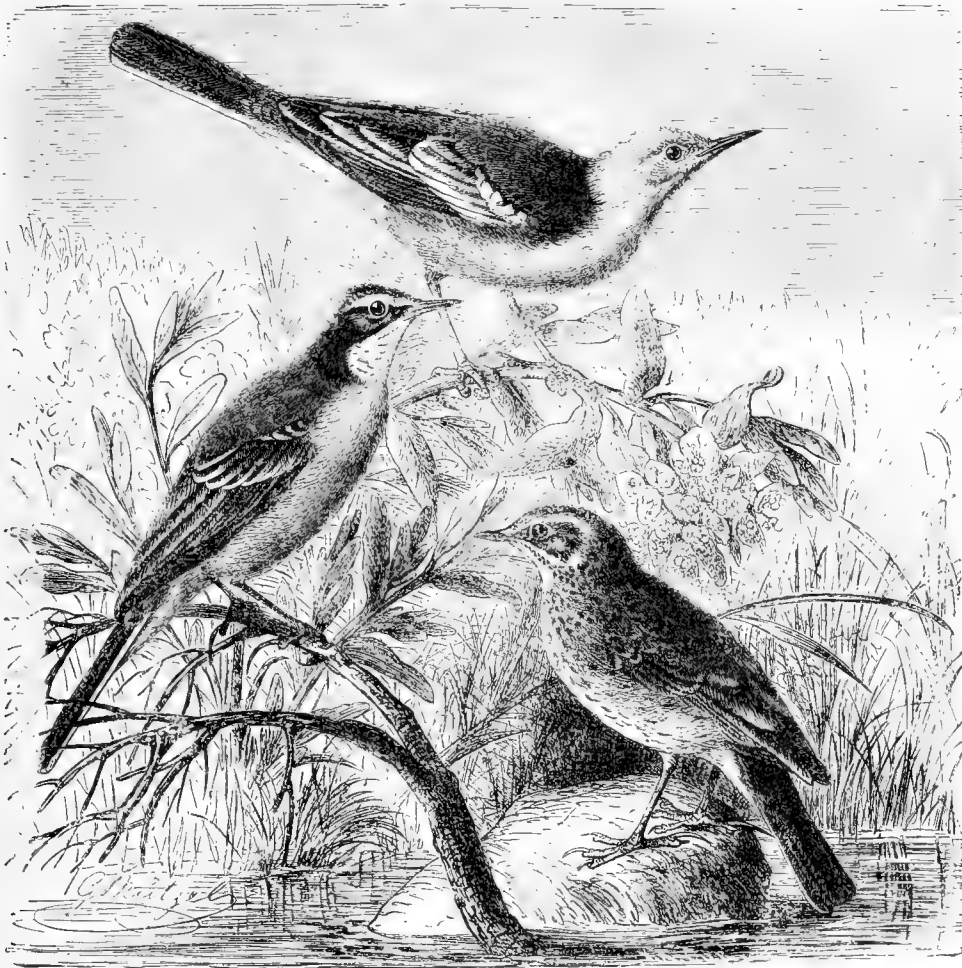
DIPPER, WAGTAILS, AND WRENS.



“The pied Wagtail of Europe (*Motacilla yarrellii*) is somewhat more robust in form, and in its full summer dress has the whole of the head, chest, and neck of a full, deep jet-black; while in the White Wagtail (*Motacilla alba*), at the same period, the throat and head alone are of this color; the back and the rest of the upper surface being of a light ash-gray. In winter the two species more nearly assimilate in their coloring, and this circumstance has doubtless been the cause of their being hitherto considered as identical; the black back of *Motacilla yarrellii* being gray at this season, although never so light as *Motacilla alba*. An additional evidence of their being distinct (and which has doubtless contributed to the confusion) is, that the female of our pied Wagtail never has the beak black as in the male; this part, even in summer, being dark gray, in which respect it closely resembles the other species.” Another distinction may be found in the shape of the beak, which is broader in the White than in the pied species.

The White Wagtail is very common in France and the southern parts of Europe; but, although it may be found plentifully on the shores of Calais, the narrow arm of the sea appears to be a boundary which it seldom passes.

It is an occasional straggler in North America, and is therefore embraced in the catalogue of such birds.



GRAY WAGTAIL.—*Motacilla campestris*; and MEADOW PIPIT.—*Anthus pratensis*.

THE GRAY WAGTAIL is a remarkably pretty and elegant example of this group of birds; its plumage being delicately marked with various soft colorings, its shape slender and graceful, and its movements light and airy.

This species is not quite so common as the pied Wagtail, and seems to migrate backwards and forwards in Europe according to the temperature. Of the far northern regions it is a

summer visitant, but is more permanently stationed in the other parts of the north, and mostly breeds in warm, well-watered localities. The bird is a special lover of water, and seldom seems to fly to any great distance from the brook or river in which it finds its food.

Like the pied Wagtail, it feeds largely on aquatic insects and larvæ, and is also known to eat small water mollusks, not troubling itself to separate the soft body from the hard and sharp-edged shell.

THE YELLOW WAGTAIL, or RAY'S WAGTAIL, as it is sometimes termed, is very common in England, and is very partial to pasture lands, where it revels among the insects that are roused by the tread of cattle.

It is not so partial to water as the pied species, and may often be met with upon the driest lands, far from any stream, busily employed in catching the beetles, flies, and other sun-loving insects. Even upon roads it may frequently be observed tripping about with great celerity, and ever and anon picking up an insect, and celebrating its success by a triumphant wag of the tail. The name of Yellow Wagtail has been given to it on account of the light yellow hue which tinges the head and the entire under surface of the body. As, however, the preceding species also possesses a considerable amount of yellow in its coloring, the name of Ray's Wagtail has been given to this bird in honor of the illustrious naturalist. It is a gregarious bird, being generally seen in little flocks or troops.

The coloring is as follows: The top of the head, back of the neck, and the whole of the back are olive, brighter upon the head and darker upon the back. The quill-feathers of the wings are dark brown, tipped with yellowish-white, with the exception of the two exterior feathers of the tail, which are white, with a line of black running down the inner web; all the tail is brownish-black, like the wings. The chin, throat, the whole of the under surface of the body, together with a well-defined stripe over the eye and ear, are bright yellow. In length the bird does not reach quite seven inches.

AUSTRALIA is the *habitat* of the prettily-marked bird which is known to zoologists by the very long name of WHITE-FACED EPITHIANURA.

It is tolerably common in several parts of that strange country, and is found in little flocks, as is the case with the Wagtails. Of this bird and its habits, Mr. Gould speaks as follows: "As the structure of its toes and lengthened tertiaries would lead us to expect, its natural province is the ground, to which it habitually resorts, and decidedly evinces a preference to spots of a sterile and barren character. The male, like many of the saxicoline birds, frequently perches either on the summit of a stone, or on the extremity of a dead and leafless branch. It is rather shy in disposition, and when disturbed flies off with considerable rapidity to a distance of two or three hundred yards before it alights again. I observed it in small companies on the plains near Adelaide, over the hard clayey surface of which it tripped with amazing quickness, with a motion that can neither be described as a hop or a run, but something between the two, with a bobbing action of the tail."

Only the male bird is gifted with the bright contrast of the white throat and banded chest, the female being quite a sombre-plumaged bird. It is always a sprightly and active bird, and is quick of wing as well as of foot.

## THE PIPITS, OR TITLARKS.

THE PIPITS, or TITLARKS, as they are sometimes called, form a well-marked group, which possesses the long hind toe of the hawk, together with very similar plumage, and also bears the long tail which is found in the wagtails. Several species of the Pipit inhabit Europe, two examples of which will be figured.

The first is the common MEADOW PIPIT, or MEADOW TITLING, a bird which may be seen throughout the year upon moors, waste lands, and marshy ground, changing its locality according to the season of year. It is a pretty though rather sombre little bird, and is quick

and active in its movements, often jerking its long tail in a fashion that reminds the observer of the Wagtail's habits. It moves with considerable celerity, tripping over the rough and rocky ground which it frequents, and picking up insects with the stroke of its unerring beak. Its food, however, is of a mixed description, as in the crops of several individuals were found seeds, insect and water-shells, some of the latter being entire.

The song of this bird is hardly deserving of the name, being rather a feeble and plaintive "cheeping" than a true song. While uttering its notes, the Meadow Pipit is generally on the wing, but does not begin to sing until it has attained its full elevation, reserving its voice for the gradual descent. The song is begun quite early in the season, but as the bird is so partial to waste lands, it is not heard so commonly as that of rarer birds. It is gregarious in its habits, assembling in little flocks, which generally come to the cultivated grounds about September or October, and roost amicably together on the ground at night.

The nest of this species is placed on the ground, and generally hidden in a large grass-tuft. It appears, from some observations made by Mr. Thompson, that the bird is in the habit of carrying dead grasses and laying them over her nest whenever she leaves her eggs or young. The object of this precaution is not, however, very evident, as the grass is usually of a different hue from the surrounding foliage, and apparently serves rather as a guide to the nest than a concealment. The eggs are from four to six in number, of a dark brown color, speckled freely with reddish-brown. The cuckoo is said to favor the Meadow Pipit with her society rather more frequently than is agreeable to the bird, and to give it the labor of rearing her voracious young.

The general color of this Pipit is dark olive-brown, with a wash of green upon the upper parts; the wings are very dark brown, sprinkled with white, and the tail is also brown, with the exception of a white streak on each exterior feather, and a few white spots towards the extremity. The under surface is brownish-white, and upon the breast of the male there is a pale rosy tinge. Upon the breast there are a number of dark brown spots. The colors of the plumage undergo a decided change in the autumn, and are more showy than those of the summer; the olive-green on the back becoming more conspicuous and the under surface tinged with yellow.

This bird goes by different names. In many places it is termed the Moss-cheeper, in allusion to its peculiar plaintive note. In other parts it is known by the title of Ling-bird, on account of its habit of haunting the waste moorlands. In Ireland the bird is called the Wekeen, a name which evidently alludes to its note. It has been found all over Europe, and in many countries extending as far northward as Sweden and Norway in the summer months, and having even been seen in Iceland. Specimens have been taken in Egypt and



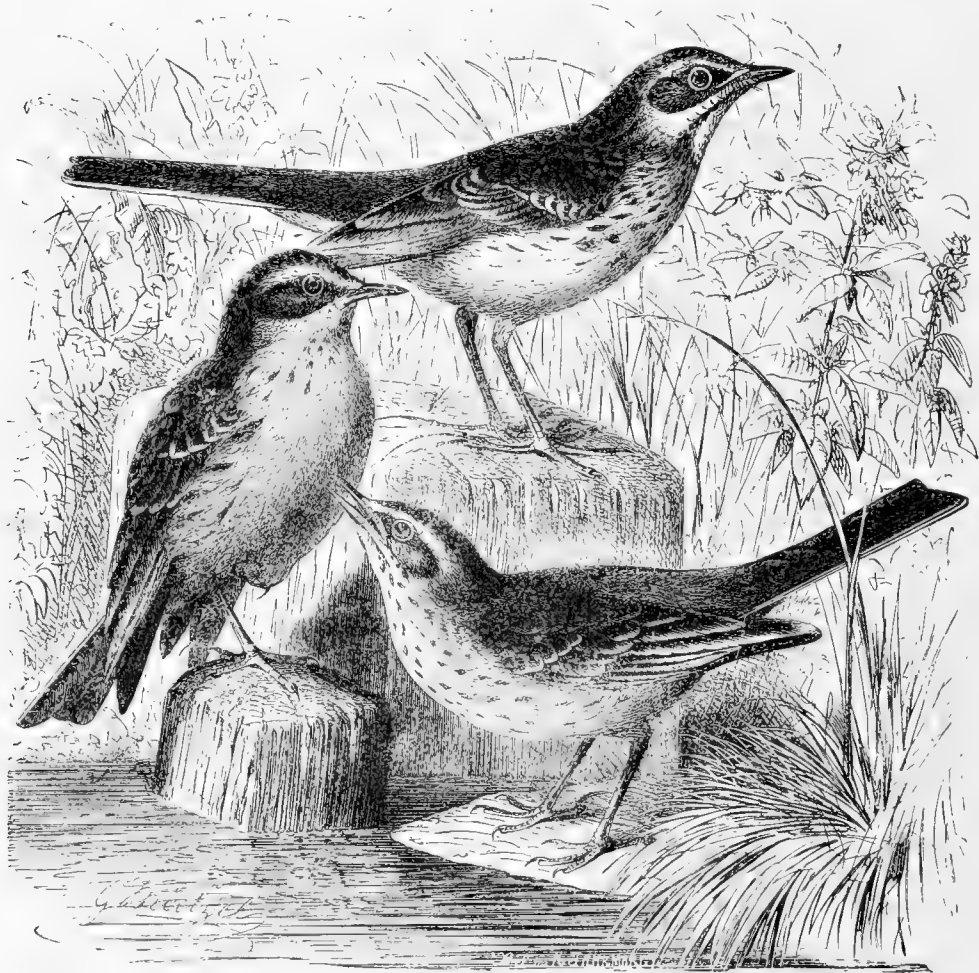
TREE PIPIT.—*Anthus arboreus*.

several parts of Africa, and also in the west of India. It has also been included in the list of Japanese birds, so that it possesses a range of locality which is seldom enjoyed by any single species. Although the bird is so small and delicate, being only six inches in length, it

is a strong and daring flyer, a specimen having been taken on board a ship at a distance of nine hundred miles from the nearest shore.

THE TREE PIPIT derives its name from its habit of perching upon trees, wherein it presents a decided contrast to the meadow Pipit, which chiefly frequents waste lands and marshes.

It is only a summer visitant of the northern countries, arriving towards the end of April, and leaving in September, after rearing its brood. Although it can perch on branches, and does so very frequently, it has not a very strong hold of the bough, and is not nearly so agile in hopping or tripping about the branches as is the case with the generality of perching birds. While on the tree it generally settles on the end of some bough, and is not seen to traverse the branches after the fashion of the tree-frequenting birds. Although it is called the Tree Pipit, it seems more at its ease on the ground than among the branches, and runs and trips over the roughest soils with an easy grace that contrasts strongly with its evident insecurity upon the boughs.



RICHARD'S and ROCK PIPIT.—*Anthus richardi* and *aquaticus*.

The song of this bird is sweeter and more powerful than that of the preceding species, and is generally given in a very curious manner. Taking advantage of some convenient tree, it hops from branch to branch, chirping merrily with each hop, and after reaching the summit of the tree, perches for a few moments and then launches itself into the air, for the purpose of continuing its ascent. Having accomplished this feat, the bird bursts into a triumphant strain of music, and, fluttering downwards as it sings, alights upon the same tree from which it had started, and by successive leaps again reaches the ground.



The nest of the Tree Pipit is almost invariably placed on the ground under the shelter of a tuft of grass, although there are instances where the bird has been known to build in a very low bush. The materials of which the nest is made are moss, roots, and fine grasses, and the lining is mostly of hair. The eggs are five in number, and their color is a whitish ground covered with reddish-brown spots. There is considerable variation in the color of the eggs, the spots being larger and more numerous in some examples, and their color generally possessing different shades of purple intermixed with brown.

The Tree Pipit may be known from the meadow Pipit by its greater size, its flatter head, larger bill, and shorter hind claws, the last being a very notable distinction. In its general coloring it resembles the meadow Pipit. Besides these two species, others are known to be among the European birds, as the Rock Pipit (*Anthus aquaticus*), and the Richard's Pipit (*Anthus richardi*).

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## THRUSHES.

THE very large family of the THRUSHES now engages our attention. Many of these birds are renowned for their song, and some of them are remarkable for their imitative powers. In general shape there is some resemblance to the crows and the starlings and blackbirds, bearing a very great external resemblance to the common starling. This family is divided into five sub-families, all of which will be mentioned in the following pages, and many examples figured.

THE ANT-THRUSHES, so called from their ant-eating propensities, form a small but remarkable group of birds, differing greatly in color and dimensions, but bearing considerable resemblance to each other in their general form. Some species are almost as sombrely clad in black, brown, and white, as the common Thrush, while the plumage of others glows with a crystalline lustre of animated prismatic hues, as in the black-headed Pitta (*P. melanocephala*), or is gorgeous with the brightest scarlet, blue, and purple, as in the crimson-headed Brachyure (*P. granatica*). All the species, however, bear, in external form, a considerable resemblance to each other, being thick-set, big-bodied, large-headed, long-legged, short-tailed, and strong-billed.

These birds may be separated into two divisions, the Breves and the Ant-Thrushes; the former being found in India, the Indian Islands, and Australia, while the latter inhabit America as well as the Old World.

In whatever part of the world they may be situated, they are most useful birds, as without their assistance the ants which swarm in those lands would increase to a most baneful extent. In allusion to this subject Mr. Swainson makes the following pertinent remarks: "Of all the tribes of insects which swarm in the tropics, the ants are the most numerous; they are the universal desolators, and in the dry and overgrown parts of the interior, the traveller can scarcely proceed five paces without treading upon their nests. To keep these myriads within due limits, a wise Providence has ordered into existence the Ant-thrushes, and given to them this particular food. Both are proportionate in their geographical range, as far beyond the tropical latitudes the ants suddenly decrease, and their enemies the Myiotheriæ (*i. e.*, the ant-eating creatures) totally disappear."

It must, however, be remembered, that the ants themselves are of the greatest service in removing and devouring all dead animal substances, and that the great object of the Ant-Thrush is not to extirpate, but to keep within due bounds the insects which might otherwise become absolutely harmful to the bird which is so greatly benefitted by their presence in moderate numbers.

THE great ANT-THRUSH, which is also called the GIANT PITTA, or the GIANT BREVE, in allusion to its large dimensions, is a native of Surinam, and on account of its bright plumage,

its quaint and peculiar shape, its very large head, very long legs, and peculiarly short wren-like tail, which looks exactly as if it had been neatly cropped, is one of the most singular birds of that prolific locality. In size it equals a rook, but hardly looks so large as that well-known bird, on account of the short tail, which is entirely covered by the wings when they are closed. The general color of this brilliant bird is a light cobalt blue, which extends over the whole of the back and tail, but is not quite so lustrous upon the wings. The quill-feathers of the wings are black, tipped with sky-blue, and the head, the surface of the neck, together with a stripe that runs partly round the neck, are also black, a darkish line is drawn through the eyes, the throat is grayish-white, and the abdomen and lower surface of the body are brownish-gray. In total length the bird measures about nine inches.

THE SHORT-TAILED PITTA, so called from the extreme shortness of that member, is a native of India, being most plentifully found in Bengal.



SHORT-TAILED ANT-THRUSH.—*Pitta bengalensis*.

It is a quick, lively bird upon the ground, rarely taking to flight except when absolutely forced so to do, but moving with incredible rapidity over the earth. In its general habits it differs nothing from the remainder of its kind. The plumage of this bird is remarkably pretty, and notable on account of the curious markings of the head and neck, and the beautifully vivid coloring of the wings.

The ground color of the bird is a soft mouse-brown, which is boldly marked with three jet-black bands, one passing from the forehead over the top of the head to the nape of the neck, and the other two passing from the gape through the eye, and joining the first band in a kind of half-collar between the neck and shoulders. The central stripe suddenly widens upon the crown of the head. Upon each shoulder and upon the basal portion of the tail are a number of glittering verditer-green feathers, that gleam out in the light, and render it a most conspicuous bird. The quill-feathers of the wings are dead black, except a white spot or bar upon their coverts, forming an irregular band when the wing is spread. The throat is a light brown, and the abdomen a pale mouse-color.

THE Ant-Thrushes find a European representative in the well-known DIPPER, OR WATER-OUSEL, of the river-banks.

Devoid of brilliant plumage or graceful shape, it is yet one of the most interesting of birds when watched in its favorite haunts. It always frequents rapid streams and channels, and being a very shy and retiring bird, invariably prefers those spots where the banks overhang the water, and are clothed with thick brushwood. Should the bed of the stream be broken up with rocks or large stones, and the fall be sufficiently sharp to wear away an occasional pool, the Dipper is all the better pleased with its home, and in such a locality may generally be found by a patient observer.

THE AMERICAN WATER-OUSEL (*Cinclus americanus*) inhabits the Rocky Mountain range from British America to Mexico. Dr. Coues, of the U. S. Army, has given us an interesting account of this bird:—

“It may seem singular to speak of a thrush-like bird living in the water, but such is exactly true in this case. Although not web-footed, nor able to swim with its feet, nor having the slightest affinity with water-birds, nevertheless, there is no duck nor diver more truly aquatic than the Dipper; a great part of its time, in fact, being spent under water, where it repairs in search of food. The question naturally arises how, if it cannot swim, it stays there, or gets there at all. It *flies* down into the water, and *flies* about under the surface, using its wings just as in ordinary flight. In the transparent brawling brooks it loves to frequent, we may see it at times scrambling along the bottom, headed always up-stream, holding the body inclined forward and downward, beating its wings, and so tripping along just over the bottom of the brook. It seems to have some difficulty in keeping down, for the moment its exertions are relaxed it comes to the surface; sometimes being swept along for a considerable distance by the force of the current. It may gather food in a more usual manner, but in any event most of its subsistence is derived in this way from the water.

“The birds of this group, *Cinclidae*, are the only ones that have truly aquatic habits. They are all odd-looking birds—short and puffy, with a tail that looks as if it had been cut short. It has curved, rounded wings, and stout feet. The plumage is exceedingly soft and thick, to resist the water—something like that of a duck’s breast, only much finer. The bird lives close by the water, in the rear of the cascade and the purling of the stream, haunting the stony banks that are slippery with moisture; and where the moss grows the greenest, in the spray of the waterfall, it builds its nest—an imposing mansion, indeed, for such a plain little bird. The nest is a great globe of living moss, some thirty inches in circumference, on a slab of stone, or in the crevice of a stranded stump, but always close by the water’s edge. The entrance is a neat doorway, made by a special arrangement of the moss in the shape of a hole in one side, no larger than is sufficient to admit easy passage. Inside, this ball is lined with fine grasses, keeping it snug, dry, and warm; and in one season it contained four or five white eggs.”

The Doctor adds some pleasant remarks about the aspect of this curious nest. The bird, frequenting the water as it does constantly, naturally shakes herself as she alights upon the mossy nest; this results in a sprinkling from the wet plumage, and consequently a freshening of the green moss patches.

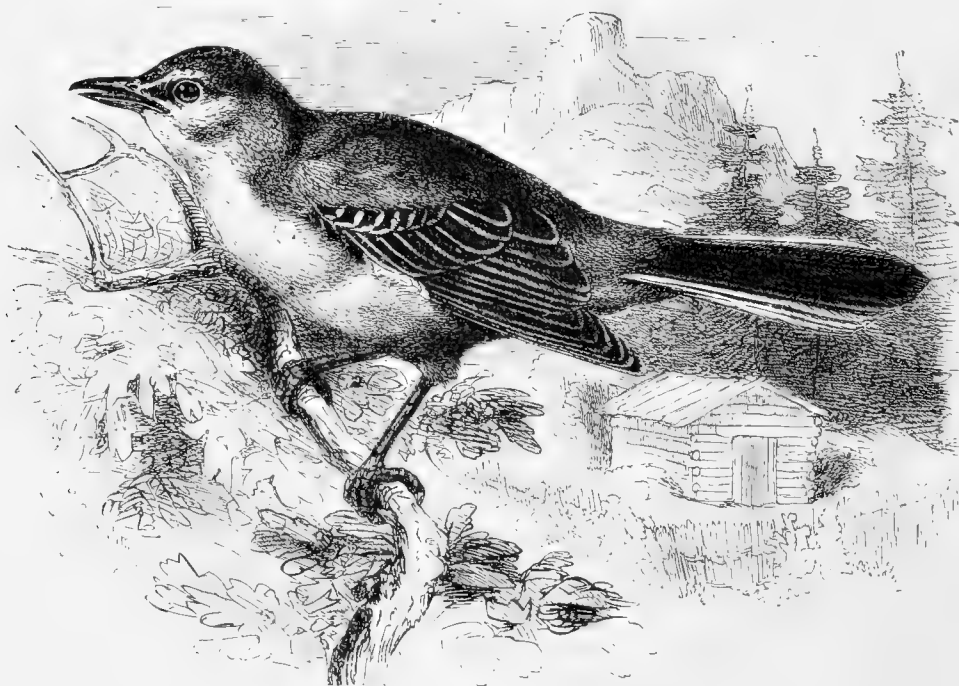
This species resembles the European, but has no white patch on the chest.

THE MOCKING-BIRD of America (*Mimus polyglottus*) is universally allowed to be the most wonderful of all songsters, as it not only possesses a very fine and melodious voice, but is also endowed with the capacity for imitating the notes of any other bird, and, indeed, of immediately reproducing with the most astonishing exactness any sound which it may hear.

It is a native of America, and, according to Mr. Webber, there are two varieties, if not two species; the one an inhabitant of Kentucky, and the other being found in the more southern districts. All persons who come within the sound of a Mocking-bird’s voice are fascinated with the thrilling strains that are poured without effort from the melodious throat, and every professed ornithologist who has heard this wonderful bird has exhausted the powers of his language in endeavoring to describe the varied and entrancing melody of the Mocking-bird. Within the compass of one single throat the whole feathered race seems to be comprised, for

the Mocking-bird can with equal ease imitate, or rather reproduce, the sweet and gentle twittering of the blue-bird, the rich, full song of the thrush, or the harsh, ear-piercing scream of the eagle. At night especially, when labor has ceased, "silence has attuned her ear," says Webber, "and earth hears her merry voices singing in her sleep.

"Yes, they are all here! Hear then each warble, chirp and thrill! How they crowd upon each other! You can hear the flutter of soft wings as they come hurrying forth! Hark, that rich clear whistle! 'Bob White, is it you?' Then the sudden scream! is it a hawk? Hey! what a gush, what a rolling limpid gush! Ah, my dainty redbreast, at thy matins early! Mew! what, Pussy! No, the cat-bird; hear its low liquid love-notes linger round the roses by the garden-walk! Hillo! listen to the little wren! he must nearly explode in the climax of that little agony of trills which it is rising on its very tip-toes to reach! What



MOCKING-BIRD.—*Mimus polyglottus*.

now? Quack, quack! Phut, phut, phut! cock-doodle-doo! What, all the barn-yard? Squeak, squeak, squeak! pigs and all. Hark, that melancholy plaint, Whip-poor-Will, how sadly it comes from out the shadowy distance! What a contrast! the red-bird's lively whistle, shrilly mounting high, higher, highest! Hark, the orchard oriole's gay, delicious, roaring, run-mad, ranting-riot of sweet sounds! Hear that! it is the rain-crow, croaking for a storm! Hey day! Jay, jay, jay! it is the imperial dandy blue-jay. Hear, he has a strange, round, mellow whistle too! There goes the little yellow-throated warbler the woodpecker's sudden call, the king-bird's woeful clatter, the dove's low plaintive coo, the owl's screeching cry and snapping beak, the tomtit's tiny note, the kingfisher's rattle, the crow, the scream, the cry of love, or hate, or joy, all come rapidly, and in unexpected contrasts, yet with such clear precision, that each bird is fully expressed to my mind in its own individuality."

Yet all these varied notes are uttered by the one single Mocking-bird, as it sits on a lofty spray or flings itself into the air, rising and falling with the cadence of its song, and acting as if absolutely intoxicated with sweet sounds.

Let it but approach the habitation of man, and it straightway adds a new series of sounds to its already vast store, laying up in its most rententive memory the various noises that are produced by man and his surroundings, and introducing among its other imitations the barking of dogs, the harsh "setting" of saws, the whirring buzz of the millstone, the everlasting

clack of the hoppers, the dull, heavy blow of the mallet, and the cracking of splitting timbers, the fragments of songs whistled by the laborers, the creaking of ungreased wheels, the neighing of horses, the plaintive baa of the sheep, and the deep lowing of the oxen, together with all the innumerable and accidental sounds which are necessarily produced through human means. Unfortunately, the bird is rather apt to spoil his own wonderful song by a sudden introduction of one of these inharmonious sounds, so that the listener, whose ear is being delighted with a succession of the softest and richest-toned vocalists, will suddenly be electrified with the loud shriek of the angry hawk or the grating whirr of the grindstone.

It is impossible to do justice to this most wonderful bird without quoting largely from those writers who speak from personal experience, and I therefore take following passage from Wilson:—

“In measure and accent he faithfully follows his originals; in force and sweetness of expression he greatly improves upon them. In his native groves, mounted on the top of a tall bush or half-grown tree, in the dawn of dewy morning, while the woods are already vocal with a multitude of warblers, his admirable song rises pre-eminent. Over every other competitor the ear can listen to his music alone, to which that of all birds seems a mere accompaniment.

“Neither is this strain altogether imitative. His own native notes, which are easily distinguishable by such as are well acquainted with those of our various song-birds, are full and bold, and varied seemingly beyond all limit. They consist of short expressions of two or three, or at the most four or six syllables, generally interspersed with intonations, and all of them uttered with great emphasis and rapidity, and continued with unlimited ardor for half an hour or an hour at a time. His expanded wings and tail glistening with white, and the buoyant gaiety of his action arresting the eye, as his cry most irresistibly does the ear, he sweeps round with enthusiastic ecstasy, as he mounts or descends as his song swells or dies away; and as my friend Mr. Bartram has beautifully expressed it: ‘He bounds aloft with the celerity of an arrow, as if to recover or recall his very soul, expired in the last elevated strain.’

“While thus exerting himself, a bystander destitute of sight would suppose that the whole feathered tribe had assembled together on a trial of skill, each striving to produce his utmost effect, so perfect are his imitations. He many times deceives the sportsman, and sends him in search of birds that are perhaps not within miles of him, but whose notes he exactly imitates. Even birds themselves are imposed upon by this admirable mimic, and are decoyed by the fancied calls of their mates, or dive with precipitation into the depths of thickets at the scream of what they suppose to be the sparrow hawk.”

It is a very remarkable circumstance that one single bird always assumes the mastery in each district, and that whenever he begins to sing, the others cease from their performances, and retire to a distance from the spot where the master bird has taken his stand, so that their voices are only heard as if in distant echoes to his nobler strains. The bird can easily be tamed, and when it turns out to be a good songster, is a most valuable bird, seventy-five dollars having been offered and refused for a good specimen. I knew of one case where a young Mocking-bird lived in a family for nearly two years, displaying its imitative talents in a very wonderful manner. It thrived well, and died from the effect of an accident, its legs having been crushed in a doorway.

The male bird can be distinguished from the female by the breadth and pure tint of the white band on the wings. In the adult bird, the white color ought to spread over all the primary feathers, extending away below the white coverts; the dark color of the back is also of a more blackish hue.

The nest of this bird is usually placed in some thick bush, and is in general very carefully concealed. Sometimes, however, when the bird builds in localities where it knows that it will be protected from human interference, it is quite indifferent about the concealment of its home, and trusts to its own prowess for the defence of its mate and young. When engaged in the business of incubation, the Mocking-bird suffers no foe to approach within the charmed circle of its home duties, and jealously attacks hawk, cat, or snake, in defence of its family.

The fiercest war is, however, waged against the black-snake, a reptile which makes many a meal on the eggs and young of various birds, and is in no wise disposed to spare those of the Mocking-bird. Against this terrible foe both parents aim their fiercest blows, and it often happens that the snake which has writhed its way to the Mocking-bird's nest in hope of devouring the callow young, pays with its life for its temerity, and falls dead to the ground, while the victor bird pours forth a song of triumphant congratulation. The nest is always placed at a short distance from the ground, being seldom seen at an elevation of more than eight feet.

The materials of which the nest is composed are generally dried weeds and very slender twigs as a foundation; straw, hay, wool, dried leaves, and moss, as the main wall; and fine vegetable fibres as the lining. The eggs are four or five in number, and there are often two broods in the course of the year. The color of the eggs is greenish-blue, spotted with amber-brown.

The Mocking-bird is deservedly considered the equal of the nightingale. It is an inhabitant of both North and South America, and is rarely seen in the New England States, though Mr. Allen asserts it has been known to breed near Springfield, in Massachusetts, several times. In one instance the pair were secured, with the nest and eggs. On the Florida reef, in winter, we have often seen this bird in numbers, but they are then silent.

A species allied to this is called the MOUNTAIN MOCKING-BIRD (*Oreoscoptes montanus*). It is a Californian species.

The color of the Mocking-bird is a dull brown, with a decided ashen tinge. The quill-feathers of the wings are white towards their base, and brown-black towards their extremities, the two central feathers of the tail are dark brownish-black, the two externals are white, and the remainder are white on their inner webs. The chin, throat, and whole of the under part of the body are very pale brown, inclining to gray. As has already been mentioned, the pure white of the wings and the blacker hue of the body afford sufficient indications of the male bird, while the tail is nearly equally white in both sexes. The length of the adult Mocking-bird is about nine inches.

THE genus in which the true THRUSHES are placed is one of the largest yet established, containing nearly one hundred and twenty accredited species, which are found in almost all quarters of the globe.

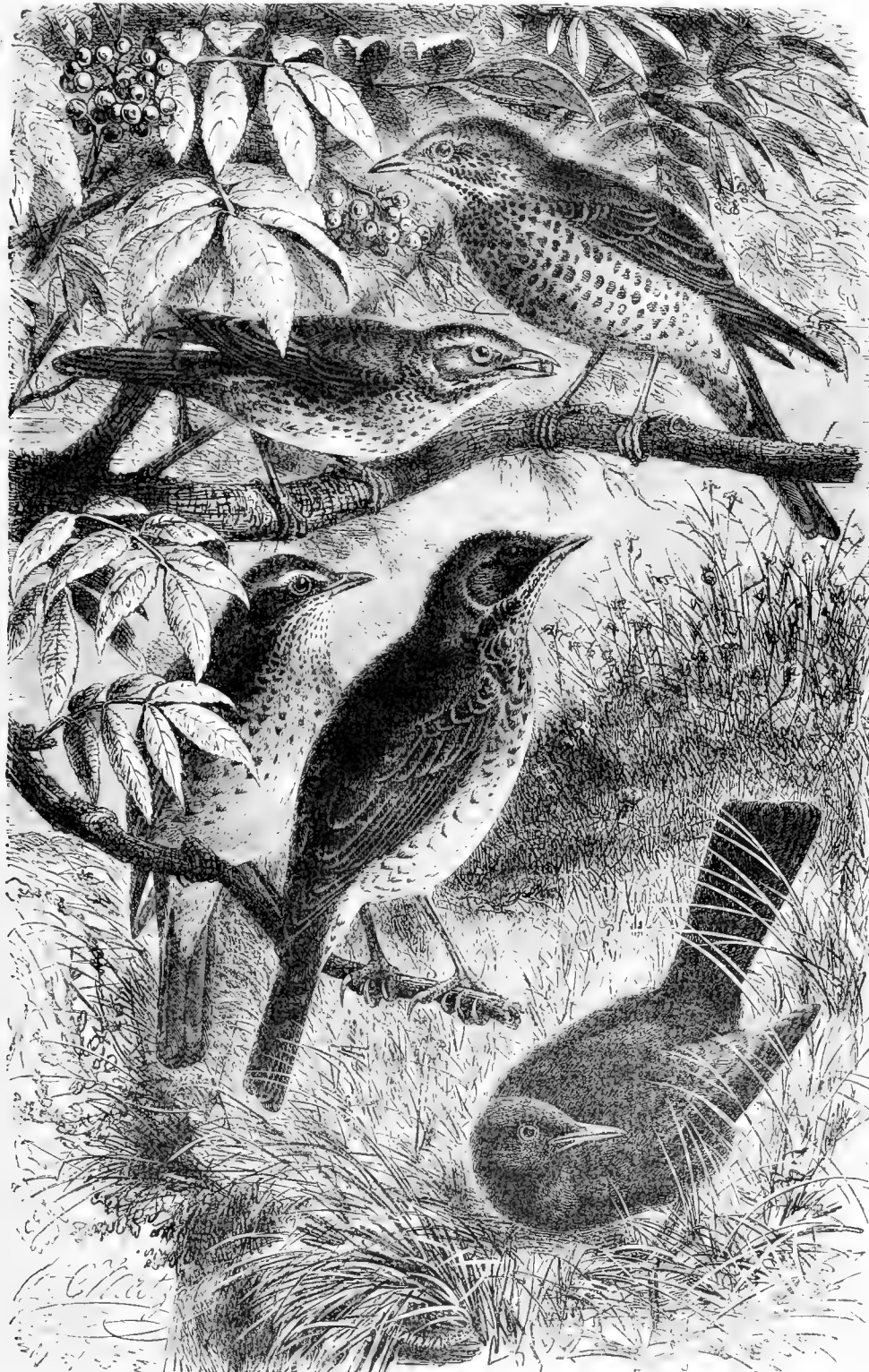
THE first example of this group is the MISSEL THRUSH, one of the largest and handsomest of the species.

On account of its great size, its combative nature, its brightly feathered breast, its rich voice, and gregarious habits, it is one of the best known birds. About the beginning of April the Missel Thrush sets about its nest, and in general builds a large, weighty edifice, that can be seen through the leafless bushes from a great distance. Sometimes, however, the nest is concealed with the greatest care, and I cannot but think that in the latter case it is the work of some old bird, who has learned caution through bitter experience.

The materials of which the nest is composed are the most heterogeneous that can be imagined. Every substance that can be woven into a nest is pressed into the service. Moss, hay, straw, dead leaves, and grasses, are among the ruling substances that are employed for the purpose, and the bird often adds manufactured products, such as scraps of rag, paper or shavings. I once found one of these nests that was ingeniously placed in the crown of an old hat that had evidently been flung into the tree by some traveller. At first, it hardly looked like a nest, but there were a few bits of grass lying over the brim that had a very suspicious aspect, and on climbing the tree, the old hat was proved to have been made the basis of a warm nest, with the proper complement of eggs. As the nest is so conspicuous, and built so early in the season, the eggs of the Missel Thrush generally form, together with those of the hedge accentor, the first-fruits of a nesting expedition.

The nest, although so roughly made on the exterior, is the result of very careful workmanship. The outside walls are made of moss and hay, but there is a fine lining of mud,

which, when dry, affords a very perfect resting-place for the eggs. The mud wall is again lined with soft grasses, so that the eggs and young have a warm bed whereon to repose.



THRUSHES.—*Turdina*.

ANOTHER large example of the Thrushes is found in the FIELDFARE.

This bird is one of the migratory species, making only a winter visit to northern countries, and often meeting a very inhospitable reception from the gun of the winter sportsboy. Very

seldom is it seen there till November, and is often absent till the cold month of December, when it makes its appearance in great flocks, searching eagerly for food over the fields. At this period of the year they are very wild, and can with difficulty be approached within gun-shot, as I have often experienced in my younger days. I well remember "stalking" a little troop of these birds for several hours, being induced to do so by their extreme shyness, and at last securing one of them by pushing the gun through a drain-hole in an old stone wall, getting a rather uncertain aim through the dried grass stems, and sending the shot within an inch or two of the ground. When the snow lies heavily upon the fields, this bird betakes itself to the hedge-rows and outskirts of woods and copses, and there feeds on the various berries that have survived the autumn. During this inclement season, the Fieldfare may be approached and shot without much difficulty. Their shyness, however, depends greatly on the amount of persecution which they have sustained.

Although they collect in large flocks, the different individuals always keep themselves rather aloof from their fellows, but as night approaches they close together, and nestle in companies among the hedges or brushwood. They generally remain north until May or June, seldom, however, prolonging their stay to the latter period. They have not been observed to build, excepting in the northern parts of Europe, such as Norway and Sweden, where their nesting is really extraordinary. A very excellent account of the nidification of these birds is given by Mr. Hewitson. His attention was aroused by the loud shrieking cries of several birds, "which we at first supposed must be shrikes, but which afterwards proved to be Fieldfares, anxiously watching over their newly-established dwellings.

"We were soon delighted by the discovery of several of their nests, and were surprised to find them (so contrary to the habits of other species of *Turdus* with which we are acquainted) herding in society. Their nests were at various heights from the ground, from four feet to thirty or forty feet or upwards, mixed with old ones of the preceding year. They were, for the most part, placed against the trunk of the spruce fir; some were, however, at a considerable distance from it, upon the upper surface, and towards the smaller end of the thicker branches. They resembled most nearly those of the ring ouzel. The outside is composed of sticks and coarse grasses, and weeds gathered wet, matted together with a small quantity of clay, and lined with a thick bed of fine long grass. None of them yet contained more than three eggs, although we afterwards found that five was more commonly the number than four, and even six was very frequent. They are very similar to those of the blackbird, and even more so to those of the ring ouzel.

"The Fieldfare is the most abundant bird in Norway, and is generally diffused over that part which we visited; building, as already noticed, in societies; two hundred nests or more being frequently seen within a very small space."

In their general aspect, the nests are not unlike those of the blackbird, and the eggs are of a light blue ground color, covered with dark, reddish-brown mottlings. Although the bird is essentially a winter visitant to northern countries, there are seasons when it is too cold and stormy even for this hardy bird. In the year 1798, there was a terrible and lengthened storm of sleet, wind, and snow, which killed thousands of the Fieldfares, and even dashed them into the sea, where they were drowned, and their bodies thrown upon the coast for many days afterwards.

In its color the Fieldfare bears a decided resemblance to the generality of the Thrushes. The upper parts of the body as far as the shoulders are ashen-gray, dotted with dark brown spots upon the head; the back and wings are rich brown, and the tail is dark blackish-brown. The chin and throat are a peculiar golden hue, not unlike amber, and covered with numerous black streaks; the breast is reddish-brown, also spotted with black, and the abdomen and under parts white, spotted on the flanks and under tail-coverts with brown of various shades. The Fieldfare is not quite so large a bird as the Missel Thrush, being about ten inches in total length.

THE RING OUZEL is also only a visitant of northern countries, but its times of arrival and departure are precisely contrary to those of the bird just described.



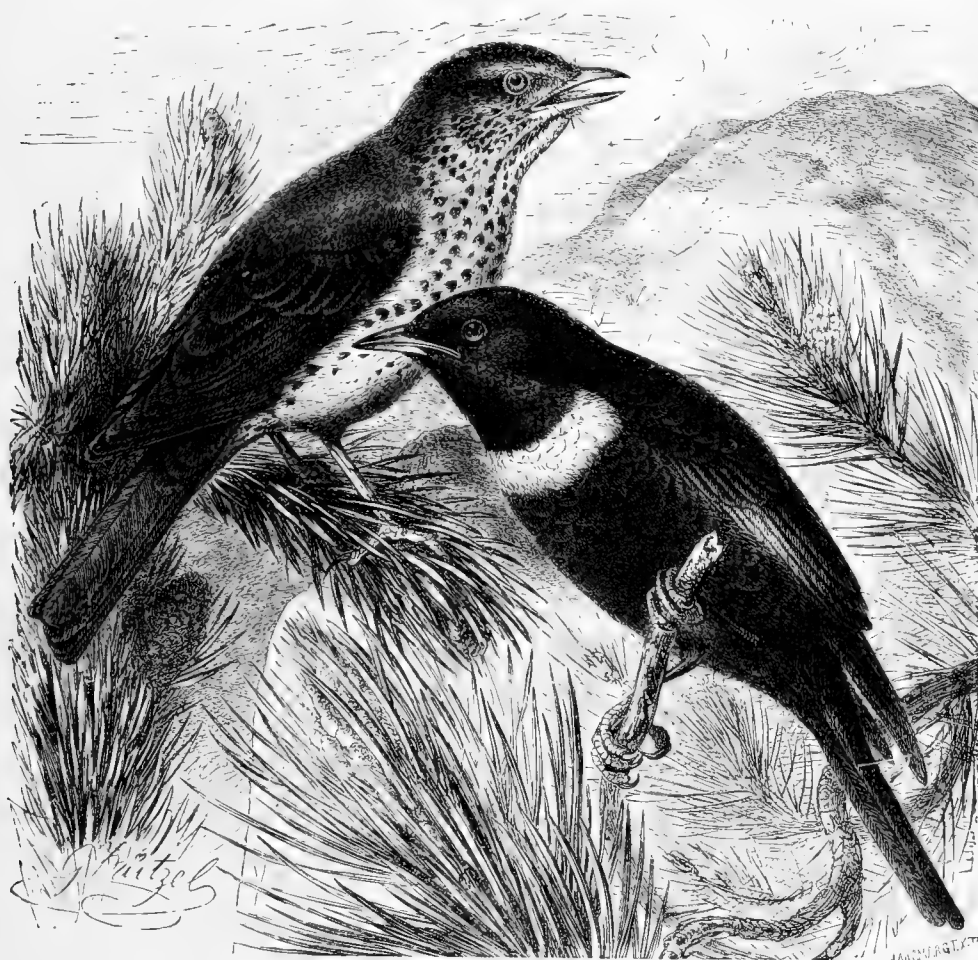


CONJUGAL TENDERNESS.



This species seldom arrives in such countries until the month of April, and as it generally confines itself to certain districts, is not very common. The name of Ring Ouzel has been universally given to this bird on account of the broad white band that partially surrounds the lower portions of the throat, and is very conspicuous in its contrast with the deep black-brown of the rest of the plumage. With the exception of this white band, the general plumage of the Ring Ouzel is very like that of the male blackbird, which it also resembles in size and general form.

It is a shy and wary bird, shunning cultivated grounds and the vicinity of human habitations, and withdrawing itself into the wildest and most hilly districts. It is a quick-flying,



RING OUZEL and SONG-THRUSH.—*Turdus torquatus* and *musicus*.

lively and active bird, and is said to afford fine sport to the falconer, owing to its singular adroitness and ingenuity in escaping the stroke of the hawk. It will quietly suffer the bird of prey to approach quite closely, screaming a defiance to the enemy, and flitting quietly along a stone wall or rocky ground. Suddenly the hawk makes its swoop, and the Ring Ouzel disappears, having whisked into some hole in the stone, squeezed itself into a convenient crevice, or slipped over the other side of the wall just as the hawk shot past the spot on which it had been sitting.

The song of this bird is loud, clear, and sonorous, but contains a very few notes. The Ring Ouzel can also, when alarmed, utter a loud and hoarse screech, which seems to give warning of danger to every bird within hearing.

The nest of this species is large, and is composed of coarse grasses externally, lined with a thin shell of clay, which is again lined with soft and warm grass. The eggs are of a brightish blue covered with many spots and little dashes of dark reddish-brown; their full complement

is five. The nest is always placed near the ground in some sheltered situation, a tuft of rank grass, a thick bunch of heather, or the base of a luxuriant bush, being among the most common localities. After the breeding season, the Ring Ouzels assemble towards the south, collecting together in flocks preparatory to their departure. During this intermediate period they visit the gardens and orchards, and often commit sad havoc among the fruit.

The general color of the adult male bird is very dark blackish-brown, slightly varied by the blackish-gray edges of the feathers, and the broad gray outer webs of the wing-feathers. Across the upper part of the chest runs a broad, crescent-shaped mark of the purest white, the points being directed upwards. In the young male this collar is not so broad, and of a decidedly reddish hue, and the whole of the plumage is of a lighter brown. Sometimes the white collar is entirely absent, and in some cases white and pied varieties have been known. The total length of the adult bird is about eleven inches.

ANOTHER well-known example of the Thrushes is found in the common REDWING of England.

It is one of the finest songsters even among its own melodious group, rivalling the nightingale in the full sweet tones of its flexible voice. Sometimes the bird sings alone, seated on a favorite perch, but it oftener prefers lifting up its voice in concert with its companions, and fills the air with its harmonious sounds. It has, however, several kinds of voice, sometimes pouring forth its full rich strains, and at other times singing quietly to itself in an under tone that can only be heard at a very short distance. This, however, is only the peculiar sound which is termed "recording" by bird-fanciers, and must not be mistaken for the real song, which, according to Mr. Hewitson, who had every opportunity of hearing this bird, is a loud, wild, and delicious melody. The Redwing partakes so far of the character of the nightingale as to sing after sunset.

The general color of the Redwing is a warm, rich cinnamon-brown upon the upper parts of the body, the wings are rather darker, except the external webs of the quill-feathers, which have a grayish tinge, and over the eyes runs a well-defined streak of very pale ashen-brown. The chin, throat, and whole under surface of the body are grayish-white, deepening into a brownish tinge on the sides of the neck, the breast, and the flanks, and profusely studded with longitudinal dashes of the same brown as that of the back. When the wings are closed, the bird very much resembles the common Thrush, but when it spreads its wings for flight, it discloses a large patch of orange-red feathers upon the sides of the body, from which it has derived its name of Redwing. In total length the Redwing nearly reaches nine inches. It is occasionally a straggler in North America, and is therefore in the list of our birds.

THE MOUNTAIN MOCKING-BIRD (*Oreoscoptes montanus*), or SAGE THRASHER, is an inhabitant of the Rocky Mountains; ranging southward towards Mexico, and northward to California.

THE CALIFORNIA THRUSH (*Harporhynchus redivivus*) is one of the later discoveries, since Audubon's time. Several other species, more or less like it, have also been found since the occupation of the great western plains.

The Curved-bill, Leconte's, and Palmer's Thrush, all have similar plumage, and are not far from the same size as the California Thrush.

THE BROWN THRASHER (*Harporhynchus rufus*) is an old favorite of the eastern portion of the country. Its song is pleasant, much like those native to the Mocking-Bird. It is variously called Fox-colored Thrasher, Ferruginous Thrush, and is named in the south, French Mocking-bird. The latter name was given it during the earliest days of the settlement of the country, when everything French was considered inferior, its notes being regarded as less musical than its superior.

This Thrush is easily raised in confinement, and proves an excellent pet. Its long body and tail make it readily recognizable.

A Mexican variety is recognized, and six species of this genus, besides those here mentioned, are found in the western and southern portions of the continent.

THE CAT-BIRD, so called from the resemblance which some of its notes bear to the mew and purr of a cat, is a native of America, and one of the most familiar of the birds of the country. As may be seen by the generic title which it bears, it is one of the true Thrushes.

In its character it is one of the most affectionate of birds, as is shown by Wilson in the following passage:—



CAT-BIRD.—*Galeoscoptes carolinensis*.

“In passing through the woods in summer, I have sometimes amused myself with imitating the violent chirping or squeaking of young birds, in order to observe what different species were around me; for such sounds at such a season in the woods are no less alarming to the feathered tenants of the bushes, than the cry of fire or murder in the streets is to the inhabitants of a large city.

“On such occasions of alarm and consternation, the Cat-Bird is the first to make his appearance, not singly, but sometimes half a dozen at a time, flying from different quarters to the spot. At this time those who are disposed to play with his feelings may almost throw him into fits, his emotion and agitation are so great at the distressful cries of what he supposes to be his suffering young.

“Other birds are variously affected, but none show symptoms of such extreme suffering. He hurries backwards and forwards, with hanging wings and open mouth, calling out louder and faster, and actually screaming with distress, till he appears hoarse with his exertions. He attempts no offensive means; but he bewails, he implores, in the most pathetic terms with which nature has supplied him, and with an agony of feeling which is truly affecting. Every feathered neighbor within hearing hastens to the spot to learn the cause of the alarm, peeping about with looks of consternation and sympathy. But their own powerful parental duties and domestic concerns soon oblige each to withdraw. At any other season the most perfect imitations have no effect whatever on him.

“It is a most courageous little creature, and in defence of its young is as bold as the mocking-bird. Snakes especially are the aversion of the Cat-Bird, which will generally contrive to drive away any snake that may approach the beloved spot. The voice of this bird is mellow and rich, and, according to Audubon, is “a compound of many of the gentle trills and

sweet undulations of our various woodland choristers, delivered with apparent caution and with all the attention and softness necessary to enable the performer to please the ear of its mate. Each cadence passes on without faltering, and if you are acquainted with the songs of the birds he so sweetly imitates, you are sure to recognize the manner of the different species."

The Cat-Bird (*Galeoscoptes carolinensis*) is one of the most common of native American birds, but is singularly shy, or retiring. It is known to all the countryside by its peculiar notes. Both sexes have the habit, besides the usual note, which is like that of the thrushes, of producing notes like those of a cat in mewing. It is one of the first spring visitors. Like the robin, it is fond of human society. It breeds in the Northern States. To a certain extent the Cat-Bird is a mocker. It is particularly abundant in Central Park. We have heard several uttering hoarse, cracked sounds, as if trying to imitate some extraordinary voices.

Wilson, whose kindly feelings are always on the side of our birds, thus defends the Cat-Bird :—

"With all his amiable qualities, few people in the country respect the Cat-Bird. On the contrary, it is generally an object of dislike, and the boys of the United States entertain the same prejudice and contempt for the bird, its nest and young, as those of Britain do for the Yellow Hammer. \* \* \* But with the generous and the good, the lovers of nature and of rural charms, the confidence which this familiar bird places in man, by building in his garden under his eye, the music of his song, and the interesting playfulness of his manners, will always be more than a recompense for all the little stolen morsels he has taken."

It is a most lively and withal petulant bird in a wild state, performing the most grotesque manœuvres, and being so filled with curiosity that it follows any strange being through the woods as if irresistibly attracted by some magnetic charm. In its disposition the Cat-Bird appears to be one of the most sensitively affectionate birds on the face of the earth, as will appear from the following interesting account of a pet Cat-Bird, called General Bem :—

"Well, General Bem went home with us at once, and was immediately given his liberty, which he made use of by peering into every closet, examining and dragging everything from its proper place, which he could manage, pecking and squalling, dashing hither and thither, until at night he quietly went into his cage as if he was nearly or quite positive that he must commence a new career on the morrow ; it was evident that he had to begin the world over again, yet, as he was not superannuated, and was, withal, ambitious, his case was still not a desperate one, although we had assured him most positively that we would not fall in love with him—we had only invited him there to help us pass the time.

"Bem looked wise at the assertion, but said nothing. The next morning we gave him water for a bath, which he immediately used, and then sprang upon my head, very much to my surprise ; then he darted to the window, then back to my head, screaming all the time most vociferously, until finally I went to the window, for peace' sake, and stood in the sunshine, while Bem composedly dressed his feathers, standing on my head first on one foot, then on the other, evidently using my scalp as a sort of foot-stone, and my head as a movable pedestal for his impudent generalship to perch on when he felt disposed to be comfortably elevated ; and had clearly come to the conclusion—as I was so fond of transporting him from his native land—that I should serve as a convenient craft to bear him where his moods commanded.

"In a word, he had determined to turn tyrant ; if I had had the deliberate purpose of using him as a mere toy, he had at least the coolness to make me available, and from that time I became the victim of the most unequalled tyranny. Did I neglect his morning bath beyond the instant, my ears were assailed with screams and cries, till I was forced to my duty ; I must bear him into the sunshine, or my hair was pulled ; I must bring him his breakfast, or he pecked my cheek and lips ; in fine, I was compelled to become his constant attendant, while in the meantime he most diligently assailed my heart by endearing confidences. He would sit

upon my arm and sleep, he would get into my workbox, and while I watched that he did not pilfer a little, he would quietly seat himself upon its edge, and in a low sweet voice lull my suspicions by such tender melodies, that finally I could no longer say, ‘I will not love you, Bem!’ but gave him the satisfactory assurance that he was not quite so much of a tease as I had tried to think him; and he now received my daily offering of small spiders and worms with gestures of evident pleasure.

“These were always presented to him enveloped in white paper, which he carefully opened, and secured his prey before it could escape, even though it was sometimes a difficult task to keep his vigilant eye upon so many—apparently escapading—when I was called to the field, and appointing me a station, I was expected to give the alarm when one attempted to get away on my side, which he immediately killed and dropped, and then darted after those on the outskirts of the field of action.

“At last, one day, Mr. Webber brought for my sister a Wood-thrush, which was very wild and savage, and was, besides, extremely ugly, but had the reputation of being a good singer, which made us forgive his sullen temper, and hope to win him back to more gentle ways, when he should see that we would be his friends, and that he should be almost free; besides, General Bem was much inclined to make his acquaintance, and took the first occasion to pay him a visit in his cage-house. This the stranger did not fancy and drove him out. Bem resented this, by turning on the threshold and pouring forth a torrent of screams and mewings, which came near distracting the poor Thrush, who darted at him and chased him to the bed, under which Bem darted, and was secure for the present.

“But from that time there were no more overtures of friendship, they were sworn enemies; the Thrush from detestation of the impudent fellow who invaded his residence, and finally appropriated it, to the entire desertion of his own, which, by-the-bye, was much larger, and with which the Thrush eventually consoled himself, and Bem continued to occupy, because it amused him to pester the ill-natured fellow, which he had set down the Thrush to be. Many were the quaint scenes which now daily occurred.

“If Bem desired to take a bath, the Thrush would endeavor to push him out; but Bem was not to be ousted in that style if he could prevent it, and commonly sent the poor Thrush away in consternation, his musical ear stunned by such direful din as threatened to rend his delicate heart as well as tympanum. Never shall I forget one droll scene. One day Bem found on the floor a white grape, which he seemed to be disposed comfortably to discuss, after having rolled it out into the broad sunshine. Just at this moment the Thrush stepped up in a cool and dignified manner, and carried the grape off; dropped it in the shade, and deliberately drawing up one foot among his feathers, seemed to say, ‘I claim the grape as my own; I stand on the defensive; come and get it if you dare!’ so closed the ‘off’ eye and looked as if the matter was settled to his entire satisfaction.

“Bem had been in the very act of pecking the grape when it was so unceremoniously withdrawn; he drew himself up on tiptoe fairly with astonishment, his eye seemed to grow larger and rounder, the feathers on his head stood alternately erect and clung close to the scalp; he stood a moment or two, and then with a loud ‘mew’ darted forward to recapture the stolen fruit, but the Thrush coolly and silently met him with open mouth and body thrown forward, yet still covering the grape. Bem’s wit returned to him—he quietly turned off, as if it was a small matter anyhow.

“We were astonished. Was Bem a coward after all? would he permit this bird, even if he was larger, to impose upon him in this fashion, and he able to whip mocking-birds at that? We shook our heads; if Bem does that, we shall withdraw his laurels. But see! he comes cautiously about the Thrush—what does he mean? ah, we perceive; Bem has sagaciously only changed his tactics, we will watch him; he thinks the Thrush will want some dinner pretty soon, and then, as Bem disdains to be called quarrelsome, he will quietly appropriate his treasure.

“Four hours things retained this position, the Thrush never moving more than six inches from his post, though evidently becoming hungry and weary, while Bem silently wandered about the room, feasting in the most provokingly cool way in both cages, and

continually making inadvertent incursions in the neighborhood of his enemy, as if for the purpose of throwing him off his guard. At last, Bem was on the other side of the room. The Thrush had been eyeing a dainty morsel which Bem had dropped about two feet from him. He looked, Bem was too much engaged to notice him, he could easily venture—he would—he did. Bem, whose keen eye had seen all, darted like lightning, and before the Thrush could turn about and seize again the contested treasure, Bem had alighted on the centre of the bed—the only place in the room where the Thrush would not follow him—and there quietly tore the grape to pieces and left it.

“But, alas! we had to send our brave, sagacious Bem home again. We were to make a long journey to the South, and he must stay behind. Ah, the poor fellow knew as well as we, that we were bidding him adieu. He pecked our fingers in great distress, and bit our lips till the blood came, in the energy of his farewell—while he uttered such sad, low cries as made us mourn for many a day in the remembrance.

“During our absence we wrote frequently inquiring of Bem, and many an injunction to him, to live and die, if need be, the same brave general we had known him. We never expected to see him again; but, after a year of wandering, we did return to our old home. At once we went to see the general, little dreaming that we should be remembered. What was our surprise then, when we called ‘Bem! Bem! General Bem!’ to see our dear friend and pet dart down to us from his hiding-place, and most evidently recognize us—his eye sparkling, his scalp-feathers raised, his wings drooping, and that same low cry which had haunted us so long greeting us again. Our happiness was real; and when we offered him the white paper, he instantly darted upon it, and tore it asunder to get the well-remembered treasure he had always found within.

“Again Bem went home with us—this time to fill our hearts with affection by his quaint impish ways and gentle waywardness. Now he became a privileged character; my paint-box was his especial admiration—he treated it with great veneration, having discovered that birds grew out of the little square pebbles, as he doubtless considered them, until one day he perceived I objected to his lifting from its case a black-looking, ill-shaped piece of paint, that I was even decidedly opposed to his meddling with it; from that moment that particular piece became a treasure—its value so great to him, that, hide where I might, it had ever an invisible glitter, which to his eyes was brighter than any gem; he would find and hide it from me, and thus I had at least once every day to search the room over for this indispensable color.

“No matter that I threatened him, he coolly dressed his feathers and commenced so dreamy a song as to soothe my rage at once. He became my constant companion; he bathed with me in the morning, he took his dinner with me from my plate, and perched at night close to my head. He sat on my shoulder or head when I worked, and seemed to express his opinion in regard to my progress in bird-making with quite a connoisseuring air. He grew to be profoundly jealous of all other birds; and if I talked to a fine mocking-bird, whose cage hung in my room, he would become so enraged, and finally depressed, that I became alarmed—I feared he would die.

“One day I had given this bird some water; my hand was in the cage, the mocking-bird was pecking at my fingers, when with a loud and vicious scream General Bem dashed from the floor up into the cage, and commenced a violent assault on the inmate. The struggle was but for a moment; he dashed out and I shut the cage-door, while Bem, mounted on the bed-post, sent forth such yells of fury as I never heard from birds’ lungs before. I could not pacify him for a long time—several hours; he hid in the shade of the furniture, and would not be induced to come out. The next day the mocker was flying about the room, Bem assailed him, and the fight became so desperate that I was obliged to send the mocking-bird away, while my poor Bem was seized with convulsions, and I thought him dead after a few moments. But his time had not yet come; he lived to pass through many such scenes of painful suffering.”

LIKE the Brown Thrasher, the HERMIT THRUSH is also a native of America, and is generally found in the countries adjoining to the Mississippi during the winter, making a partial migration to Kentucky, Indiana, and Tennessee, during the summer.



The name of Hermit is given to this bird on account of its eremitical and retiring habits, for this Thrush withdraws itself from the open country and systematically hides itself in the darkest and most secluded cane-brakes. Even when it ventures into the more open lands in search of food it does not make itself conspicuous, but keeps ever near the ground, flitting with swift and steady wing to and from the lonely brake where its nest is placed. This species is not known to possess any true song, merely uttering a very low and plaintive cry.

The nest of the Hermit Thrush is always placed in the thickest shelter, and is composed of dried leaves and grasses without any mud wall, and lined with grasses of a fine character. The eggs are about five in number, and their color a light blue, variegated with black-brown spots on the larger end. There are usually two broods in the year. The food of this species is almost wholly of a vegetable character. The general color is buffy-brown on the upper parts, warming into a decided ruddy tinge upon the tail and upper tail-coverts. The under parts are grayish-brown covered on the neck and chest with spots of a darker hue. The total length of the adult bird is about seven inches.

The Hermit Thrush (*Hylocichla unalasca*—formerly *Turdus solitarius*) is a species very much like the former, but smaller. Its range is much the same.

THE WOOD THRUSH (*Hylocichla mustelina*). This sweet and solitary songster, says Wilson, inhabits the whole of North America, from Hudson's Bay to the peninsula of Florida. At whatever time he arrives, he soon announces his presence in the woods. With the dawn of the succeeding morning, mounting to the top of some small tree, that rises from a low, thick-shaded part of the woods, he pipes his few but clear and musical notes in a kind of ecstasy, the prelude or symphony to which strongly resembles the double-tonguing of a German flute, and sometimes the tinkling of a small bell. The whole song consists of five or six parts, the last note of each of which is in such a tone as to leave the conclusion evidently suspended. The *finale* is finely managed, and with such charming effect as to soothe and tranquillize the mind, and to seem sweeter and mellower at each successive repetition. Even in dark, wet, and gloomy weather, when scarce a single chirp is heard from any other bird, the clear notes of the Wood Thrush thrill through the drooping woods, from morning to night; and it may be said, truly, the sadder the day, the more sweet his song.

“The favorite haunts of the Wood Thrush are low, thick-shaded hollows, through which a small brook meanders.” Such has been the description of the *habitat* of this bird; and it was, no doubt, correct; but now we find this bird one of the most abundant of any in Central Park. It is shy, and still has the faculty to keep out of sight; and whether any change in his habit has taken place, we are not informed. Most certainly, we were once of the opinion, held by most people, that this bird was, of all others, the most inclined to keep away from civilization.

THE DWARF THRUSH is merely a variety of the Hermit, but smaller, being only six and a half inches in length. It is confined to the Pacific coast, and along the valleys of the Gila and El Paso.

WILSON'S THRUSH (*Hylocichla fuscescens*). This bird, called also Tawny Thrush, is said to have no song, but a “sharp chuck.” It is ten inches in length, and twelve in extent of wing. It is well distinguished by having indistinct spots, and these confined to the fore part of the breast.

THE OREGON THRUSH is from the Pacific coast, and measures about seven and a half inches in length.

THE OLIVE-BACKED THRUSH (*Hylocichla ustulata*), called Swainson's Thrush, is distinguished from others by a perfectly uniform and pure dull olivaceous shade of its upper parts, most strongly marked on its rump and tail. It ranges from Greenland to Peru, and westward to the Black Hills.

THE AMERICAN ROBIN (*Merula migratoria*), or Migratory Thrush. This most delightful and familiar bird was named by our first New England settlers after the little English Robin-redbreast. Though so much larger, our bird reminded them of home, the ruddy-colored breast being quite similar to that of the English bird. The Migratory Thrush is the proper term, though we would not willingly see the present name changed.

The Robin is, *par excellence*, the favorite of American birds. Its handsome appearance and social habits endear it to all. It is especially abundant in towns where orchards abound. Although it is seen in the forests, or on the outskirts, it is almost habitually a sojourner in the close proximity of the farm or country-house. Indeed, it could scarcely be more so if it were a domestic fowl. Though it migrates, as a rule, yet some stragglers are seen in the deep woods during winter. They do not visit the farm-yard in cold weather as the chickadee does, as one would naturally expect they would. He is one of the earliest of our spring songsters, coming in March, often when the snow is yet upon the ground.

The Robin inhabits the whole continent, from the coldest region to the Gulf States. It breeds in portions above Virginia. In some portions it is called the American Fieldfare, after the English bird so called. On the Pacific side, in California and south, there is a variety having some slight differences of marking.

THE GRAY-CHEEKED THRUSH (*Hylocichla alicia*) is very nearly like the olive-backed, but darker. It exhibits an ashy shade about the sides of the head, and a white ring around the eyes. It inhabits from the Mississippi region to the Missouri.

THE VARIED THRUSH (*Hesperocichla navia*) is more like the Robin than any other species. Its shape is almost exactly like the latter. The plumage differs somewhat. The wings and tail are somewhat shorter. It is confined to the Pacific coast, though stragglers have been seen in New England.

AMONG the best known and best loved of the European songsters, the BLACKBIRD is one of the most conspicuous.

This well-known bird derives its popular name from the uniformly black hue of its plumage, which is only relieved by the bright orange-colored bill of the male bird. The song of this creature is remarkable for its full mellowness of note, and is ever a welcome sound to the lover of nature and her vocal and visual harmonies. Often the poor bird suffers for its voice; and being kept within the bars of a cage, is forced to sing its wild native notes "in a strange land." In captivity it is sometimes subjected to training, and has been taught to whistle tunes with great spirit and precision. Generally the bird sings in the daytime, but there are times when it encroaches upon the acknowledged province of the nightingale, and makes the night echoes ring with its rich ringing tones.

It is rather curious that even in its native state the Blackbird is something of a mimic, and will imitate the voices of other birds with remarkable skill, even teaching itself to crow like a cock and to cackle like a hen.

The Blackbird feeds usually on insects, but it also possesses a great love of fruit, and in the autumn ravages the gardens and orchards in a most destructive manner, picking out all the best and ripest fruit, and wisely leaving the still immatured produce to ripen on the branches. Perhaps it may be partly carnivorous, as one of these birds was seen to attack and kill a shrew mouse.

As it is so common a bird, and constantly haunts the hedge-rows, it is greatly persecuted by juvenile gunners, whom it contrives to draw away from its nest by flitting in and out of the hedge, always taking care to keep out of shot range, and having a curious habit of slipping through the hedge, and flying quietly back to its nest, almost touching the surface of the ground in its rapid progress. It is not a sociable bird, being seldom seen in company with others of its own species, and not often even together with its mate.

THE well-known SONG-THRUSH, or THROSTLE, as it is sometimes called, bears a deservedly high rank among the birds of song.

It is plentifully found in most parts of Europe, and favors the people with its vocal efforts throughout a considerable portion of the year. The song of the Thrush is peculiarly rich, mellow, and sustained, and is remarkable for the full purity of its intonation and the variety of its notes. The Thrush begins to sing as soon as incubation commences, and continues its song from the beginning of spring until the middle of autumn. In many cases the bird sings to a very late period of the year, and has been heard in the months of November and December. On account of its beautiful voice, it is in great request among bird-fanciers, and is sold in large numbers as a cage songster.

ANOTHER sub-family of the Thrushes is named after the genus which is accepted as its type, and is called by the title of Timalinæ. On account of their chattering propensities they are more popularly termed Babblers. Several examples of this group will be given in the following pages, the first of which is the CHESTNUT-CAPPED TIMALIA, a bird which derives its name from the peculiar coloring of the head.

This species is an inhabitant of Java, and is rather common in that country. It is a sufficiently familiar bird, approaching human habitations without much diffidence, and building in close proximity to the barn or the plantation. It is a pleasing songster, possessing a sweet and musical voice, though its song has but little variety, consisting of only five notes. A sixth note is sometimes added, but evidently forms no part of the real song. This melody is repeated at very short intervals, with a peculiarly slow and well-modulated intonation.

In its habits this bird reminds the observer of the common Thrush, and in its mode of feeding it also bears a great resemblance to that sweet songster. Its food consists chiefly of insects, which it captures principally on the ground, but it will vary its diet with snails, slugs, and other similar creatures, and will also feed upon berries and fruits. The bill is strong and thick, in order to enable the bird to capture and crush its food, and to disinter it from beneath the surface of the earth. Its feet are employed for the same purpose, and are consequently better developed than in the true Thrushes. The general form of the bird is rather thick and short in proportion to its size.

The color of the Chestnut-capped Timalia is olive-brown on the upper portions of the body, with the exception of the head, which is colored on the crown with deep chestnut. The under parts are of a lighter hue than the back. A white band passes over the eye. The throat and cheeks are pure white, and the breast is also white, but is marked by a series of jetty black stripes.

AUSTRALIA possesses a curious and valued specimen of this group, which is popularly called the SPOTTED GROUND THRUSH.

This bird is found throughout the greater part of Australia and Van Diemen's Land, and on account of the delicacy of its flesh is greatly prized by both natives and colonists. Being always attracted by certain localities, it may be easily found by every one who is acquainted with its habits. Unlike the generality of birds, it cares little for trees or bushes, and seldom is known to perch upon the branches, preferring the tops of low stone-covered hills, or rude and rocky gullies, having a decided predilection for those which are clothed with grass and scrubby brushwood. The spaces between fallen trees are also a favorite haunt of this bird.

The Spotted Ground Thrush is no great flyer, taking to wing with much reluctance, and seldom voluntarily raising itself in the air except to fly from one side of a gully to another. When it does take to flight, especially if alarmed, it rises with a loud fluttering noise, and proceeds through the air in an irregular and dipping manner. To compensate, however, for its imperfect power of wing, its legs are well developed, and render it an exceedingly fast runner, so that it is able to conceal itself with great rapidity as soon as it finds cause of alarm.

## BABBLERS.

SEVERAL species of Babblers possess a sweet song, others are admirable mimics, while others are remarkable for the strange oddity of their cry.

One of the best songsters in this group is the BLACK-FACED THRUSH, a native of the mountainous regions of India and China. This bird is very gregarious in its habits, assembling in large flocks and preferring the thickest jungles and deepest ravines to the open country. These flocks, although they are so deeply hidden, are easily discoverable by means of the extraordinary sounds which they emit, and which are said to resemble a chorus of wild laughter. The food of this bird, when at liberty, consists chiefly of fruit and insects; but when tamed, the Black-faced Thrush is rather carnivorous in its character, as will presently be seen. The nest of this bird is rather rudely constructed of little sticks and grasses, worked into some convenient hole in the side of a gully, and generally contains four eggs.

This species is easily tamed, and, as will be seen from the following notes, made by Mr. Frith, of a Black-faced Thrush that had been for some time in his possession, is a very eccentric and amusing creature:—

“The bird was exceedingly tame and familiar, and delighted, like a cockatoo, in being caressed and tickled by the hand, when it would spread out its wings and assume very singular attitudes. It was naturally a fine songster, and a most universal imitator. Whenever chopped meat or other food was put into its cage, it always evinced a propensity to deposit the bits one by one between the wires; and when a bee or wasp was offered, this bird would seize it instantly, and invariably turn its tail round and make the insect sting this several times successively before eating it. A large beetle it would place before it on the ground, and pierce it with a violent downward stroke of the bill; a small snake, about a foot long, it treated in a like manner, transfixing the centre of the head; it afterwards devoured about half the snake, holding it by one foot while it picked it with the bill, as was its common mode of feeding.”

THE LAUGHING CROW of India (*Garruláx leucólophus*) is another species of the same genus, and is remarkable for the singular resemblance which its cry bears to the laughter of human beings. Its name of “leucolophus,” or white-crested, has been given to it on account of the white feathers which are found on the crown of the head.

## ORIOLES.

THE GOLDEN ORIOLE is well known in many parts of the European Continent, especially the more southern portions of Europe, such as the shores of the Mediterranean and Southern Italy.

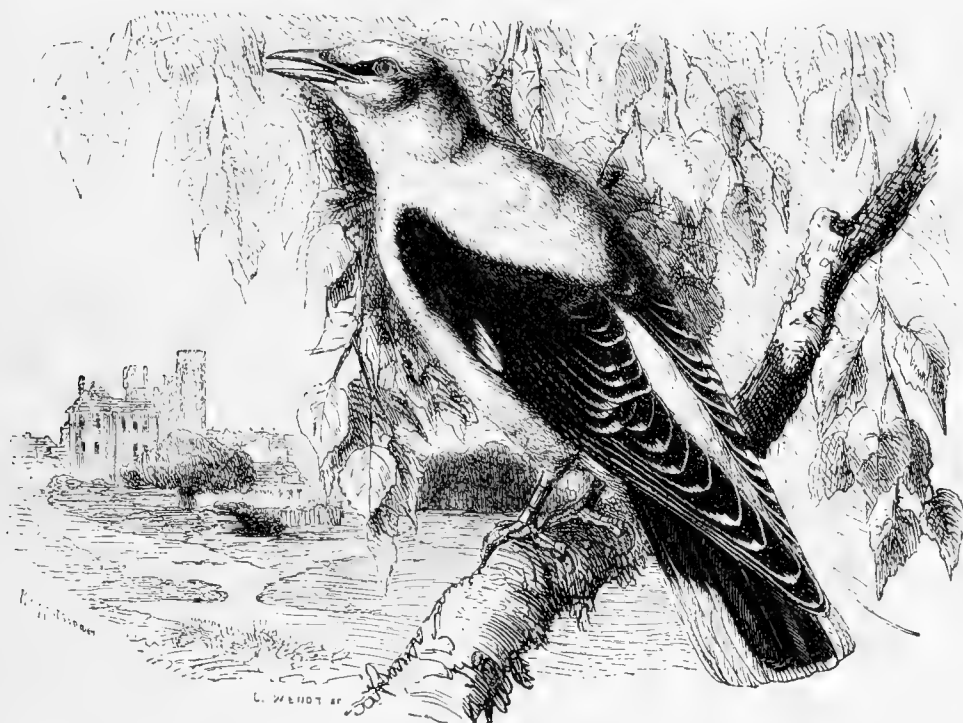
The Golden Oriole derives its name from the bright golden yellow with which the feathers of the adult male bird are largely tinged. The full glory of its plumage is not displayed until the bird has entered its third year.

In Italy, this bird is quite common, and by the peasantry is supposed to announce the ripening of the fig, its peculiar cry being translated into a choice Italian sentence, signifying that the fruits have attained maturity. It is rather gregarious in its habits, generally associating in little flocks, and frequenting lofty trees and orchards, where it can obtain abundance of food.

It is an exceedingly shy and timorous bird, keeping carefully from man and his home, and only venturing into cultivated grounds for the sake of obtaining food. Even in such cases it is extremely cautious in its behavior, and as it always takes the trouble to set sentries on guard, it cannot be approached without the greatest patience and wariness on the part of the sportsman or observer. Being generally found in the loneliest spots, and especially preferring the outskirts of forests, whence it can at once dive into the thick foliage and escape from

danger, it often baffles the skill even of the practised fowler, who is forced to trust to the careful imitation of its note for his hope of getting within shot of this cunning bird. Moreover, the imitation must be exceedingly exact, for the ear of the Golden Oriole is wonderfully true and delicate, and if the bird detects the least error in the intonation, it takes instant alarm, and seeks refuge in the deepest recesses of the forest. According to M. Bechstein, the Golden Oriole is so fearful of exposing itself, that it never perches upon a naked branch, always preferring those boughs which are most thickly covered with foliage, and which will consequently afford it the best shelter.

The food of the Golden Oriole consists chiefly of insects; and as the bird is rather a voracious one, it is very serviceable in clearing away the caterpillars and other fruit-devouring creatures which are specially rife in the spring, and destroy so much fruit in its earliest stages. As is often the case with the insect-eating birds, the Golden Oriole has a great taste for fruit when it is quite ripe, and in the autumn is very fond of the best and mellowest fruits, having an especial predilection for cherries, figs, and grapes. Perhaps it may be able to detect the



GOLDEN ORIOLE.—*Oriolus galbula*.

larva of some insect within the fruit, and to do good service by destroying it before it has come to maturity.

The nest of this bird is a very elegantly formed and well-constructed edifice, of a shallow cup-like shape, and usually placed in a horizontal fork of a convenient branch. The materials of which it is made are mostly delicate grass-stems interwoven with wool so firmly that the whole structure is strong and warm. The eggs are generally four or five in number, and their color is purplish-white, sparsely marked with blotches of a deep red and ashen-gray. It is believed that there is but one brood in the year, so that the species does not multiply very rapidly. Sometimes the bird is said to build a deep and purse-like nest, which is suspended from the forked branch instead of being placed upon it.

This species has a very peculiar note, loud, flute-like, and of a singularly articulate character, as may be supposed from the fact already mentioned, that the Italian peasantry believe it to speak their language. Bechstein considers the note to resemble the word "pühlo," and many writers think that the different names of Oriole, Turiole, Lorient, Pirol, and Bülow are given to the creature in imitation of its cry.

The color of the adult male is bright yellow over the whole of the head, neck, and body, with the exception of the wings, the two central tail-feathers, and the basal portions of the remaining feathers, which are jetty black, the two colors contrasting finely with each other. Across the eye runs a dark stripe, and the eyes themselves are bright pinky red. In the young bird the yellow is of a dusky greenish hue, and the black feathers are of a dingy brown, and, according to Mr. Yarrell, the young males after their first moult resemble the old females. In the second year the yellow of the back is more decided, and the wings and tail are of a deeper black, and in many of the remaining feathers the colors are less brilliant than in the bird of full plumage. It is rather curious that as the bird breeds in its second year, it is hardly possible to distinguish the sexes, both wearing the same greenish-yellow and brownish-black apparel. The total length of the Golden Oriole is not quite ten inches.

There are many other Orioles known to ornithologists which cannot be described in these pages for lack of space, and it must be sufficient to record the Mango Bird of India (*Oriolus kundoo*), remarkable for its peculiarly melancholy cry, and the Black-headed Oriole of Bengal (*Oriolus melanocéphalus*), notable for its lengthened monotonic flute-like note. None of the true Orioles are found in America; and the reader must be careful not to confound those birds, which are nearly allied with the starlings, with the Orioles of the eastern hemisphere, the only resemblance between them being a similarity of coloring.

BEFORE quitting this interesting family of birds, we must give a passing notice to the BULBULS, so well known by the repeated references to them in Oriental writings. Some of the species are possessed of remarkably sweet voices, and are popularly called nightingales. They are easily tamed, becoming very fond of a kind owner, and can be taught to perform many interesting tricks. One species is kept for the purpose of fighting, and is trained for this object as carefully as gamecocks were formerly trained for the cruel amusement of their owners. In a wild state they are generally found in the woods and jungles, and are in the habit of visiting gardens for the sake of preying upon the ripened fruits and insects. They are all exotic birds, and are only found in the eastern hemisphere.

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## FLY-CATCHERS.

THE interesting family of the FLY-CATCHERS is composed of a large number of species, extremely variable in size, form, and color. The average dimensions of these birds are about equal to those of a large sparrow, and many are smaller than that bird, although two or three species nearly equal the thrush in size. Their shape is always neat and elegant, and their plumage sits closely on the body in order to permit the short but rapid evolutions which they make in pursuit of their active prey. One or two, such as the Paradise and Fork-tailed Fly-catchers, are remarkable for the mode in which the tail is elongated into a graceful and elegant train, and in other species the tail is broad and fan-like. In color the Fly-catchers are mostly of sober but pleasing tints, but there are several notable exceptions to the rule, such as the Crested Fly-catcher (*Pyrocéphalus coronátus*), remarkable for the crown of fiery scarlet feathers which decorates the top of the head, the Blue Niltava (*Niltáva sundara*), which has its broad back and tail of a brilliant azure, and the *Selóphagus picta*, whose abdomen is of a bright scarlet.

The bill of the Fly-catcher is of various lengths, but is almost invariably rather hard and flattened at the base, slightly curved at the point, and compressed towards the tip. At the corners of the mouth are generally several long bristles like those of the nightjar, and probably placed there for the same purpose, *i. e.*, to aid the bird in the capture of its insect prey. The wings are long and firmly made, and the feet are slender and feeble in comparison with the dimensions of the body.



**Testimonials to the "Tafeln" of Brehm's Thierleben.**

The late CHARLES DARWIN writes:—"The illustrations are the best I ever saw in any work. I find it superfluous to enter here into particulars, as I already, in the 'Descent of Man,' have willingly and openly confessed how much I have profited by Mr. Brehm's book, and how highly I esteem it."

Sir JOHN LUBBOCK, Bart., D.C.L.:—"You have, I think, done good service in publishing them. They are certainly very admirable."  
W. B. CARPENTER, M.D., LL.D., writes:—"I can quite endorse the favorable opinions already given by distinguished zoologists as to the high character of the illustrations generally."

WE have concluded to submit for public patronage a work with the above title, being a series of exquisite Engravings representing the ANIMAL WORLD, executed with great scientific accuracy, and accompanied by full Descriptive Text, written in popular terms, so as to delight and instruct the people. Anyone who has considered the subject must be at a loss to understand why an ILLUSTRATED NATURAL HISTORY, comprehensive and at the same time popular, has not before this been published in this country. Indeed any lover of animals who has visited the great museums and zoological gardens and has had access to books of engravings in the public libraries, could not fail to remark the wealth of material in existence devoted to this subject. Being confirmed in our conviction of the desirability of such a work, we laid under contribution the best existing authorities for the production of most perfect representations of all the more important living creatures, and among the artists whose delineations will delight the reader, we may mention Harrison Weir, Wolf, Coleman, Fr. Specht, and Mutzel. By far the majority of the engravings in these volumes are from drawings made from the *living* animals, many at the Zoological Society's Gardens in London, England.

We purpose that our patrons shall be aided and interested in their study by such an array of pictures as has never before embellished any Natural History. In numerous instances the engraving is printed in oil-colors, and this portion of the illustrations has been taken charge of by Messrs. L. Prang & Co., of Boston, who we believe rank foremost for high artistic results in this department of printing. These Oleographs were copied under the superintendence of Mr. Prang from the renowned "Tafeln" of "Brehm's Thierleben," so that they may be declared perfectly reliable.

We sought competent advice from various sources as to the most suitable text that should accompany this panorama of handsome Engravings. It was found impossible to embody all the present ideas of naturalists in a single work like this on account of the rapid advances and constant changes in their knowledge of, and habits of thought respecting, the Animal World. And it seemed to us correct that the true object of Zoology is not to arrange, to number, and to ticket animals in a formal inventory, but to inquire into their life-nature, and not simply to investigate the lifeless organism.

What do we know of "Man" from the dissecting-room? Is it not Man, the warrior, the statesman, the poet, etc., that we are interested in? With all veneration which attaches itself to those who are the accredited possessors of abstruse learning, their inordinate use of phraseology detracts too much, we fear, from the fascination that the study of the Animal World would otherwise yield, and as we are not content to have our work restricted to a favored few, we thought the task placed in our hands to be to keep the work free from a repellant vocabulary of conventional technicalities. Our endeavor has been to find an author whose work would be noted for its fund of anecdote and vitality rather than for merely anatomical and scientific presentation, and we arrived at the conclusion that we could not do better than avail ourselves of the Rev. J. G. Wood's comprehensive work—a work most popularly approved by speakers of the English language. It would be superfluous to say one word concerning the standard character of his book, from the pages of which old and young at the other side of the Atlantic have obtained so much instruction and rational amusement. Avoiding the lengthened dissertations and minute classifications of specialists, he presents to his readers in popular terms a complete treatise on the Animal Kingdom of all climes and countries. The one objection that could be urged against it was, that animal life in America might be treated more fully and American forms given more consideration. In order to obviate this drawback and to do full justice to the creatures of our own country, we secured the aid of Dr. J. B. HOLDER, of the American Museum of Natural History in New York, an undoubted American authority, who has adapted Wood's work to American wants and given prominence to American forms of Animal life.

The splendid work on Rodentia, by Allen, Coues, and others, will be fully consulted. The valuable work on North American Birds, by Baird, Brewer, and Ridgway, will be the guide in the treatment of birds. The late arrangement of the classification and nomenclature of North American Birds, by Mr. Ridgway, and the Committee on that subject of the Ornithologists' Union, will be utilized in full. The arrangement of Mammals will be after the latest classification by Professor Flower, of the Zoological Society of London. So that this will be the first popular Natural History worthy of the name that has made its appearance here, which gives due and full recognition to the animate world surrounding us.

**Terms of Publication.**

The extent of the work will be 68 parts of 28 pages, at the price of 25 cents each. The entire publication will contain 31 Oleographs and 68 Full Page Engravings on Wood, besides many hundreds of exquisite Illustrations interspersed through the text. The parts will be issued every two weeks, and are payable only as delivered. No subscriber's name will be received for less than the entire work, and anyone removing, or not regularly supplied, will please address the Publisher by mail.

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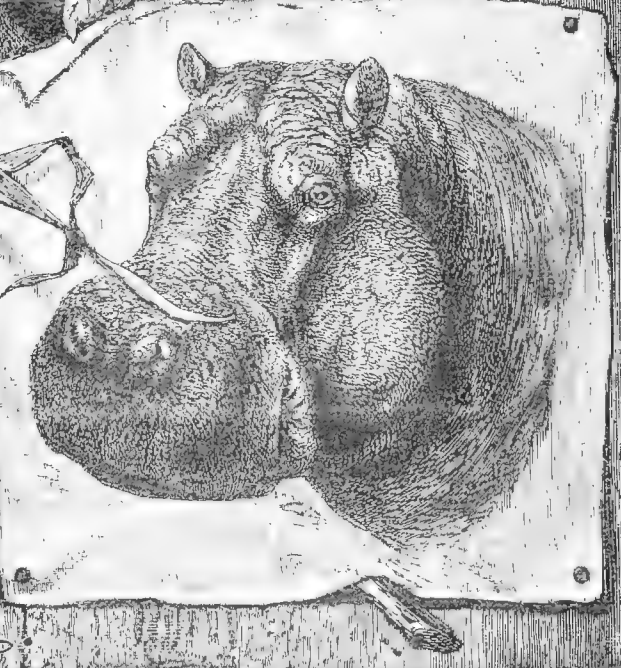
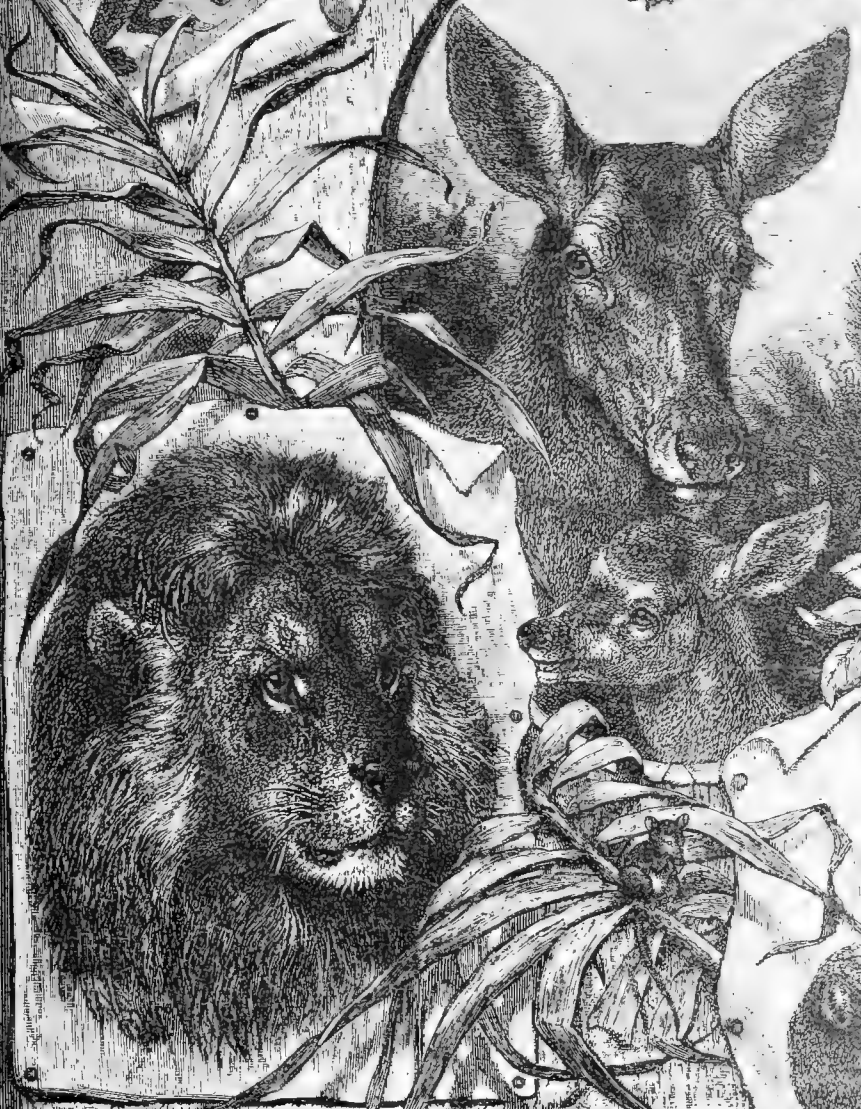
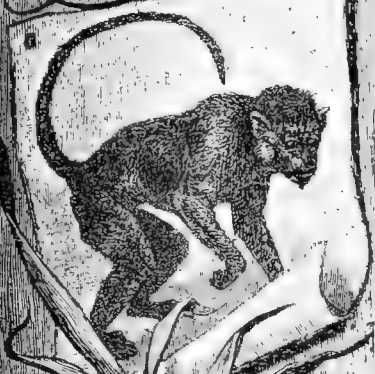
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# Animate Creation

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ONE of the sub-families into which the Fly-catchers are divided is known by the name of *Vireoninae*, or GREENLETS, on account of the constant presence of green in some part of their plumage. They are all little birds, and are confined to the New World, inhabiting America, Brazil, Guiana, and the West Indian islands. They are mostly insect feeders, though they will vary their diet with fruits, berries, and other vegetable food. Many species of Greenlets are known to ornithologists, and some of them are remarkable for their eccentric habits and their curious mode of nesting.

THE YELLOW-BREASTED CHAT of America is well worthy of notice, as it possesses a very prettily colored plumage and elegant form, and at the same time is one of the most eccentrically behaved of the feathered creation, even surpassing in the whimsical oddity of its manners the mirth-provoking evolutions of the demoiselle crane.

It is a partially migratory bird, having rather an extensive range in its native country, and passing from north to south according to the season of the year and the warmth or inclemency of the weather. According to Wilson, it arrives in Pennsylvania about the first week in May, and departs for the south in the month of August. As is usually, if not invariably, the case with birds, its migrations are restricted to a narrow line, which runs almost due north and south, and the male birds always make their appearance before their mates. Of the habits of this bird, Wilson gives the following interesting description:—

“When he has once taken up his residence in a favorite situation, which is almost always in close thickets of hazel, brambles, vines, and thick underwood; he becomes very jealous of his possessions, and seems offended at the least intrusion; scolding every passenger as soon as they come within view in a great variety of odd and uncouth monosyllables, which it is difficult to describe, but which may be readily imitated so as to deceive the bird himself, and draw him after you for half a quarter of a mile at a time, as I have sometimes amused myself in doing, and frequently without once seeing him. On these occasions his responses are constant and rapid, strongly expressive of anger and anxiety, and while the bird itself remains unseen, the voice shifts from place to place among the bushes as if it proceeded from a spirit.

“First is heard a repetition of short notes resembling the whistling of the wings of a duck or a teal, beginning loud and rapid, and falling lower and slower, till they end in detached notes; then a succession of others, something like the barking of young puppies, is followed by a variety of hollow, guttural sounds, each eight or ten times repeated, more like those proceeding from the throat of a quadruped than that of a bird, which are succeeded by others not unlike the mewings of a cat, but considerably hoarser.

“All these are uttered with great vehemence, in such different keys and with such peculiar modulations of voice as sometimes to seem at a considerable distance, and instantly as if just beside you; now on this hand, now on that; so that from these manœuvres of ventriloquism you are utterly at a loss to ascertain from what particular spot or quarter they proceed. If the weather be mild and serene, with clear moonlight, he continues gabbling in the same strange dialect, with very little intermission, during the whole night, as if disputing with his own echoes, but probably with a desire of inviting the passing females to his retreat; for when the season is further advanced, they are seldom heard during the night.”

It is a very retiring bird, keeping itself completely out of view, but if once detected, flinging itself into a state of ludicrous alarm at the sight of a human being. It generally restricts itself to the brushwood, and flits quietly among the densest shade; but if it should be discovered, it immediately dashes upwards to a height of some forty or fifty feet, drops as suddenly as it had mounted, then rises again, letting its legs dangle at full length, and uttering a succession of terrified squeaks and yells. So quick are its movements, and so wary are its habits, that a single gunner can seldom succeed in shooting one of these little birds, and the aid of a second sportsman is required before the crafty and active little creature falls to the shot.

The food of the Yellow-breasted Chat consists principally of insects, and it has a special predilection for the larger beetles, which it eats of such great dimensions, that the spectator

instinctively wonders how so small a bird can eat so large an insect. It will also feed upon berries and many kinds of fruit. The color of this bird is dark olive-green upon the upper portions of the body; the breast and the under surface of the wings are light yellow, and the abdomen is nearly white.

The Yellow-breasted Chat (*Icteria virens*) is a larger bird than the others of this family. The description by Wilson given above is one of the author's best pieces. No one has ever excelled this poet naturalist, in the fidelity and accuracy of his bird literature.

A species found in the Western Territories has been named the Long-tailed Chat.

ANOTHER group of the Fly-catchers is denominated the Alecturinae, or Cock-tailed birds, a name which has been given to them on account of their habit of raising their long and curiously formed tails in a manner similar to that of the domestic fowl. These birds are only found in South America, and are all of small dimensions, the average length being about six inches. There are many species of this group, and they differ considerably in their habits and in the localities which they frequent. Some are fond of forest lands, perching upon lofty branches, and fluttering from their post in chase of passing insects, while others shun the wooded districts and are only found upon the low-lying lands where water is plentiful, and where they find their insect food upon the leaves and stems of aquatic plants. In all the species the bill is flattened towards the base and rather convex at the point.

One of the most interesting of the Alecturine birds is the CUNNINGHAM'S BUSH SHRIKE, which from the strong and slightly hooked beak was formerly supposed to belong to the Shrike family. It is a native of South America, and haunts the thickly wooded districts, foraging in many directions in search of its prey, which generally consists of the larger insects. It is possessed of strong and firmly vaned wings, and is able to fly with remarkable rapidity. The tail of this species is extremely elongated and deeply forked, the two exterior feathers being the longest, and the others decreasing rapidly in length. Even when the bird is stationary, this long tail renders it very conspicuous, but when it is living and in motion, it renders the tail a very ornamental appendage, by raising it so as to droop like the feathers of a cock's tail, and permitting the long plumes to wave gracefully in the breeze.

The general color of this bird is a uniform ashen-gray over the upper surface, covered with numerous longitudinal streaks of brown. The throat is white, with the exception of a rather broad semi-lunar band of deep purple-brown, which marks the division between the chest and the throat. The wings and tail are blackish-brown, and the quill-feathers of the wing are marked with a series of longitudinal ruddy bands.

A SECOND group of the Fly-catchers is distinguished by the name of Tyranninae, a title that has been applied to them on account of their exceedingly combative habits during the season of incubation, and the tyrannous sway which they exercise over birds of far greater size, powers, and armature. They are all inhabitants of America, and for the greater part are found in the more tropical regions of that land. They have a very shrike-like bill, and many of the shrike habits, preying not only upon insects, but pouncing upon young birds, animals, and reptiles, and even adding fish to their scale of diet. The beak of these birds is very large, wide at the base, and narrowing gradually to the tip, where it is boldly compressed and rather strongly hooked. The angle of the mouth is furnished abundantly with strong bristles, and the small nostrils are almost entirely hidden by the feathers of the forehead.

Several species are included in this group, among which the two birds which will be described in the following pages are the most remarkable.

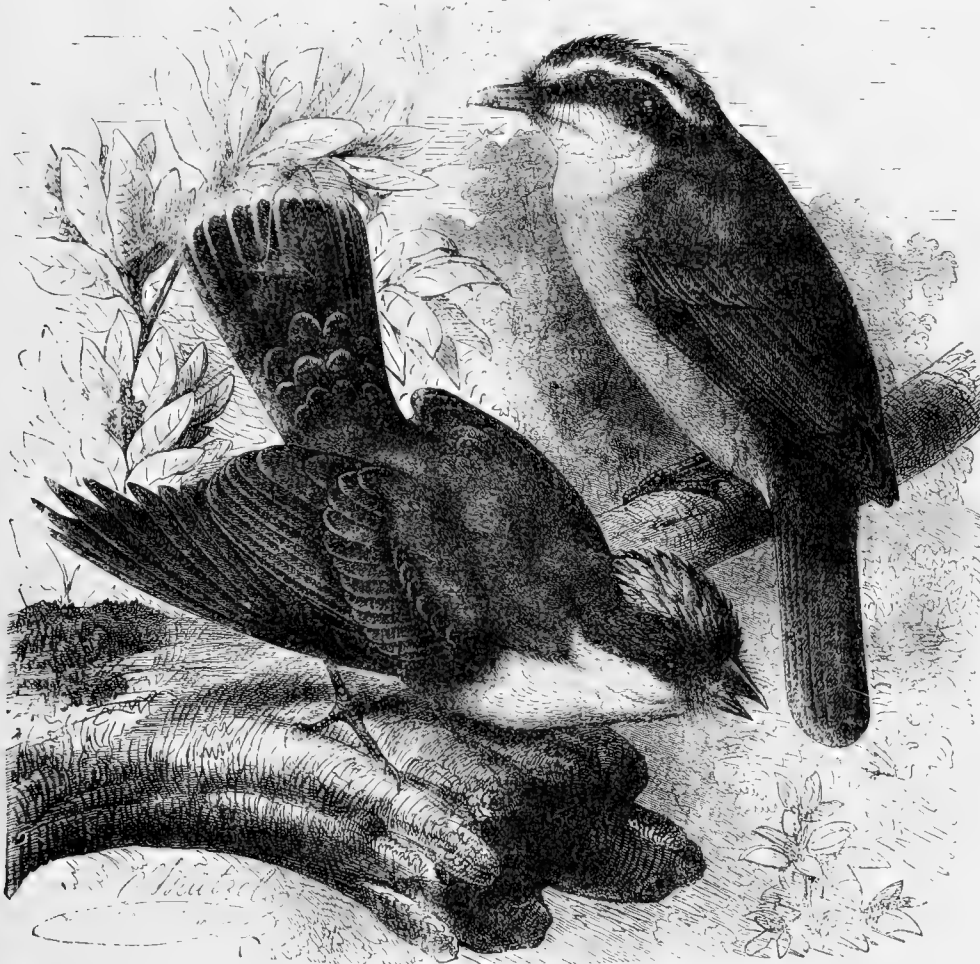
The first of the Tyranninae is the well-known KING BIRD, or TYRANT FLY-CATCHER, (*Tyrannus carolinensis*), celebrated by Audubon, Wilson, and many other writers on the ornithology of America.

This very interesting bird is one of the migratory species, arriving in the United States about the month of April, and remaining until the end of the autumn, when its young are fully fledged, and able to shift for themselves. The name of King Bird has been given to this species not only on account of the regal sway which it wields over most of the feathered race,

but also on account of the flame-colored crest which appears whenever the bird raises the feathers of the head.

The habits of this Fly-catcher are very remarkable, and have been so ably narrated by Wilson, that they must be given in his own graphic language:—

“The trivial name, King, as well as Tyrant, has been bestowed on this bird for its extraordinary behavior, and the authority it assumes over all others during the time of breeding. At that season, his extreme affection for his mate, and for his nest and young, makes him suspicious of any bird that happens to pass near his residence, so that he attacks, without discrimination, any intruder. In the months of May and June, and part of July, his life is one continued scene of broils and battles, in which, however, he generally comes off conqueror.



KING BIRDS.—*Tyrannus carolinensis*.

Hawks and crows, the bald eagle and the great black eagle, all equally dread a *rencontre* with this dauntless little champion, who, as soon as he perceives one of these last approaching, launches into the air to meet him, mounts to a considerable height above him, and darts down upon his back, sometimes fixing there, to the great annoyance of his sovereign, who, if no convenient retreat or resting-place be near, endeavors by various evolutions to rid himself of his merciless adversary.

“But the King Bird is not so easily dismounted. He teases the eagle incessantly, sweeps upon him from right and left, remounts, that he may descend on his back with the greater violence; all the while keeping up a shrill and rapid twittering, and continuing the attack sometimes for more than a mile, till he is relieved by some other of his tribe equally eager for the combat.

“There is one bird, however, which by its superior rapidity of flight, is sometimes more

than a match for him ; and I have several times witnessed his precipitous retreat before this active antagonist. This is the purple martin, one whose food and disposition is pretty similar to his own, but who has greatly the advantage of him on the wing, in eluding all his attacks, and teasing him as he pleases. I have also seen the red-hooded woodpecker, while clinging on a rail of the fence, amuse himself with the violence of the King Bird, and play *bo-peep* with him round the rail, while the latter, highly irritated, made every attempt, as he swept from side to side, to strike him, but in vain. All this turbulence, however, vanishes as soon as his young are able to shift for themselves, and he is then as mild and peaceable as any other bird."

Audubon relates an account of a battle between a martin and King Bird, wherein the former proved victorious. The martin had long held sole possession of a farm-yard, and when a King Bird came to build its nest within the same locality, it assaulted the intruder with the utmost fury. The act of building on the forbidden ground aroused the anger of the martin to such an extent, that whenever the male King Bird passed with materials, the martin attacked, and by force of superior agility dashed its foe to the ground. At last the poor King Bird died, being worn out with continual struggles, and its mate was forced to leave that spot.

The flesh of the King Bird is held in some estimation in one or two of the States, and the bird is shot in order to supply the table.

The narrator further proceeds to observe, that the King Bird is in great disfavor with the farmers, who are in the habit of shooting it whenever they can find an opportunity, on account of its fondness for bees. It cannot be denied that the suspicions of the bee-owner are not without foundation, for the King Bird will perch upon a rail or fence near the hives, and from that elevated post pounce upon the bees as they leave or return to their homes. Many persons, however, think that it does not devour the working bees, but merely singles out the drones, thus sparing the workers the trouble of killing those idle members of the community at the end of the season. This supposition derives some force from the well-known fact, that the King Bird is very fastidious in its taste, and that it will watch the flight of many insects in succession before it can select one to its taste. Even if it should destroy a few hundred bees annually, it repays the loss a thousand-fold by the enormous destruction which it works among the caterpillars and other noxious insects during the earlier parts of the year ; and, according to Wilson, every King Bird shot is a clear loss to the farmer.

The food of the King Bird, although mostly of an insect character, and perhaps wholly so in the spring and summer, is sometimes mixed with vegetable substances, and in the autumn the bird delights in berries and ripe fruits, the blackberry being one especial favorite. It often hovers over streams and rivers, chasing insects like the swallow, and occasionally dashing into the water for a bath, and then sitting to plume its feathers on some convenient branch overhanging the water.

The flight of the King Bird varies according to circumstances. When it is migrating it flaps its wings rapidly six or seven times in succession, and then sails onwards for a considerable distance, repeating this process continually as it proceeds on its long voyage. During the flight it is perfectly silent, and associates in bands of twenty or thirty in number. But in the season of love the bird dashes some thirty yards aloft, and there hangs with quivering wings and ruffled plumes, uttering the while a continual low shriek.

The nest of the bird, which is so valiantly defended by the parent, is generally begun in the beginning of May, and is placed among the branches of a tree. The substances of which it is composed are slender twigs, wood, vegetable fibres, fine grasses, and horsehair. There is another species of tyrant, the CRESTED TYRANT (*Tyrannus cristatus*), which employs many similar materials for its nest, hay, feathers, hogs' bristles, dogs' hair, and the cast exuviae of snakes. The last substance seems to be absolutely essential to the birds' comfort, for Wilson says that of all the numerous nests which he discovered, he never found one without some of this curious material. The eggs of the King Bird are generally five in number, and there are mostly two broods in the year.

With the exception of the few bright feathers of the crest, the plumage of the King Bird is of a rather sombre character. The head is black, but when the bird raises the crest feathers,

their bases are seen to be of a bright orange or flame color. This appearance is never seen unless the bird is excited. The tail is also black, but is tipped with white. The general color of the upper parts of the body is ashen-gray, and the quill-feathers and coverts of the wing are marked with dull white. The under parts of the body are white with the exception of a large gray patch on the breast. The total length of the bird is about eight inches. In the Southern States of America the King Bird is called the Field Martin.

**THE KING BIRD.** This bird, called also BEE MARTIN, is common to all parts of America, from the Atlantic to the Rocky Mountains. As a summer resident it is abundantly distributed throughout New England.

There are thirty-three species of this group of Fly-catchers, having quite characteristic features, that at once distinguish them.

The flat and wide bill is the principal one. Many of them have crests; the larger species having scarlet feathers concealed under the topknot.

The GREAT CRESTED FLY-CATCHER (*Myiarchus crinitus*) is one of the larger species. It is a rare bird in New England; but is known to breed in Massachusetts occasionally.

OUR second example of the Tyrant Birds is the curious FORK-TAILED FLY-CATCHER.

This remarkable species is an inhabitant of tropical America, and is rather frequently found in Guiana, where it is popularly, but erroneously, called the Widow Bird, that appellation belonging by right to one of the finches. Sometimes the bird is quite solitary, but at other times it assembles in little flocks on the branches, and from thence darts on the passing insects. It is also fond of frequenting the low flooded lands, and of perching upon the tufts of rank herbage that appear above the water, opening and shutting its long tail like a pair of shears. Its food is mostly of an insect character, but it will feed upon various fruits and berries.

It is quick and agile of wing, and by means of its long and firmly set tail is enabled to make many sharp turns in the air, an accomplishment which is needful for the purpose of overtaking the large winged insects on which it loves to feed; and while engaged in these aerial manœuvres it constantly spreads or closes its tail. Except immediately after moulting, the long scissor-like feathers of the tail are seldom in a perfect state, as the bird is very vivacious in its movements, and in its quick glancing flight among the branches is apt to fray the beautiful plumes against the boughs, and often rubs the webs entirely away, leaving the long shafts protruding, clothed only with little ragged fragments of web. The Fork-tailed Fly-catcher is quite as brave a bird as the preceding species, and is frequently seen to attack and defeat birds that are far superior in size and bodily strength, but inferior in dashing courage.

The coloring of this bird is briefly as follows: The top of the head is velvety black when the bird is at rest; but when it becomes excited, it raises the feathers of its head into a kind of crest, and displays a bright orange spot, caused by the orange hue which tinges the basal parts of each feather. The neck, back, and upper parts of the body are dark gray, deepening gradually towards the tail, which is jetty black with the exception of the white outer web of the exterior quill-feathers. The under portions of the bird are white. The total length of this bird is about fourteen inches, of which the tail occupies ten, so that the dimensions of the bird itself are really small.

#### TYPICAL FLY-CATCHERS.

WE now arrive at the typical Fly-catchers, named, in allusion to their insect-eating habits, the Muscipine birds.

This group includes many curious and interesting species, one of the most remarkable being the WHITE-SHAFTED FAN-TAIL of Australia. Beyond elegance of form and pleasing arrangement of rather sombre coloring, this bird possesses no great external attractions; but for the singular form of its nest, and the eccentricity of some of its habits, it is well worthy

a short memoir. It is a native of the southern and western portions of Australia as well as of Van Diemen's Land, and seems to be a permanent resident, merely shifting its quarters to different portions of the same country according to the season of year. It is by no means a gregarious bird, being seldom seen associated with any other companions except its mate.

In its habits it is brisk, cheerful, and lively, mounting high into the air with a few rapid strokes of the wings, and then descending upon some convenient bank in a headlong, reckless style, after turning completely over in the air after the fashion of the tumbler pigeons. While descending it spreads its wings and tail widely, the latter organ being so broad as to resemble a feather fan. It is daring and confiding in its nature, permitting the close approach of human beings, haunting the neighborhood of human habitations, and even boldly entering houses in chase of flies and other insects. Its song is not powerful or varied, but is full and pleasing, consisting of a soft and sweet twittering sound.

During the breeding season it becomes suddenly shy, wary, and restless, and should it perceive an enemy in too close proximity to its nest, puts in practice a series of rather transparent wiles in order to induce the intruder on its domestic joys to leave the vicinity. For this purpose it feigns lameness, and flutters before the supposed foe in a manner that is intended to induce a belief in its easy capture, and to lure him from the cherished spot where all its loves and hopes are concentrated.

The nest is of a most remarkable shape, being notable for a long and apparently useless tail that hangs far below the branch to which it is attached, and which, owing to its narrow dimensions and slight weight, can be of no service in preserving the balance of the structure. I would offer a suggestion that this singular form may have reference to the electrical conditions of the atmosphere, and serve as a conductor whereby the superabundant electricity is carried off from the eggs or young birds, which are placed in an open and undefended nest, and conveyed harmlessly to the ground. The materials of which the nest is made are the inner bark of the gum-tree, mixed with moss and the down of the tree-fern, and woven together with spiders' webs.

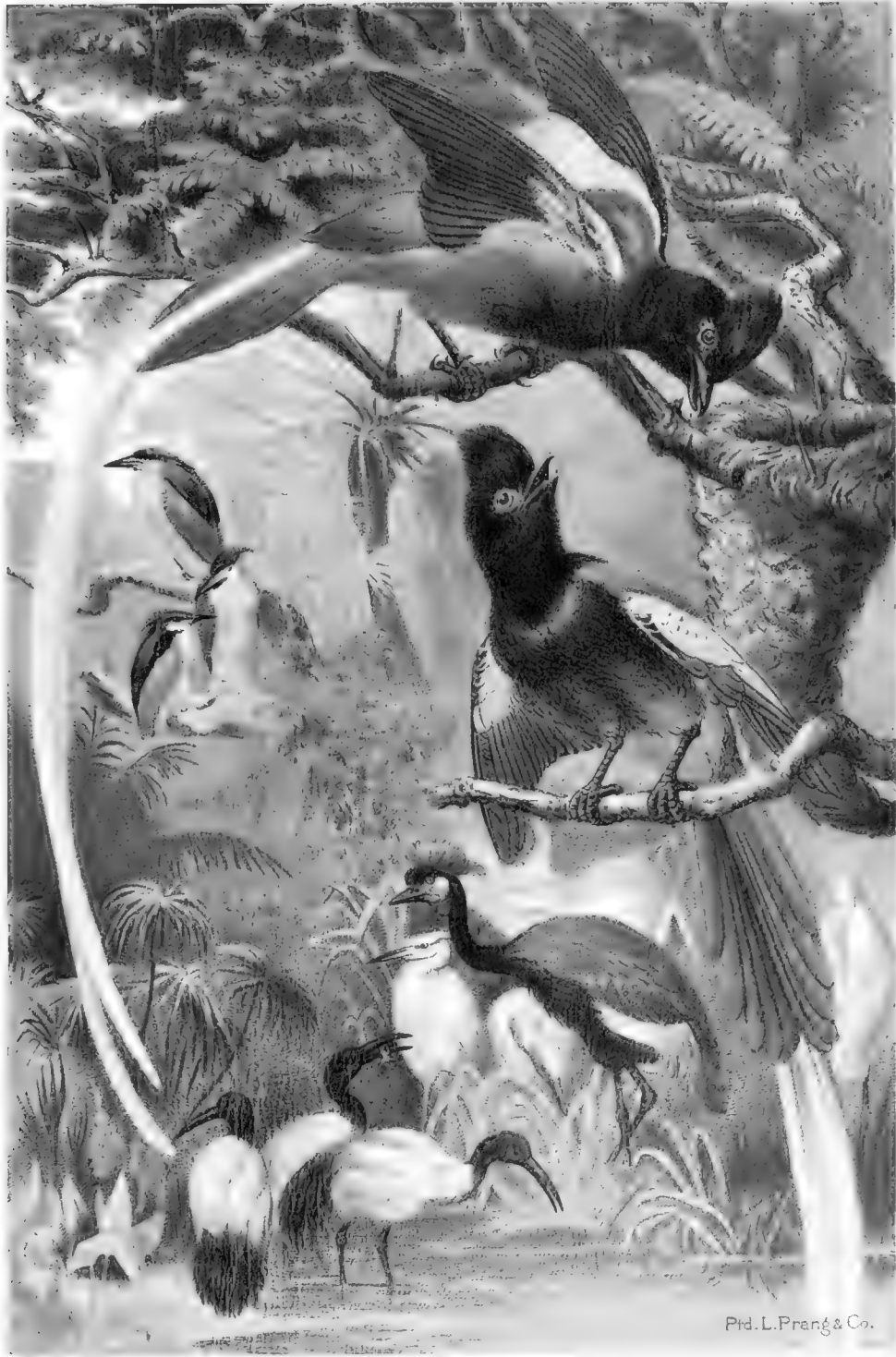
The position of the nest is invariably at a low elevation, and it is found either hanging from a branch near the water at no great height from its surface, or suspended from some low branch in a forest. The eggs are two in number, and their color is grayish-white, covered with olive-brown blotches. There are generally two broods in the year, and a third brood is sometimes known to be successfully reared.

In its coloring the White-shafted Fan-tail is a dusky olive-black above, and there is a white dash above the eye, and another curved white streak below the eye. The throat, the ends of the wing-coverts, the edges of the secondaries, together with the outer webs, the tips and the shafts of the tail-feathers, are pure white, with the exception of the two central quill-feathers of the tail, which retain their dusky hue. The total length of this bird is five or six inches. Its generic name *Rhipidura* is of Greek origin, signifying "fan-tail," and is therefore applied to this and other species of the same genus, whose tails are capable of being spread in a fan-like fashion; the name *albiscapa* refers to the white shafts of the tail-feathers, and is therefore only applied to this particular species.

THE most elegant and striking of all the Fly-catchers is undoubtedly the bird which is figured in the colored illustration.

THE PARADISE FLY-CATCHER is an Asiatic bird, being found spread over the greater portion of India, where it is far from uncommon. It is generally found in thick clusters of tall bamboos, and is in the habit of frequenting gardens, shrubberies, and plantations in search of its prey. Its mode of feeding is rather variable. Generally it perches upon some lofty branch, and when it sees an insect passing within easy reach, makes a sudden swoop upon it, catches its prey with a hard snap of the beak, which can be heard at some distance, and returns to its post in readiness for another swoop. Sometimes, however, it searches upon the branches for the various insects that are found crawling on the bark or hidden beneath its irregularities, and picks them off with great certainty of aim. According to Colonel Sykes, it has even been known to alight on the ground and to seek its food upon the soil.





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PARADISE FLYCATCHERS.



It is a most restless bird, ever on the move, flitting from branch to branch, or darting after its winged prey with ceaseless activity. Like many predaceous creatures, it is rather solitary in its habits, being generally seen singly or in pairs, or at all events in no greater numbers than may be accounted for by the presence of the two parents and their young.

There are several species closely allied to each other, which are found both in India and Africa; and even the present species was once supposed to be separated into three, the adult male, the female, and the young being so different in form and color, that each was set down as a distinct species. It is now known that the long-tailed birds, of whatever color they may be, are the adults of either sex, while the comparatively short-tailed bird is the young male or female. When these distinctions are once known, it is very easy to discriminate between the birds, the white long-tailed bird being always the adult male, the reddish buff long-tailed bird the adult female, and the short-tailed bird the young male or female, as the case may be.

The coloring of this species is remarkably bold and pleasing, and may be briefly described as follows.

The head and crest of the male are bright steely-green, and the whole of the upper surface is pure white, curiously streaked with a narrow black line down the centre of each feather. The primary quill-feathers of the wings are jetty black with a narrow edge of white, and the secondaries are also black, edged with white on both webs. The beautiful tail is more than double the length of the body, as it measures thirteen or fourteen inches in length, while the bird itself is only some six inches long. The color of the tail-feathers is pure white, with black shafts, except the two central feathers, where the black color of the shaft only extends half their length. The whole of the under surface is white. The adult female has the head and neck-feathers steely-green, as in the male, but not of quite so brilliant a hue. The back and tail are ruddy chestnut, the throat, breast, and nape of the neck are dark gray, and the abdomen and remainder of the under parts are white. The young bird is colored like the female, but the white of the abdomen is tinged with buff.

On account of the peculiar shape of this species, it is sometimes called the Rocket Bird.

THE PHOEBE, or PEWEE (*Sayornis fuscus*) is a notable favorite during the cold months in New England, arriving from the south in March, frequently before the snow is gone. Wilson says: "The notes of the Pewee, like those of the bluebird, are pleasing, not from any melody they contain, but from the ideas of spring and returning verdure—with all the sweets of this lovely season—which are associated with his simple but lively ditty."

WOOD PEWEE (*Contopus virens*). This is a common summer inhabitant of New England, usually choosing the solitude of the deep forests for its abode. The nest of this bird is always a wondrous affair, and very beautiful. There is a peculiar symmetry and cup-like finish to this nest, which is only equalled by that of the humming-bird.

Several interesting species have been found in the Northern States and on the Great Plains. Since the days of Audubon and Wilson many species have been discovered.

THE FORK-TAILED FLY-CATCHER (*Milvulus tyrannus*) is occasionally found in the States as far north as Pennsylvania.

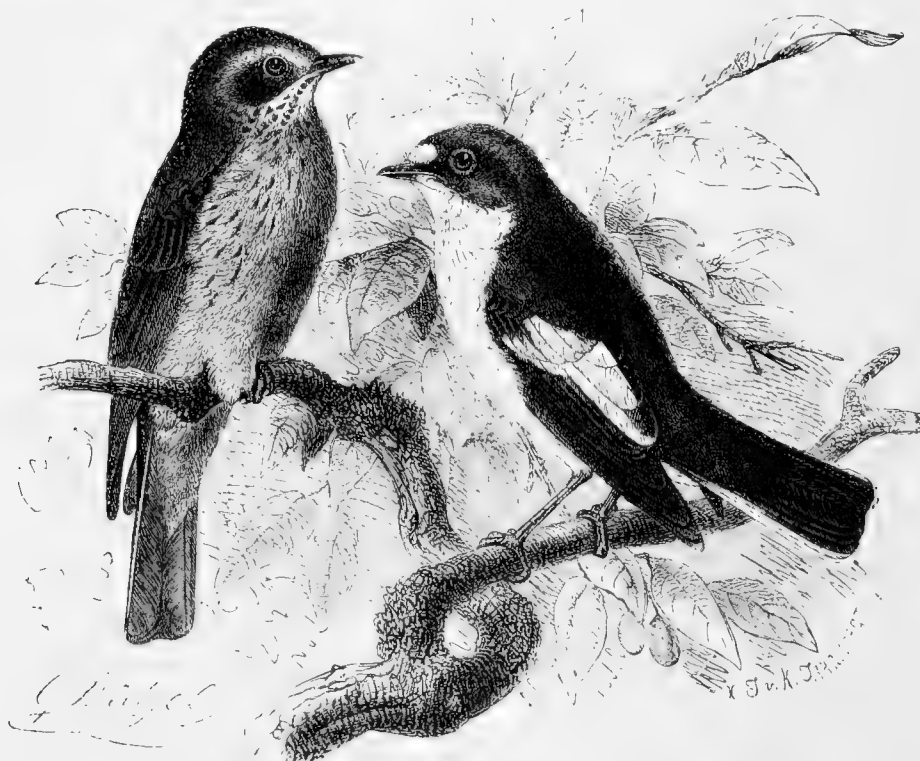
THE SCISSOR-TAIL (*Milvulus forficatus*) is another equally fine bird, having nearly as long tail-feathers. It inhabits Mexico and Texas. It derives one of its trivial names from the fact that it opens and shuts its tail as a scissors works. Its dimensions are similar to the preceding—thirteen inches in length.

EUROPE possesses some examples of the Fly-catchers, the two birds represented in the illustration being familiar to every one who has noticed the manners and customs of native birds.

The SPOTTED FLY-CATCHER is by far the more common of the two species, and has

received several local names in allusion to its habits, the titles WALL BIRD and BEAM BIRD being those by which it is most frequently designated. It is one of the migrating birds, arriving in northern countries at a rather late season, being seldom seen before the middle or even towards the end of May. The reason for this late arrival is probably that, if the bird were to make an earlier appearance, the flying insects on which it feeds would not be hatched in sufficient numbers to insure a proper supply of food for itself and young. It has a rather wide range of locality, having been observed in different parts of Europe, and extending its flight even to Southern Africa.

This bird is fond of haunting parks, gardens, meadows, and shrubberies, always choosing those spots where flies are most common, and attaching itself to the same perch for many



SPOTTED and PIED FLY-CATCHER.—*Muscicapa grisola* and *atricapilla*.

days in succession. When the Fly-catcher inhabits any place where it has been accustomed to live undisturbed, it is a remarkably trustful bird, and permits the near approach of man, even availing itself of his assistance.

I well remember a curious instance of this exceeding tameness on the part of one of these birds. In the grounds of a large estate I was sitting in a gig, waiting for a friend, and as the sun was shining very powerfully, I moved the vehicle under the shade of a tree. On one of the lower branches a Fly-catcher was sitting, watching the flies, and occasionally fluttering in chase of an insect, and then returning to its post in true Fly-catcher fashion. After watching the bird for some little time, I struck with my whip at a clover-blossom, thereby starting a number of flies, which rose into the air. To my surprise, the bird instantly left the branch, darted among the flies, captured one of them, and returned to its perch. I again drove some flies into the air with the whip, and again the bird came and snapped them up within stroke of the lash. This proceeding was continued until my friend rejoined me and we drove away, leaving the bird in sole possession.

The Spotted Fly-catcher builds a very neatly made nest, and is in the habit of fixing its home in the most curious and unsuspected localities. The hinge of a door has on more than one occasion been selected for the purpose, and in one instance the nest retained its position although the door was repeatedly opened and closed, until a more severe shock than ordinary shook

the eggs out of the nest and broke them. It is fond of selecting some human habitation for the locality in which it builds its nest, and its titles of Beam Bird and Wall Bird have been given to it because it is in the habit of making its home on beams or the holes of walls. The branches of a pear, apricot, vine, or honeysuckle are favorite resorts of the Spotted Fly-catcher, when the tree has been trained against a wall. The bird seems to be in the habit of returning to the same spot year after year; and as in one case the same locality was occupied for a series of twenty consecutive years, it is most probable that the young may have succeeded to the domains of their parents.

The nest is generally round and cup-shaped, and is made of fine grasses, moss, roots, hair, and feathers, the harder materials forming the walls of the nest, and the softer being employed as lining.

I once watched one of these birds in the act of building her nest, and was greatly interested by the manner in which the business was conducted. First she arranged a rather large bundle of fine dry grass in the thick fork of some branches, and having pecked it about for some little time as if to shake it up regularly, she sat in the middle of it, and by a rapid movement of her wings spun round and round like a top, so as to produce a shallow, cup-like hollow. She then fetched some more grasses, and after arranging them partly around the edge and partly on the bottom, repeated the spinning process. A few hairs and some moss were then stuck about the nest, and woven in very neatly, the hairs and some slender vegetable fibres being the threads, so to speak, with which the moss was fastened to the nest.

In working out the long hairs and grasses, she generally moved backwards, laying them with her bill, and continually walking round the nest, a circumstance which has also been noted by Mr. Yarrell. I cannot say, however, whether, as is related by that writer, the male brings all the materials, nor can I give any further personal description of the architectural powers of the bird, as when the nest had reached the stage which has been described, I was forced to return home, and on my next visit the nest was finished and the mother bird sitting in it. I was close to the bird during her labors, being sheltered from observation by a thick bush and the trunk of an ivy-covered tree, and could even see the color of the bright, glancing eyes, and note the self-satisfied ruffle of her feathers whenever she had made a stroke to her satisfaction.

The eggs of the Spotted Fly-catcher are four or five in number, and their color is a very pale bluish-white, spotted with ruddy speckles. As the nest is made at so late a period of the year, being but just begun when some birds have hatched their first brood, there is not often more than a single family in the course of the season. Sometimes, however, it has been known to hatch and rear a second brood in safety. The young are seldom hatched until the tenth or twelfth of June, and they seem to follow their parents longer than is the case with most birds.

The food of the Spotted Fly-catcher is almost, if not exclusively, composed of insects, mostly flies and other winged members of the insect world. It seldom descends to the ground for the purpose of procuring its prey, nor does it seem to pick caterpillars off the leaves and branches, but, standing on some chosen perch, it darts at the passing insects, and returns to the same spot. Fruit seems to form no part of the Fly-catcher's food, although it has often been observed on the fruit-trees, having in all probability been attracted to the tree by the many winged insects which feed on fruit.

The general color of the Spotted Fly-catcher is a delicate brown on the upper parts of the body, the quill-feathers of the wings and tail being, as is usually the case, of a blacker hue than the feathers of the back. There are a few dark spots on the top of the head, and the tertial feathers of the wings are edged with light brown. The breast is white, with a patch of very light dull brown across the upper portion, and both the chin and breast are marked with dark-brown longitudinal streaks. Upon the sides and flanks the dull white deepens into a yellowish brown. The total length of this bird is about five inches and a half. When young, the plumage is largely spotted with buff and brown of different tints. This species has no song, but only a few low twittering notes.

THE other species of European Fly-catchers is much more rare than the bird just described, and may easily be distinguished from it by the peculiarity of plumage from which it derives

its popular title. The **PIED FLY-CATCHER** is known to be a frequenter of many parts of Europe, even visiting Norway and Sweden in the summer months, while on the coasts of the Mediterranean it is very plentiful. It is a migratory bird, generally arriving in northern countries about the middle of April, and leaving those for a warmer climate in September.

The habits of this bird, its mode of flight, and fly-devouring propensities, closely resemble those of the preceding species, from which, however, it differs greatly in the locality of its nest and the number of the eggs. Instead of placing a simply-constructed nest upon a branch or other convenient spot, the Pied Fly-catcher always chooses a hollow in some decaying tree for its home, and there deposits no less than seven or eight eggs.

In one instance noticed by Mr. Yarrell, the eggs were disposed in a very curious manner. "A pair had a nest in the identical hole where this species had bred for four successive years. On the 16th of May, this nest contained eight eggs, arranged in the following manner: one lay at the bottom, and the remainder were all severally placed perpendicularly round the sides of the nest with the smaller end resting upon it, the effect of which was exceedingly beautiful." The author of this well-observed note further remarks that the eggs from different nests are found to vary greatly in size. The nest itself is made of dried leaves, moss, and hair, and is rather loosely built, and the young make their appearance about the middle of June.

The coloring of this bird is as follows: In the adult male, the top of the head, back of the neck, back, and wings are dark blackish-brown, with the exception of a white patch upon the forehead, and a broad stripe of white upon the tertiary and greater wing-coverts. The tail is black except some bold white marks on some of the outer feathers, and the whole of the under surface is pure white. The female is of a delicate brown on the upper parts of the body, and those portions which in the male are pure white, are in the female of a dull whitish-gray. In dimensions the bird is not equal to the spotted Fly-catcher, barely exceeding five inches in total length.

THE singular and beautiful bird which is known by the name of **KING TODY**, or **ROYAL GREAT CREST**, is a native of Brazil, and may challenge competition with many of the fly-catchers for elegance of form and beauty of coloring.

It is a very rare bird, and to all appearance but little known in its native land. This species is chiefly remarkable for its splendid crest, which is capable of being lowered upon the neck, or raised almost perpendicularly, in which latter position it assumes a spreading and rounded form, like an open fan. The feathers of the crest are long and slender, and spoon-shaped at their extremities. Each feather is bright chestnut-red for the greater part of its length, a narrow stripe of rich orange succeeds, and the tip is velvet-black, encircled by a band of steel-blue. As may be supposed, the effect of its spread crest is remarkably fine and striking. The upper parts of the body are dark chestnut-brown, rather deeper on the quill-feathers of the wings. The throat, chest, and abdomen are pale fawn, warming towards chestnut on the central line. The total length of this bird is six inches and a half.

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## CHATTERERS.

THE family of the **AMPELIDÆ**, or Chatterers, is one of considerable size, and includes some very beautiful and interesting birds. In all these species the beak is rather broad and short, curved on the upper mandible, and well notched at the tip. The claws are sharp and hooked, and are grooved underneath. The Chatterers are found in all the warm portions of the world, and even northern countries are sometimes favored by a visit from the typical species, the **Waxen Chatterer**. They are divided into several groups or sub-families, the first

of which is the *Pachycephalinæ*, or Thick-heads, so called from the heavy make and great comparative size of their heads.

Of this group we find an excellent example in the well-known DIAMOND BIRD of Australia.

This pretty little creature inhabits Van Diemen's Land and the whole of the southern portions of Australia, and is generally found upon trees and bushes, skipping about the branches with the greatest velocity, and peering into every crevice after the insects on which it feeds. It possesses great activity of limb and strength of claw, and is able to traverse the boughs while hanging suspended beneath them by its feet. It is not restricted to any particular tree, but may be seen on the hard scrubby bushes as often as upon the lofty trees. The voice of the Diamond Bird is rather harsh and piping, and consists of two notes constantly repeated, from which circumstance the natives call it by the name of "We-deep, we-deep."

The most remarkable peculiarity in this bird is its nest and the position which it chooses for its home. Instead of placing its nest among the branches, or even in the hollow of one of the innumerable decaying trees that abound in its native country, the Diamond Bird makes a deep burrow in the face of some bank, usually on the margin of a stream, and builds its nest at the extremity of the hole. The tunnel slopes slightly upwards, and is about two or three feet in length, the nest being placed in a chamber at its extremity. Contrary to the usual custom of burrowing birds, the Diamond Bird builds a most neat and elaborately constructed nest in its burrow, the marvel being increased by the evident difficulty of working in the dark. The structure is almost globular in form, and is entered by means of a hole left in the side. The materials of which it is composed are principally strips of the inner gun-tree bark, and it is lined with finer portions of the same substance.

The Diamond Bird is a pretty little creature, and decorated with most vivacious coloring. The crown of the head, the wings and the tail are black, speckled with pure white, each feather having a snowy white spot at its extremity. A white streak begins at the nostrils, crosses the face, and passes over each eye. The back is curiously diversified with several harmonizing tints, each feather being gray at its base, and having at its extremity a triangular spot of fawn edged with black. The upper tail-coverts are ruddy brown, becoming redder towards the tail; the chin, throat, and chest are bright golden-orange, and the abdomen is tawny. The female has a browner head, and no golden-orange streak on the breast. The bird is about as large as a wren.

### THE MANAKINS.

THE Manakins, or *Piprinæ*, form a moderately large group of birds, many of which are of very beautiful and curious plumage. With very few exceptions they are inhabitants of America, and are found only in the hottest portions of the tropical regions of that vast country. They feed indiscriminately on animal and vegetable substances, are very active in their movements, and frequent the hottest and moistest forests, where vegetation grows most luxuriantly, as in such situations they find the greatest abundance of food.

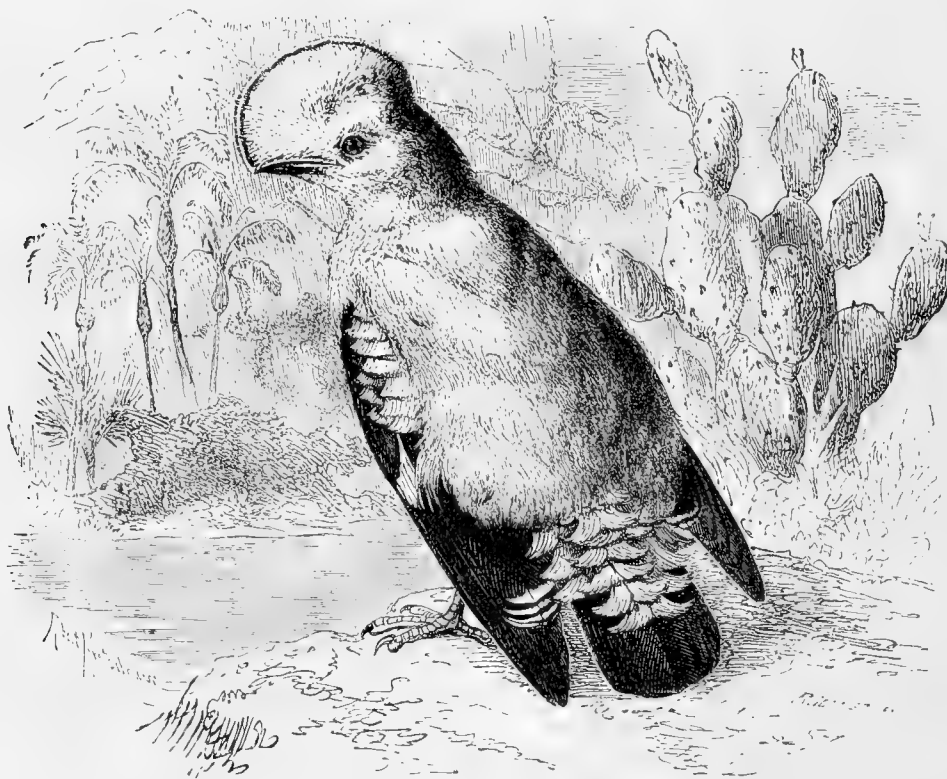
One very beautiful species is the GOLDEN-WINGED MANAKIN of America. This bird is always to be found on the skirts of forests, where it chooses the hot and marshy grounds that are often formed in such localities, and there plies its busy search for food, unharmed by the noxious and miasmatic exhalations of the decaying vegetation that are continually steaming upwards, whilst the burning rays of the tropical sun convert the moisture into vapor, and cover the earth with a heavy, warm and poisonous mist. The bird is remarkably vivacious in its movements, and may often be seen on the ground, peering and feeding in every direction, or perched in large flocks on the top of some lofty tree.

The Golden-winged Manakin is a very pretty bird, its plumage being brightly mottled with black, yellow, and orange, which tints are arranged in a manner both bold and soft. The wings are remarkable for the bright yellow feathers from which the bird derives its popular

name, and the crown of the head is decorated with a beautiful series of gradually deepening plumes, of a golden yellow at the base of the bill and on the forehead, and warming into a rich ruddy orange towards the back of the neck, something like the crown of the fire-crested Regulus.

THE largest and the most showy of all the Manakins is the COCK OF THE ROCK, so termed on account of a slight external resemblance which it bears to the gallinaceous form.

It is a native of Southern America and Guinea, and, as it is a solitary and extremely retiring bird, is but seldom seen except by those who go in special search of it. This bird is remarkable, not only for the bright orange-colored plumage with which its whole body is covered, but for its beautiful crest, which extends over the head like the plume of an ancient helmet. It generally frequents the banks of rocky streams and deep, sombre ravines, where it traverses the ground with much rapidity, by means of its powerful and well-developed legs.



COCK OF THE ROCK.—*Rupicola crocea*.

As it is a solitary and very wary bird, it is seldom shot by white men, the greater number of existing specimens having been procured by means of the poisoned arrow thrown through the deadly sumpitan, or blow-pipe, of the Macoushi Indians. As the skin commands a high price in the market, the Indians kill great numbers of the birds, and are gradually thinning their ranks.

During the daytime the Cock of the Rock retires into its dark hiding-place among the rocks, and only comes out to feed before sunrise and just after sunset. Not only is it never found in company with other birds, but it does not even seem to associate with those of its own kind. The nest of this species is of a very slight description, and is composed of little sticks, splinters of wood, and dry grasses, laid loosely in a hole of some rock, and containing two white eggs.

The color of the Cock of the Rock is remarkably beautiful, and consists of a rich orange tint, which dyes the whole of the plumage with the exception of the quill-feathers of the wings, which are of a sooty-black hue, and those of the tail, which are brown, tipped with



yellow. The feathers of the head stand erect in a double row, with their extremities uniting in a line corresponding with the central line of the head, and consequently form a peculiar fan-like crest, which overhangs the forehead and extends quite to the back of the head. The tips of the crest-feathers are tinged with brown and yellow. Upon the wing-coverts and the upper tail-coverts, the feathers are modified into flowing plumes, which droop in a very graceful manner over the firmer feathers of the tail and sides. In size the Cock of the Rock about equals a common pigeon.

The female bird is not nearly so beautiful as her mate, being of a yellowish-brown color, and having only a small and inconspicuous crest.

ANOTHER species of Manakin which belongs to the same genus is the PERUVIAN COCK OF THE ROCK (*Rupicola peruviana*), a bird which is possessed of considerable beauty, though it is not quite so splendid as the previous species. Like that bird, its plumage is of a bright orange color, but its crest wants the curious fan-like form which is so conspicuous in the Cock of the Rock, and the quill and tail-feathers are jetty-black, and the wing-coverts are ashen-gray. Moreover, the feathers of the wing-coverts and upper tail-coverts are not so loose and flowing, and its tail is longer in proportion.

THERE is one species of Manakin which does not, so far as is known, inhabit America, but is found in Singapore and the interior of Sumatra. This is the GREEN CALYPTOMENA (*Calyptomena viridis*), a very beautiful, though not very large bird. Like the Cock of the Rock, it is extremely shy and solitary in its habits, but instead of retiring into the deep recesses of rocky ground, it shrouds itself among the heavy verdure of the forest trees, where its bright green feathers harmonize so well with the foliage, that it is hardly perceptible even to a practised eye. The food of this bird seems to be entirely of a vegetable character.

This bird possesses a fine and well-marked crest, which curves so boldly that it nearly hides the short, wide, and hooked beak under its feathers. According to Sir S. Raffles, the coloring of this species is as follows: "The general color of this bird is a brilliant emerald-green. . . . A little above and before the eyes, the feathers are of a deep velvet-black at their base, and only tipped with green, but crossed in the coverts by three velvet-black bands. The primary feathers, as well as the whole under side of the wings, are dusky, approaching to black, with the exception of the outer margins of some, which are edged with green. The tail is short, rounded, and composed of ten feathers, which are green above and bluish-black below. The whole of the under parts are green; this color is brightest on the sides of the neck and round the eyes."

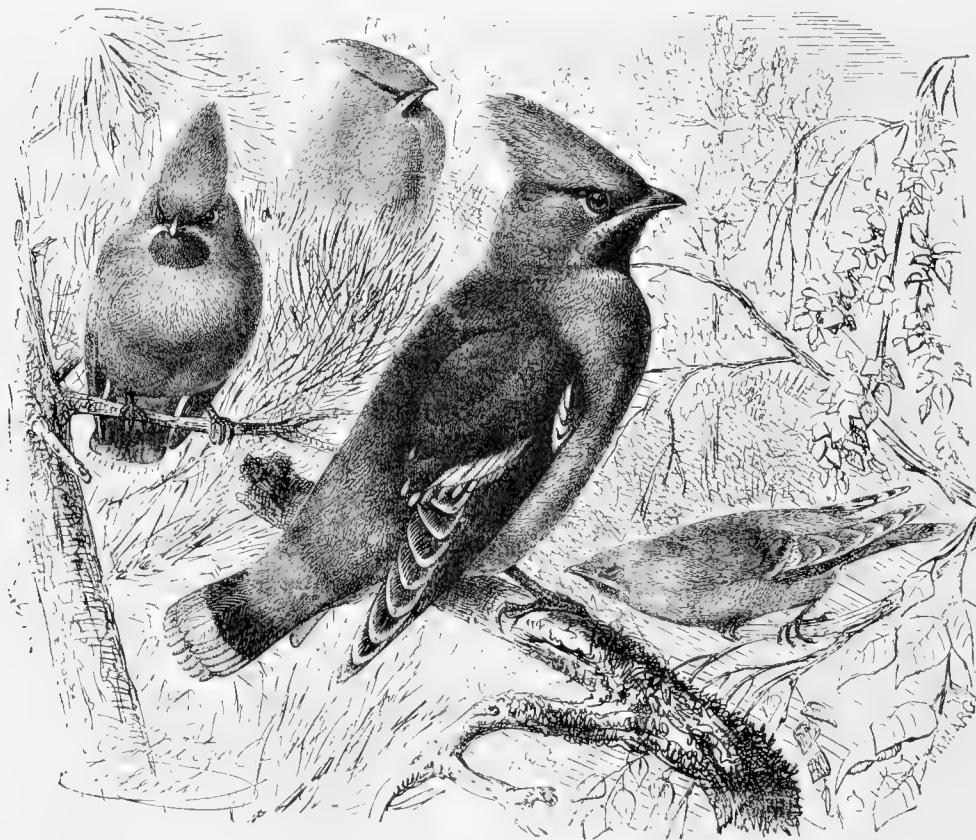
The total length of this species is about six inches, and the bird resembles a thrush in the general contour of its body.

A SMALL but interesting group of birds has been designated by the name of Ampelinæ, or Chatterers, in allusion to the loquacity for which some of the species are remarkable. They all have a wide mouth, opening nearly as far as the eyes, but without the bristly appendages which so often accompany a large extent of gape. Several of the species are celebrated for the singular hairy appendage to the secondary and tertiary quill-feathers of the wings, which closely resemble spots of red sealing-wax, and have given rise to the title of Waxen, which has been almost invariably applied to these birds.

ONE well-known species is the WAXEN CHATTERER (*Ampelis garrulus*). It is also known by the name of the BOHEMIAN CHATTERER, the latter name being singularly inappropriate, as the bird is quite rare in Bohemia.

It is a very gregarious bird, assembling in very large flocks, and congregating so closely together, that great numbers have been killed at a single discharge of a gun. Of this curious bird, the following interesting particulars are told: "For the last month there have been, and indeed still are, immense flocks of Wax-wing Chatterers quite close to the house. They are not at all shy, allowing a person to approach easily within shot. They come into all the

gardens round by thousands, in quest of the berries of a tree, which I believe is the mountain ash, having been driven south, as I suppose, either on account of the cold or in search of food. Some of the flocks contained several thousands, but are now much diminished in numbers, on account of some having gone southwards, and others been killed. They make a great noise when sitting together, which they do in great numbers, making a tree look quite black with them. On one occasion I killed twenty at one shot, at another eighteen, and at another seventeen. One of these birds I shot had the wax at the tip of the tail, as well as on the wings." This curious divergence from the usual formation has been noticed in the cedar bird (an American species of the same genus), by Wilson, as will be mentioned in the account of that bird. Perhaps the waxen appendage of the tail may rather be termed a full development of the original idea, than a divergence from the usual form.



BOHEMIAN WAX-WING, OR WAXEN CHATTERER.—*Ampeles garrulus*.

The long, flat, scarlet appendages to the wings, and, as we have seen, to the tail also, are usually confined to the secondaries and tertiaries, at whose extremities they dangle as if they had been formed separately, and fastened to the feathers as an after-thought. Indeed, they so precisely resemble red sealing-wax, that any one on seeing the bird for the first time would probably suppose that a trick had been played upon him by some one who desired to tax his credulity to a very great extent. The full number of these appendages is eight, four on the secondaries and the same number on the tertiaries, but they vary according to the age of the bird, the secondaries keeping their full complement, and the tertiaries having from one to four, according to age and development. None of the wax-like appendages are developed until the second year.

Although the migratory habits of this bird are well known, and many of the localities which it frequents have been recorded by various writers, no one seems to have any certain information as to its true home, or the country wherein it breeds, although it is so numerous a species in its own locality that its hiding-places could hardly have escaped notice had they occurred within the ordinary limits of scientific observation.

Some authors place its residence in Central Asia, upon the elevated table-land of that region, others think that it builds in Tartary, others place its home in the eastern parts of Northern Europe, others in the Arctic regions, while Dr. Richardson believes that it may be traced to America: "The mountainous nature of the country skirting the Northern Pacific Ocean being congenial to the habits of this species, it is probably more generally diffused in New Caledonia and the Russian-American territories, than to the westward of the Rocky Mountain chain. It appears in flocks at Great Bear Lake about the twenty-fifth of May, when the spring thaw has exposed the berries of the Alpine arbutus, marsh vaccinium, etc., that have been frozen and covered during winter. It stays only for a few days, and none of the Indians of that quarter, with whom I conversed, had seen its nest; but I have reason to believe that it retires in the breeding season to the rugged and secluded mountain-limestone district in the sixty-seventh and sixty-eighth parallels, where it feeds on the fruit of the common juniper which abounds in those places."

To the foregoing the author of this work has to remark that the bird is common in the eastern parts of North America, where it is called Northern Wax-wing.

To the northern European countries it only comes in the winter months, although there has been an example of its appearance as early as August.

In its plumage the Bohemian Wax-wing is a very pretty and striking bird, being as notable for the silken softness of its feathers, as for its pleasingly blended colors and the remarkable appendage from which it derives its popular name. The coloring of the bird is very varied, but may briefly be described as follows: The top of the head and crest are a light soft brown, warming into ruddy chestnut on the forehead. A well-defined band of black passes over the upper base of the beak, and runs round the back of the head, enveloping the eyes on each side, and there is a patch of the same jetty hue on the chin. The general color of the bird is gray-brown, the primary and secondary feathers of the wings and tail are black, tipped with yellow, the primary wing-coverts are tipped with white, and the tertiaries are purplish-brown, also tipped with white. The under surface of the bird is sober gray, and the under tail-coverts are rich ruddy brown. The length of the Waxen Chatterer is about eight inches.

The flesh of this bird is held in great estimation in the countries where it appears in greatest numbers, and in Norway it is regularly killed and exposed for sale at the average price of one penny.

A CLOSELY allied species is found in America, where it has been taken for a variety of the preceding species, but is clearly distinct from that bird. On account of its fondness for cedar berries, it goes by the popular name of the CEDAR BIRD, OR CHATTERER, the latter name being not at all appropriate to this species, as it is one of the most silent of birds, not even raising its voice in the season of love.

This bird is found in different parts of America, migrating to and fro according to the season of year. Wilson tells us that in the months of July and August it associates together in great flocks, and retires to the hilly parts of the Blue Mountains for the purpose of feeding on the whortleberries which grow in those localities so plentifully that the mountains are covered with them for miles. In October they descend to the lower parts of the country, and there feed on various berries, especially those of the red cedar, which they devour so greedily that no less than fifteen cedar berries have been found in the throat of a single bird. They also eat the fruit of the persimmon, cherries, and many other fruits, and aid greatly in the vegetation of the country by transporting to different localities the seeds of the plants on which they subsist.

Unlike the Waxen Chatterer, the Cedar Bird carries with it no mystery respecting its dwelling-place, but openly builds in the month of June upon various trees, sometimes choosing the cedar, and at other times fixing on different orchard trees.

Wilson makes the following remarks upon the nest and general habits of the bird during the breeding season: "The nest is large for the size of the bird, fixed in the forked or horizontal branch of an apple-tree, ten or twelve feet from the ground; outwardly and at bottom is laid a mass of coarse, dry, stalks of grass, and the inside is lined wholly with very

fine stalks of the same material. The eggs are three or four, of a dingy bluish-white, thick at the great end, tapering suddenly, and becoming very narrow at the other; marked with small roundish spots of black of various sizes and shades, and the great end is of a pale dull purple tinge, marked likewise with various shades of purple and black. About the last week in June the young are hatched, and are at first fed on insects and their larvæ, but as they advance in growth, on berries of various kinds. These facts I have myself been an eye-witness to.

“The female, if disturbed, darts from the nest in alarm to a considerable distance; no notes of wailing or lamentation are heard from either parent, nor are they ever seen, notwithstanding you are in the tree examining the nest and young. These nests are less frequently found than many others, owing not only to the comparatively few numbers of the bird, but to the remarkable muteness of the species. The season of love, which makes almost every other small bird musical, has no such effect on them, for they continue at that interesting period as silent as before.”

Like the waxen Chatterer, the Cedar Bird is held in great estimation as an article of food; and as in the autumn and end of summer it becomes very fat in consequence of the enormous amount of berries and other food which it consumes, it is in great requisition in the markets, being sold in large numbers and for a very small price. Even as early as May the Cedar Bird begins its depredations on the cherries, always choosing the best and ripest fruit, and continues its robberies, undisturbed by scarecrows or any other means except the loaded gun. The Cedar Bird does not limit itself to fruits and berries, but also feeds largely on insects, chasing and devouring flies and other winged insects in a manner very similar to that of the fly-catchers, but not exhibiting the airy liveliness and quick vivacity of those birds.

The general color of the Cedar Bird is yellowish-brown, the upper parts of the body being fawn-colored, rather darker on the head, which is surrounded with a long and pointed crest, which can be raised almost perpendicularly from the head. The chin is black, the breast and abdomen yellow, and the under tail-coverts white. The wings are deep slaty-blue, and the upper tail-coverts are slate-blue, deepening into black, which also extends over the greater part of the tail. The extremities of the tail-feathers are rich yellow. A rather broad line of black crosses the forehead, and passes round the head, enveloping the eyes in its course. The secondary feathers of the wings are adorned with wax-like appendages resembling those of the Bohemian chatterer, and their number is variable, sometimes being only four or five, and sometimes as many as nine. Wilson supposes that their object is to guard the tips of the feathers from being worn away, but this conjecture does not seem to carry much weight with it. The appendages are nothing more than horny expansions of the shafts. As some female birds are without these wax-like ornaments, it was once supposed that they only belonged to the male bird; but it is now ascertained that they are found in both sexes alike. On several occasions Wilson found one of the tail-feathers decorated with a waxen tip similar to those of the wing. The color of the female is similar to that of the male, but the tints are not so brilliant. This bird is much smaller than the European species, being only six inches and a half in length, and very slenderly built.

The Cedar Bird (*Ampelis cedrorum*) is a common bird in New England during the summer, and is found in all parts of North America. It is unpopular here as well as in Europe on account of its robbing of cherry-trees. The term Cherry Bird is quite commonly applied to it.

As the numbers of acknowledged species among birds amount to several thousands, it is evident that in a comprehensive work of this character it will be impossible to mention the whole of the feathered tribe, and that only those birds can be described which act as representatives of the several groups into which the division has been separated. Passing over, therefore, many remarkable species, we arrive at one which is perhaps as extraordinary a bird as any that has hitherto been figured. This is the celebrated BELL BIRD, OR CAMPANERO of America, so called on account of the singular resemblance which its note bears to the slow, solemn tolling of a church-bell.

The Bell Bird is about the size of an ordinary pigeon, and its plumage is quite white. From a pigeon it can, however, be readily distinguished, even at some distance, by the curious

horn-like structure which grows from its forehead, and rises to a height of some three inches when disturbed. This "horn" is jetty black in color, sprinkled very sparingly with little tufts of snowy-white down, and as it has a communication with the palate, has probably something to do with the bell-like sound of the voice. The song or cry of the Campanero has been admirably described by Waterton, in his well-known "Wanderings in South America":—

"His note is loud and clear, like the sound of a bell, and may be heard at the distance of three miles. In the midst of these extensive wilds, generally on the dried top of an aged mora, almost out of your reach, you see the Campanero. No sound or song from any of the winged inhabitants of the forest, not even the clearly pronounced 'Whip-poor-Will!' from the goat-sucker, causes such astonishment as the toll of the Campanero.

"With many of the feathered race, he pays the common tribute of a morning and evening song; and even when the meridian sun has shut in silence the mouths of almost the whole of animated nature, the Campanero still cheers the forest. You hear his toll, and then a pause for a minute, then another toll, and then a pause again, and then a toll, and again a pause. Then he is silent for six or eight minutes, and then another toll, and so on. Actæon would stop in mid-chase, Maria would defer her evening song, and Orpheus himself would drop his lute to listen to him, so sweet, so novel and romantic is the toll of the pretty snow-white Campanero."

The "horn" of the Bell Bird is only erect while the creature is excited and during the resonant cry, and when the bird is at rest it hangs loosely on the side of the face. It is supposed that the Bell Bird builds in Guiana, but its nest and locality of breeding are at present unknown.

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## THE CATERPILLAR-EATERS.

To the Chatterers succeed the Campephaginæ, or Caterpillar-eaters, which are nearly all found in the various countries of the Old World. As their name imports, they live chiefly upon caterpillars and other insects, preferring those that are still in the larval state, and assiduously examining each leaf and branch in search of their prey. They also eat ants, beetles, and other ground-living insects, and are quite as active in chasing them upon the earth as in their haunts among the branches. They also eat fruit and berries in the autumn.

ONE of the most remarkable birds of this group is the GREAT PERICROCOTUS, the largest of its genus.

This bird is a native of India, where it is found spread over the greater portion of that country, and on account of its splendid plumage it attracts great notice even from unscientific and casual observers. It seems to be solitary in its habits, being generally found alone or in very small societies, in all probability consisting merely of the parents and their young. It is almost exclusively an insect-feeder, eating caterpillars, flies, ants, and various kinds of the insect tribe, preferring, however, the beetles, of which it devours very great numbers. It is a suspicious and timorous bird, carefully avoiding the presence of human beings, and thus ranking as a very scarce bird, although it probably exists in considerable numbers, in its own peculiar localities.

As it is so beautiful a species, it has several times been captured and caged, but it seems to defy the powers of the tamer, pines away under confinement, and soon dies.

The sexes of the Great Pericrocotus are so different in their external appearance, that they might easily be mistaken for two distinct species. The adult male is a truly beautiful bird, and is thus colored. The ground color of the bird is the deepest imaginable steely-blue, so deep, indeed, as to appear black except in certain lights. The head, neck, back, wings, the two central tail-feathers, and the base of the remaining tail-feathers, are rich, glowing scarlet.

The bill and legs are black, and the eyes dark brown. The female, although a very pretty bird, cannot lay claim to the gorgeous coloring which decorates her mate. In her, the parts which in the male are scarlet, are bright golden-yellow, and the back of the head and the scapularies are gray. The greater coverts are olive-brown.

THIS genus contains many species, several of which are remarkable for the rich beauty of their plumage. They are gregarious, assembling in little flocks, and as they are extremely loquacious, they make a considerable noise as they sit chattering and whistling in groups upon the topmost branch of some lofty tree. In their habits they are similar to the last-mentioned bird, being insect-feeders, and preferring the beetles, or, more rigidly speaking, the coleopterous insects, to any other food. Their nest is generally placed in the branches of some tall tree, at a considerable elevation from the ground, is small in size, is composed of grasses and lichens, and generally contains about two small streaked eggs.

NEXT in order comes a group of birds, called, from the peculiar form of their tails, *Dicru-rinæ*, or Double-tailed Birds, and also known by the title of DRONGO SHRIKES. These birds are so very like the shrikes, or butcher birds, that they have often been confounded with them; and, as may be seen from the popular title of the group, have been ranked with these birds in some systems. They are not, as a rule, of large dimensions, their average size being that of a common blackbird, and many of them are remarkable for beauty of plumage and grace of form.

THE WOOD SWALLOWS are spread over a large portion of the globe; some species being found in India and the islands of the Indian seas, and others being inhabitants of Australia. Owing to their shrike-like form, and their swift flight, they have been termed Swift Shrikes by some naturalists. Several species of this genus are found in Australia, and that which is most frequently noticed is the common WOOD SWALLOW, or SORDID THRUSH. This species is common in many parts of Australia, and is migratory in its habits, arriving in and leaving Van Diemen's Land at regular intervals, and making a partial migration on the Australian continent. Some individuals, however, remain in the same country throughout the year, as they find abundance of food without the absolute need of repairing to another climate. The habits of the Wood Swallow are very curious and interesting, and are well described by Mr. Gould, in his well-known work on the Birds of Australia:—

“This Wood Swallow, besides being the commonest species of the genus, must, I think, be considered a general favorite with the Australians, not only from its singular and pleasing actions, but by its often taking up its abode and incubating near the houses, particularly such as are surrounded by paddocks and open pasture-lands skirted by large trees. It was in such situations as these, in Van Diemen's Land, at the commencement of spring, that I first had the opportunity of observing this species; it is there very numerous on all the cleared estates on the south side of the Derwent, about eight or ten being seen on a single tree, and half as many crowding one against another on the same dead branch, but never in such numbers as to deserve the appellation of flocks. Each bird appeared to act independently of the other; each, as the desire for food prompted it, sallying forth from the branch to capture a passing insect, or to soar around the tree, and return again to the same spot. On alighting, it repeatedly throws up and closes one wing at a time, and spreads its tail obliquely prior to settling.

“At other times a few were seen perched on the fence surrounding the paddock, on which they frequently descended, like starlings, in search of coleoptera and other insects.

“It is not, however, in this state of comparative quiescence that this graceful bird is seen to the best advantage; neither is it that kind of existence for which its form is especially adapted; for, although its structure is more equally suited for terrestrial, arboreal, and aerial habits than that of any other species I have examined, the form of the wing at once points out the air as its peculiar province. Here it is that, when engaged in pursuit of the insects which the serene and warm weather has enticed from their lurking-places among the foliage to sport

in higher regions, this beautiful species in its aërial flights displays its greatest beauty, while soaring above in a variety of easy positions, with its white-tipped tail widely spread.

“It was very numerous in the town of Perth until about the middle of April, when I missed it suddenly, nor did I observe it again until near the end of May, when I saw it in countless numbers flying, in company with the common swallows and martins, over a lake about ten miles north of the town; so numerous, in fact, were they, that they darkened the water as they flew over it. Its voice greatly resembles that of the common swallow in character, but is much louder.”

This Wood Swallow is remarkable for a habit which is perhaps unique among birds, and hitherto has only been observed in certain insects. A large flock of these birds will settle upon the branches of a tree, and gather together in a large cluster, precisely like bees when they swarm. Four or five birds suspend themselves to the under side of the bough, others come and cling to them, and in a short time the whole flock is hanging to the bough like a large swarm of bees. Mr. Gilbert, who first noticed this curious habit, states that he has seen the swarms as large as an ordinary bushel measure.

The nest of the Wood Swallow is cup-shaped and rather shallow, and is made of very slender twigs bound and lined with delicate fibrous roots. The locality in which the nest is placed is extremely variable, the bird seeming to be wonderfully capricious in its choice of a fit spot whereon to fix its residence. Sometimes it is placed in a low forked branch, at another time it will be buried in thick mossy foliage, while it is sometimes found fixed against the trunk of a tree, resting on some protuberance of the bark, or lodged within some suitable cavity. The eggs are about four in number, and are grayish-white, speckled and mottled very variably with gray and white.

The color of this species is very simple, the general tint being black, the abdomen white, and the tail-feathers, excepting the two central, which retain their jetty hue throughout, tipped with the same color.

THE largest of the Australian species, the CINEREOUS WOOD SWALLOW (*Artamus cinereus*), is found both at Timor and the eastern and western coasts of Australia, thus having a very large range. This bird, although not at all uncommon, seems to be rather local, preferring certain spots for its residence, and keeping itself within some peculiar boundary of its own choosing.

It inhabits the banks of the Swan River and parts of the interior, and varies in its habits with the locality in which it happens to reside. Wherever the grass-tree (*Xanthorrhæa*) grows, there may be found the Cinereous Wood Swallow, feeding with the greatest avidity upon the seeds, and absolutely crowding each other upon the upright seed-stalks while engaged in digging out their food. It does not, however, depend upon the grass-tree for its subsistence, as it feeds largely upon insects, chasing them in the air with nearly as much activity as the ordinary swallow, or pursuing the quick-limbed beetles on the ground, digging out the hidden larvæ from beneath bark or under the soil, and picking them from the leaves on which they feed. The nest of this species is deeper than that of the common wood swallow, and the mottlings of the eggs have more of a ruddy hue. The position of the nest is generally in a thick low bush, or among the foliage of the grass-tree.

A VERY beautiful and singular bird is the GREAT DICRURUS of the East Indies, with its racket-tail feathers.

In its general outline this beautiful bird bears some analogy to the Leona nightjar, which has been figured on a previous page of the present work, having two long feathery appendages, naked throughout the greater portion of their length and webbed only at their extremity. There is, however, this great difference, that in the Leona nightjar they proceed from the wings, whereas in the Great Dicrurus they are merely prolongations of the external tail-feathers. The color of this bird is deep blue-black, like that of the raven, and its weird-like aspect is further strengthened by a large and well-developed crest that starts from the top of

the head and bends backward over the neck. A few of its feathers project slightly forwards so as to come beyond the base of the beak.

ANOTHER species of *Dicrurus* is well known in India by the name of KING CROW (*Dicrurus macrocerus*), a title which it has earned by its boldness in attacking the crows and maintaining royal dominion over them. In their habits the birds of this genus differ but very slightly from each other, and in all essentials they agree. They are insect-feeders, preferring grasshoppers to any other prey, and often pouncing upon the backs of cattle for the sake of capturing the flies that are so fond of attacking the poor beasts in the warm weather. They will even take their posts with perfect composure on the back of a cow or goat, and consider the animal as their especial property for the time being. As they are swift of flight, they constantly dart from their perches and capture insects on the wing.

The nest of the KING CROW is placed in the trees which grow in the thickest jungle, and is made of slender twigs interwoven with grasses, moss, and lichens. Some of the *Dicrurine* birds build a very beautiful and elaborately constructed nest, while others are content with a negligent and slovenly residence. The eggs are generally three or four in number.

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## SHRIKES.

WE now arrive at the family of LANIDÆ, or SHRIKES, or BUTCHER BIRDS, whose character is given in the names by which they are distinguished. The scientific term *Lanidæ* is of Latin origin, and is derived from a word which signifies lacerating or tearing, in allusion to the habits of the bird. These birds are found in all parts of the globe, and in all countries are celebrated for their sanguinary and savage character. They are quite as rapacious as any of the hawk tribe, and in proportion to their size are much more destructive and bloodthirsty. They feed upon small and disabled mammalia, and birds of various kinds, especially preferring them while young and still unfledged, and upon several kinds of reptiles, and also find great part of their subsistence among the members of the insect world.

In order to fit them for these rapacious pursuits, the bill is strong, rather elongated, sharp-edged, curved at the tip, and armed on each side with a well-marked tooth. The wings are powerful, the plumage closely set, and the claws, strong, curved, and sharp. The Shrikes are separated for convenience of reference into two groups or sub-families, namely, the true Shrikes, or LANINÆ, and the Bush Shrikes, or THAMNOPHILINÆ.

OF the true Shrikes we find an excellent example in the well-known GREAT GRAY SHRIKE, a bird which is very common in many parts of Europe, especially in the more southern and warmer regions.

This bird eats mice, shrews, small or young birds, frogs, lizards, beetles, grasshoppers, and many other creatures. It generally, if not always, destroys its prey by a severe bite across the head, crushing in the skull, and usually commences its meal with the head. This, together with the other Shrikes, has a curious habit of hanging its food upon some convenient spot, such as a forked branch, a thorn or sharp broken end of a bough, and will frequently leave its prey thus suspended for a considerable period. Even insects are served in this manner, being impaled upon thorns and left hanging in the branches. The object of this curious custom is extremely dubious. It cannot be merely for the purpose of holding the prey securely while it feeds, for the Shrike will frequently commence eating a bird immediately after its capture, holding the prey tightly with its claws after the manner of the hawks, and tearing it to pieces with its powerfully hooked bill. Nor can it be with the object of making it tender by hanging in the air, as the bird often devours the prey at once. Moreover, insects would not become



more tender by exposure, but would rapidly dry up in the sunshine and become hard and useless for food.

Even when tame it continues this habit, and has been known to make constant use of a spike driven into a wall for that purpose by its owner, always carrying its food, whether it consisted of meat or small birds, and impaling it upon the accustomed spike. A caged bird, mentioned in Mr. Yarrell's work, was in the habit of employing the spaces between the wires for the same purpose, always hanging the remnants of its meal between the wires, and pushing the prey through the bars while eating.

Its name of Excúbitor, or Watchman, has been given to it from the services which it renders to the fowler.

Fierce and powerful as it is, it holds the falcon in the greatest terror, and is gifted with so true an eye for its enemy that it can perceive a falcon when at an immense distance. Taking advantage of this peculiarity, the fowlers who set their nests for falcons always take with them a Gray Shrike, and after setting their nets, fasten the string to which the bird is tied to a peg near the nets. A little turf hut is built as a place of refuge for the Shrike, and a small mound or hillock raised, on which it perches. The fowler then retires to his own little hut, places the strings which draw the net within reach of his bird, and watches the Shrike out of a small window which commands the mound where it is perched. Feeling secure that the Shrike will not suffer a hawk to come within sight without giving notice, the fowler takes out his netting or other sedentary work, and continues his labor.

Hundreds of birds may pass over the net without the Shrike giving the least alarm, but as soon as it can see a falcon, it flutters about, gets uneasy, and at last begins to kick and squall with terror. Roused by the sounds, the fowler jerks some strings communicating with perches on which living pigeons are perched, and the flutter thus occasioned attracts the falcon's attention and induces him to stoop for a prey that appears so easy. As the foe approaches nearer, the Shrike's terror increases, and as the falcon swoops at the pigeons, the Shrike screams with fear and runs for shelter under the tiny hut. This movement is a signal for the fowler, who draws the strings of his net and incloses the falcon as he makes his dart on the pigeons.

The voice of the Shrike, although sufficiently harsh on occasions, is capable of great modulation, so that the creature can imitate the cries of many birds, and even copy with some success the sweet notes of the songsters.

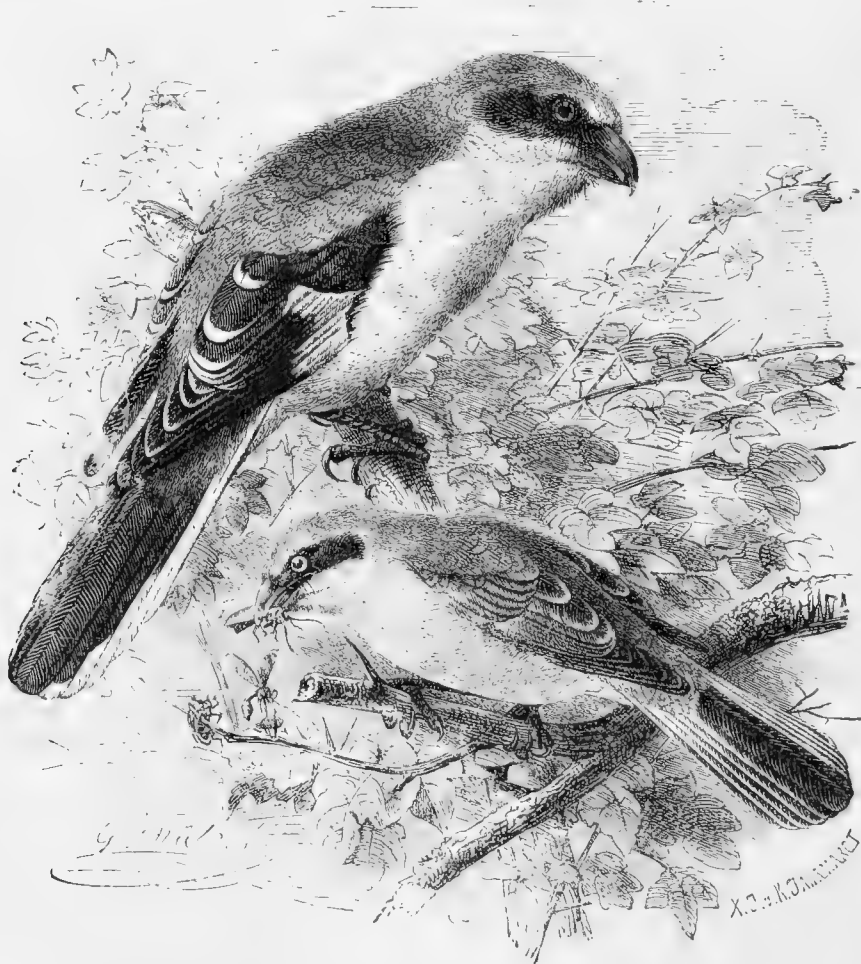
The nest of the Gray Shrike is situated in forests, and is placed in the lofty branches of some tall tree. The substances of which it is made are fine grass, roots, mosses, down, and wool. The eggs are from four to six in number, and are bluish-gray, spotted at the large end with deep gray and brown. The color of this species is pearl-gray on the upper part of the body; the chin, breast, and abdomen are white; the quill-feathers of the tail black variegated and tipped with white; and a black band crosses the forehead, runs under the eyes, and then expands into a black patch on the ear-coverts. The total length of the bird is about ten inches

THE GREAT NORTHERN SHRIKE (*Lanius borealis*), called also BUTCHER BIRD, is a winter visitor in New England. It breeds in the far North. Its habits are much like those of the hawk, as it feeds on mice and small birds. Its bill is much like those of birds of prey, sharp, hooked, and effective in tearing apart its victims. Its feet are also stout, and fitted to hold objects of prey strongly. A singular habit is attributed to this bird by all who have observed or written about him. He captures habitually more prey than he can at the time dispose of, and, instead of hoarding it as the magpie does, he impales his victim on some brier. Grasshoppers and small birds are found suspended in this manner. The courage, dash, and impetuosity of this little bird are beyond that of any other species—not excepting any of the rapacious tribe. It is often the case in the country, during a winter of severity, that this bird will visit the barn-yard; and, should he happen to espy a canary in a cage by the window, he makes a bold dash, and brings up against the window-pane, generally to his utter confusion, and sometimes to his more serious injury. He is about ten inches in length, and thirteen in extent of wing.

Two other species are known in America—the Loggerhead and the White-rump; the first named a Southern species, and the latter from the Western plains.

THE RED-BACKED SHRIKE is very much more common than the last-mentioned species. Its winter quarters seem to be situated in Africa, and it reaches the northern countries of Europe at the end of April or the beginning of May, passing through Italy on its passage.

During the time of its residence it may often be seen flitting about the tops of hedges and small trees, evidently in search of its prey, and even at a considerable distance may be recognized by its habit of wagging its tail up and down whenever it settles, in a manner very similar



GREAT GRAY SHRIKE and RED-BACKED SHRIKE.—*Lanius excubitor* and *collurio*.

to that of the wag-tails. Usually it is seen in pairs; but when the eggs are laid, the male bird is generally engaged in procuring food while the mother bird stays at home and attends to her domestic affairs.

The food of the Red-backed Shrike chiefly consists of the larger insects, such as grasshoppers, beetles, and chafers, and it is in the habit of impaling them on the thorns near its nest, probably to save the mother bird the trouble of going to look for her own meals. A not very common species of cocktail beetle, the *Staphylinus erythropterus*, is a very favorite prey of this bird; and when I was making up my collection of insects, I used to derive considerable assistance from the labors of the Red-backed Shrike. These impaled insects are stuck about the bush in such numbers, and in so very open a fashion, that they form a ready guide to the position of the Shrike's nest. Moreover, the parent birds are so solicitous about their home, that as soon as they see a human being approaching their nest, they set up such a

shrieking and fluttering that they intimate the position of their nest to the least experienced observer.

Although the chief food of this bird consists of insects, it occasionally takes to larger game, and has been known to destroy other birds, generally while in their nestling state. It has sometimes been caught in fowlers' nets while striking at their decoy birds, and has been detected in dragging young and weakly pheasants through the bars of the cage in which they had been confined.

I can also add the testimony of personal observation to the bird-destroying capabilities of this Shrike. A few months ago a lady kindly presented to me a box containing several nestling birds, each pierced by a thorn, which she said had been killed and stuck there by the Red-backed Shrike. Thinking that there might possibly have been some mistake about the slayer, I asked if it could be procured, and in a few more days another box was sent, containing a fine Red-backed Shrike and another impaled victim. Most of the dead birds were headless, and in every case the thorn, instead of transfixing the body, had been thrust between the skin and the muscles, but in so firm a manner that to draw it out again required considerable force. The victims were very small, and too much dilapidated for me to ascertain their species.

In most countries where it dwells, the Shrike is termed "Nine-killer," from a notion that it always kills and impales nine creatures before it begins its meal. The generic name *Ennéactonius* bears the same signification, and has been applied to the bird in allusion to this idea. Mr. Blyth says that wherever food is very abundant, the Red-backed Shrike only eats the soft abdomen of the impaled insect, leaving the wings, limbs, and hard parts on the thorns. I have never observed this practice, although I have seen very many Shrikes, their nests, eggs, and young. Still, however, it may be the case with individual birds.

The nest of this Shrike is situated in hedges or bushes, generally from five to ten feet from the ground, the average elevation being about seven feet. It is large, rather clumsy, and very easily seen through the foliage, being made of thick grass-stems, moss, and roots on the exterior, and lined with very fine grasses and hair. In some places the nests are quite common, and I have found three in a hedge surrounding a single field of no very great extent. The eggs are generally five in number, and are rather variable in coloring, their ground color being always white, tinged in some cases with blue, in others with green, and in a few specimens with rusty-red. The spots with which they are marked are quite as variable, sometimes being numerous, dark, and gathered into a ring at the large end of the egg, and sometimes being only gray and light brown scattered irregularly. In all cases, however, they are gathered upon the large end of the egg.

In the adult male, the head, neck, and upper parts of the shoulders are pearly-gray, with a black stripe across the base of the beak and running through the eye. The back and wing-coverts are ruddy chestnut, fading into reddish-gray upon the upper tail-coverts. The quill-feathers of the wings are black, edged with red upon their outer webs, and the quill-feathers of the tail are white at the basal half, and the remainder of each feather is black tipped with a very narrow line of white. The chin and under tail-coverts are white, and the rest of the under surface is pale rusty-red. The strongly notched and hooked beak is deep shining black. The female bird may at once be known by the absence of the black streak across the eye, which in her case is replaced by a light colored stripe over the eye. The head and all the upper parts of the body are reddish-brown, and the red edges of the wing-feathers are narrower than in the male. The under side of the body is wholly grayish-white, covered with very numerous transverse lines of a darker hue. The young male is similarly colored, but is distinguished by the back being also covered with transverse bars of dark gray. The length of the adult bird is between seven and eight inches.

ANOTHER species of the same genus, the WOODCHAT SHRIKE, is about the same size as the red-backed Shrike, and possesses many of the same habits, but may readily be distinguished from that bird by the difference of coloring.

In many districts of the European Continent the Woodchat Shrike is a common bird, especially preferring the warmer and more southern districts. In many parts of Africa it is extremely plentiful, being particularly abundant in Northern Africa. It is also seen at the Cape of Good Hope. On account of their habit of hanging and impaling, the Shrikes are known at the Cape by the popular name of Magistrate Birds. The nest of the Woodchat Shrike is made rather more neatly than that of the red-backed species, and is always placed on the branch of a tree, the oak being preferred for this purpose. The materials of which it is made are pine-twigs, moss, and wool, and it is lined with wool and slender grasses. The eggs are smaller than those of the last-mentioned bird and are quite as variable in their markings, the general color being very pale bluish-white speckled with rusty-brown.



WOODCHAT SHRIKE.—*Enneactonotus rufus*.

The coloring of the Woodchat Shrike is as follows : The top of the head and back of the neck are rich chestnut-red, a white streak runs across the base of the upper mandible, and a broad black band crosses the forehead and reaches as far as the ear-coverts, enveloping the eye in its progress. The back-wings and wing-coverts are black, relieved by the white feathers of the scapularies and upper tail-coverts. The primary feathers of the wings are also white at their base, and the secondaries are tipped with white. The two central tail-feathers are black, the two exterior feathers white, and the remainder are partly of one color and partly of the other. The whole of the under surface is white. In the female, the head and neck are dusky red, the back is brown-black, the wing-coverts are marked with rusty-red, and the breast is grayish-white.

THE second sub-family of the Butcher Birds, namely, the THAMNOPHILINÆ, or Bush Shrikes, are well represented by the beautiful VIGORS' BUSH SHRIKE.

This bird is a native of Southern America, and is generally found in forests and thick brushwood, where it passes its time in a constant search after the small mammalia, birds, reptiles, and insects, on which it feeds. It is a large and rather powerful bird, and as it possesses a strong and sharply-hooked beak, is a very formidable foe to any creature which it may attack. Its claws are also powerful, curved, and very sharp, so that the bird is aided by its feet as well as by its beak in the demolition of its prey. In order to enable the bird to prey among the rank herbage and thick, massy foliage of the localities in which it dwells, its legs are long in proportion to the size of its body, and the grasp of its feet very strong, so that it is able to perch upon a bough or on the ground, and raise its head to some height while surveying the locality with its piercing glance. The wings are rather short and rounded, as long and sharply-pointed wings would be of little use in threading the network of leaves and branches among which it takes up its residence.

The tail of the Vigors' Bush Shrike is long in proportion to the size of the body, and extends far beyond the closed wings. The general color of the male bird is sooty-black upon the head and the whole of the upper surface, diversified with numerous transverse bars of rich red chestnut. The under parts of the body are pale grayish-brown. The head is decorated with a crest of erectile feathers, ruddy throughout the greater part of their length, and marked with black at their tips. The female is distinguished from the male by the blacker crest, the paler tint of the transverse bars, and the uniform ashen-gray of the under parts. The total length of this species is about thirteen inches.

There are many species of Bush Shrikes, the greater number being inhabitants of the eastern hemisphere. As their name imports, they all live among the thickest brushwood and in forests, and their food consists chiefly of insects. They are rather silent birds, their note being merely a single syllable constantly repeated, and only uttered during the breeding season.

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## CONE-BILLED BIRDS.

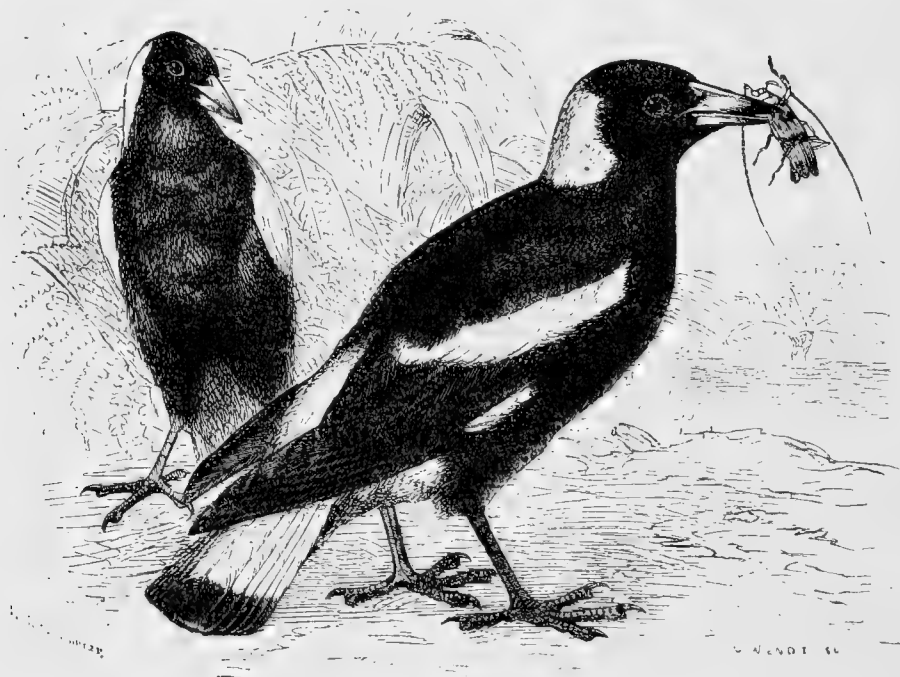
WE now arrive at a very large and important group, called from the shape of their beaks the CONIROSTRES, or CONE-BILLED BIRDS. In these birds the bill varies in length and development, in some being exceedingly short, while in others it is much elongated; in some being straight and simple, while in others it is curiously curved and furnished with singular appendages; in some being toothless, while in others there is a small but perceptible tooth near the tip. In all, however, the bill is more or less conical in form, being very thick and rounded at the base, and diminishing to a point at the extremity. There are no less than eight recognized families of this large group, containing some of the most important and most remarkable members of the feathered race.

THE first family is that which is well known under the title of CORVIDÆ, or Crows, containing the crows, rooks, magpies, starlings, and other familiar birds, together with the equally celebrated but less known paradise birds, bower birds, troopials, and orioles. The beak of all these birds is long, powerful, and somewhat compressed,—*i. e.*, flattened at the sides,—curved more or less on the ridge of the upper mandible, and with a notch at the extremity. This family is divided into several smaller groups or sub-families, the first of which is the PHONYGAMINÆ, or PIPING CROWS. These birds are inhabitants of Australia, New Holland, New Guinea, and several adjacent islands, and may be distinguished by the long, narrow, and naked nostrils.

THE PIPING CROW SHRIKE, sometimes called the Magpie by the colonists, on account of its magpie-like white and black plumage, is a native of New South Wales, and towards the interior is very plentiful.

This bird is found in almost every part of the country, preferring, however, the open localities to the wooded districts, especially if they are cleared by artificial means. For the Piping Crow Shrike is a wonderfully trustful bird, attaching itself instinctively to mankind, and haunting the vicinity of barns and farm-yards. On the very slightest encouragement the bird will take possession of a barn, garden, or plantation, and, with the exception of a favored few, will not suffer any of his friends to intrude upon his property. The owner of the garden is well repaid for his hospitality by the rich and varied song which the bird pours forth in the early morning and towards evening, as if in gratitude for the protection which has been afforded it.

The notes of this bird are peculiarly rich and mellow, and in speaking of them the author of "Bush Wanderings in Australia" remarks: "No bush-bird, to my fancy, had a clearer or



PIPING CROW.—*Gymnorhina tibicen*.

richer note than the Magpie: one of the earliest birds of morning, it was also one of the latest at night, and the deep flute-like evening song of the Magpie was heard in the forest long after all the other birds of day had retired to roost. The Magpie is a very common bird throughout the land during the whole year, often in small companies, and in the autumn the old and young birds congregate in flocks. The young Magpies are excellent eating." The name "tibicen" signifies a flute-player.

As it is a very hardy bird and bears captivity well, Mr. Gould thinks that it would be easily adapted to colder climates, and in that case would be a very valuable addition to the list of cage-birds. In its native country it has little of the migrating spirit, generally remaining stationary throughout the year in the spot which it has adopted for its home. The food of the Piping Crow consists mostly of insects, the large grasshoppers being especial dainties. The bird is an excellent hunter, pursuing its active prey over the ground with considerable agility, and pouncing upon it at last with remarkable accuracy of aim. In captivity it will eat almost any description of animal food, and also feeds upon different fruits and berries.

The nest of the Piping Crow is a large and not very neatly constructed edifice, made principally of sticks, leaves, and small grasses. It is loosely placed among the branches of a lofty

tree at a considerable elevation above the ground, and contains from two to four eggs. There are generally two broods in the year.

The coloring of this bird is remarkable for its boldness and simplicity, consisting only of two opposite tints, disposed in large and contrasting masses. The greater part of the body and wings is rich jetty-black, as deep as that of the raven, and the whole back of the neck, the wing-coverts, the upper and under tail-coverts, and the basal portions of the tail-feathers, are pure snowy-white, so that the colonists are quite justified in the use of their popular title. In dimensions it about equals our common magpie, but does not appear to be so large a bird on account of its comparatively short tail. The bill is blue-black, and the eyes are deep ruddy hazel.

THE PIED CROW SHRIKE is an inhabitant of New South Wales, and is very widely spread throughout that country.

It is by no means a local bird, finding subsistence in almost every district, and being equally found in the bushes of the coast, the mountains, and the forests. Its food is chiefly of a vegetable character, consisting of berries, fruits, and seeds, and the bird is in consequence of a more arboreal character than the preceding species, which finds the greater part of its nourishment on the ground. It is a stationary bird, only moving from one district to another according to the season of the year, and is generally seen in little parties of five or six in number, which are supposed to be the parents and their young family.

The flight of this bird is neither strong nor sustained, and it seldom takes to wing without being forced to do so. Even when it has been obliged to entrust itself to the air, it rarely flies farther than from one clump of trees to another, or across one of the deep gullies that are so common in its native land. As a general rule, it contents itself with merely flitting from one tree to another, and avoids any open space with great solicitude. While flying, the beautiful black and white markings of its plumage are very conspicuous. It is a most noisy and loquacious bird, possessing a loud and curiously ringing voice, and being so fond of exercising its vocal powers that it is generally heard long before it is seen. Like the piping crow, it is killed for the purposes of the table, and is held in some estimation as an article of food.

The nest of the Pied Crow Shrike is very large in proportion to the size of the bird, round in form, and cup-shaped in the interior. It is almost wholly constructed of very little sticks, and is lined with dried grasses. Unlike the nest of the preceding species, it is placed in some low branch of a tree. The number of eggs is three or four. The color of this species is a rich deep blue-black, with the exception of the basal halves of the primary quill-feathers of the wings and tail, and the tips of the tail-feathers, which are snowy-white. The bill is black, and the eye bright topaz-yellow.

## J A Y S .

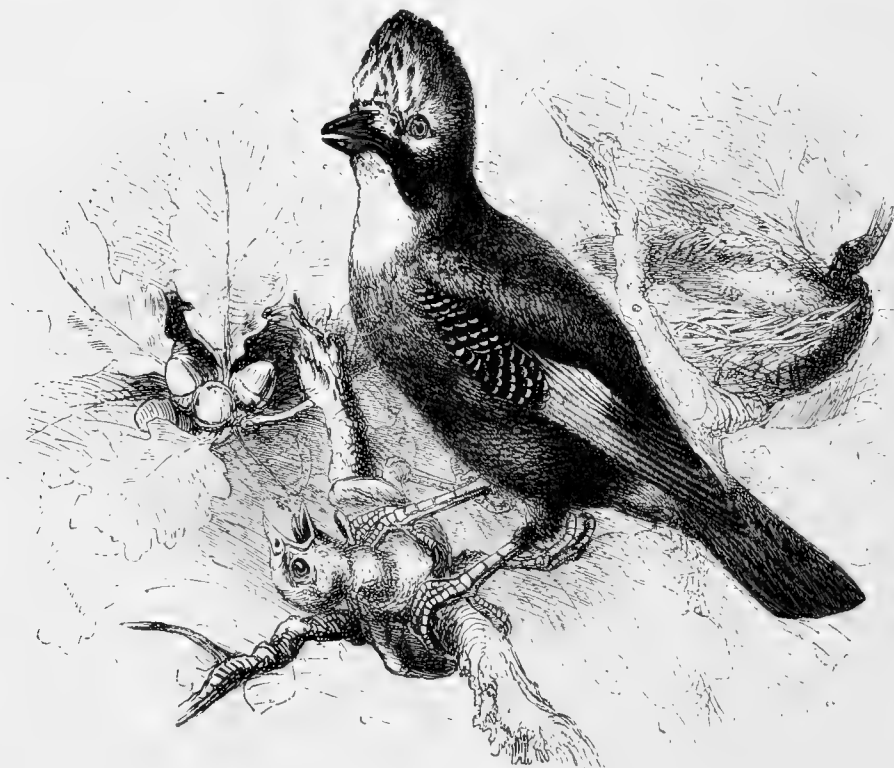
INTERMEDIATE between the piping crow shrikes and the true crows, comes a group of birds well known by the popular title of JAYS, or the scientific name of *Garrulinae*, or talkative birds, so called from their exceeding loquacity. The birds of this group have bills with a little notch near the extremity, but they may be distinguished from their relatives by the fact that the nostrils are covered by the feathers of the forehead. Their tails are generally rather long in proportion to the size of the bird, and the wings are short and rounded. In some instances the coloring of these birds is very fine, and it is curious that blue seems to hold predominance throughout the group.

THE best known of this group is the common English JAY. It is one of the handsomest of the resident birds.

The localities which it best loves are thick woods and plantations, particularly those where heavily foliated trees are found. Sometimes, however, it is not so careful, and I have seen it flitting about the topmost branches of the trees in the early morning, and pecking at the beech mast with perfect unconcern, even though within a few hundred yards of houses. In general,

however, the Jay is seldom seen, as it is much afraid of human beings, and conceals itself in the thickest covert on the slightest alarm.

The ordinary note of the Jay is a rather soft cry, but the bird is a most adroit imitator of various sounds, particularly those of a harsh character. It has one especial harsh scream, which is its note of alarm, and serves to set on the alert not only its own kind, but every other bird that happens to be within hearing. The sportsman is often baffled in his endeavors to get a shot at his game by the mingled curiosity and timidity of the Jay, which cannot hear a strange rustling or see an unaccustomed object without sneaking silently up to inspect it, and is so terribly frightened at the sight of a man, a dog, and a gun, that it dashes off in alarm, uttering its loud "squawk," which indicates to every bird and beast that danger is abroad.



JAY.—*Garrulus glandarius*.

In captivity the Jay soon learns to talk, and even when caged displays its imitative powers with considerable success, mocking the bleating of sheep, the cackling of poultry, the grunting of pigs, and even the neighing of horses, with wonderful truth.

The Jay, like all the crow tribe, will eat animal or vegetable substances with equal zest, and will plunder the hoards of small quadrupeds or swallow the owner with perfect impartiality. Young birds are a favorite food of the Jay, which is wonderfully clever at discovering nests and devouring the fledglings. Occasionally it even feeds upon birds, and has been seen to catch a full-grown thrush. Eggs also are great dainties with this bird, particularly those of pheasants and partridges, so that it is ranked among the "vermin" by all gamekeepers or owners of preserves. So fond is it of eggs, that it can almost invariably be enticed into a trap by means of an egg or two placed as a bait, and it is a curious fact that the Jay does not seem to be aware of the right season for eggs, and suspects no guile even when it finds a nest full of fine eggs in the depth of winter.

It also eats caterpillars, moths, beetles, and various similar insects, preferring the soft, fat, and full-bodied species to those of a more slender shape. Fruits and berries form a considerable portion of the autumnal food of this bird, and it occasionally makes great havoc in the cherry orchards, slipping in quietly at the early dawn, accompanied by its mate and





## Animate Creation.

### Testimonials to the "Tafeln" of Brehm's Thierleben.

The late CHARLES DARWIN writes:—"The illustrations are the best I ever saw in any work. I find it superfluous to enter here into particulars, as I already, in the 'Descent of Man,' have willingly and openly confessed how much I have profited by Mr. Brehm's book, and how highly I esteem it."

Sir JOHN LUBBOCK, Bart., D.C.L.:—"You have, I think, done good service in publishing them. They are certainly very admirable."  
W. B. CARPENTER, M.D., LL.D., writes:—"I can quite endorse the favorable opinions already given by distinguished zoologists as to the high character of the illustrations generally."

WE have concluded to submit for public patronage a work with the above title, being a series of exquisite Engravings representing the ANIMAL WORLD, executed with great scientific accuracy, and accompanied by full Descriptive Text, written in popular terms, so as to delight and instruct the people. Anyone who has considered the subject must be at a loss to understand why an ILLUSTRATED NATURAL HISTORY, comprehensive and at the same time popular, has not before this been published in this country. Indeed any lover of animals who has visited the great museums and zoological gardens and has had access to books of engravings in the public libraries, could not fail to remark the wealth of material in existence devoted to this subject. Being confirmed in our conviction of the desirability of such a work, we laid under contribution the best existing authorities for the production of most perfect representations of all the more important living creatures, and among the artists whose delineations will delight the reader, we may mention Harrison Weir, Wolf, Coleman, Fr. Specht, and Mutzel. By far the majority of the engravings in these volumes are from drawings made from the *living* animals, many at the Zoological Society's Gardens in London, England.

We purpose that our patrons shall be aided and interested in their study by such an array of pictures as has never before embellished any Natural History. In numerous instances the engraving is printed in oil-colors, and this portion of the illustrations has been taken charge of by Messrs. L. Prang & Co., of Boston, who we believe rank foremost for high artistic results in this department of printing. These Oleographs were copied under the superintendence of Mr. Prang from the renowned "Tafeln" of "Brehm's Thierleben," so that they may be declared perfectly reliable.

We sought competent advice from various sources as to the most suitable text that should accompany this panorama of handsome Engravings. It was found impossible to embody all the present ideas of naturalists in a single work like this on account of the rapid advances and constant changes in their knowledge of, and habits of thought respecting, the Animal World. And it seemed to us correct that the true object of Zoology is not to arrange, to number, and to ticket animals in a formal inventory, but to inquire into their life-nature, and not simply to investigate the lifeless organism.

What do we know of "Man" from the dissecting-room? Is it not Man, the warrior, the statesman, the poet, etc., that we are interested in? With all veneration which attaches itself to those who are the accredited possessors of abstruse learning, their inordinate use of phraseology detracts too much, we fear, from the fascination that the study of the Animal World would otherwise yield, and as we are not content to have our work restricted to a favored few, we thought the task placed in our hands to be to keep the work free from a repellant vocabulary of conventional technicalities. Our endeavor has been to find an author whose work would be noted for its fund of anecdote and vitality rather than for merely anatomical and scientific presentation, and we arrived at the conclusion that we could not do better than avail ourselves of the Rev. J. G. Wood's comprehensive work—a work most popularly approved by speakers of the English language. It would be superfluous to say one word concerning the standard character of his book, from the pages of which old and young at the other side of the Atlantic have obtained so much instruction and rational amusement. Avoiding the lengthened dissertations and minute classifications of specialists, he presents to his readers in popular terms a complete treatise on the Animal Kingdom of all climes and countries. The one objection that could be urged against it was, that animal life in America might be treated more fully and American forms given more consideration. In order to obviate this drawback and to do full justice to the creatures of our own country, we secured the aid of Dr. J. B. HOLDER, of the American Museum of Natural History in New York, an undoubted American authority, who has adapted Wood's work to American wants and given prominence to American forms of Animal life.

The splendid work on Rodentia, by Allen, Coues, and others, will be fully consulted. The valuable work on North American Birds, by Baird, Brewer, and Ridgway, will be the guide in the treatment of birds. The late arrangement of the classification and nomenclature of North American Birds, by Mr. Ridgway, and the Committee on that subject of the Ornithologists' Union, will be utilized in full. The arrangement of Mammals will be after the latest classification by Professor Flower, of the Zoological Society of London. So that this will be the first popular Natural History worthy of the name that has made its appearance here, which gives due and full recognition to the animate world surrounding us.

### Terms of Publication.

The extent of the work will be 68 parts of 28 pages, at the price of 25 cents each. The entire publication will contain 31 Oleographs and 68 Full Page Engravings on Wood, besides many hundreds of exquisite Illustrations interspersed through the text. The parts will be issued every two weeks, and are payable only as delivered. No subscriber's name will be received for less than the entire work, and anyone removing, or not regularly supplied, will please address the Publisher by mail.

N. E.

SELMAR HESS, Publisher, New York.

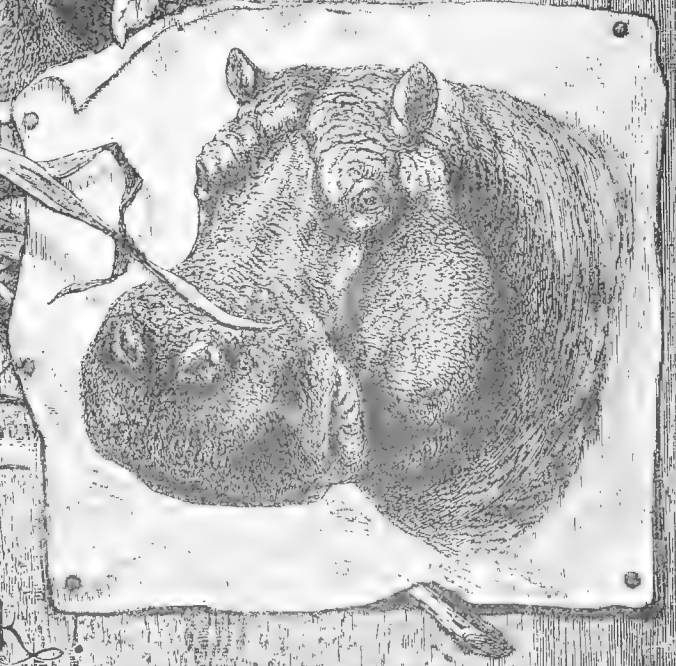
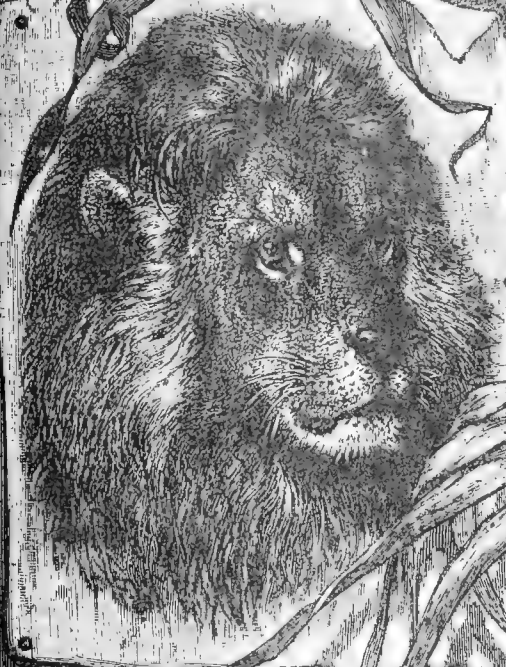
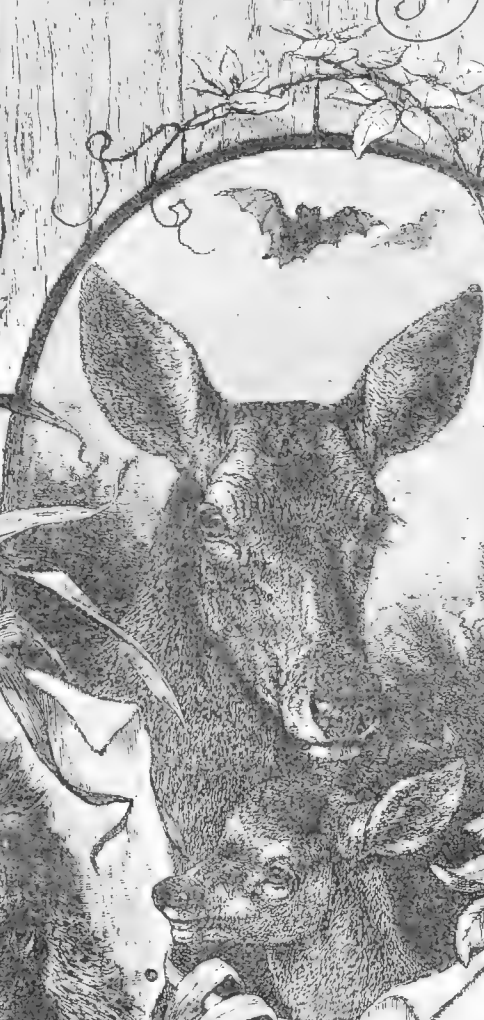
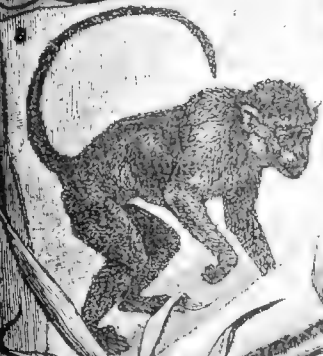
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# Animate Creation

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Selmar Hess,  
Publisher  
New York



young family, and stripping the branches of the bark and finest fruit. The kitchen garden also suffers severely from the attacks of the Jay, which has a great liking for young peas and beans. It also eats chestnuts, nuts, and acorns, being so fond of the last-mentioned fruit as to have received the title of "glandarius," meaning a lover of acorns. Sometimes it becomes more refined in its taste, and eats the flowers of several cruciferous plants, which, according to Mudie, it plucks slowly and carefully, petal by petal.

The nest of the Jay is a flattish kind of edifice, constructed of sticks, grass, and roots, the sticks acting as the foundations, and a rude superstructure of the softer substances being placed upon them. It is always situated at a considerable elevation from the ground. There are generally four or five eggs, and the bird mostly brings up two broods in the year. During the earlier portion of their existence the young birds accompany their parents, and as they wander in concert, often do great damage among the gardens and orchards which they visit.

One mode of taking the Jay has already been mentioned. Fowlers, however, employ several methods for the capture of this pretty bird, and find that they can catch Jays better by working on their curiosity than on their appetite. None of the crow tribe seem to be able to pass an owl without dashing at it; and the bird-catchers take advantage of this propensity by laying their snares in the branches of a thick bush, and fastening a common barn owl in such a manner, that when the Jay makes its attack, it is arrested and secured by the snare. Should an owl not be attainable, a white ferret will answer the purpose equally well, the Jay having a great objection to all the weasel tribe, and invariably attacking ferret, polecat, stoat, or weasel with the greatest virulence and perseverance.

In size, the Jay equals a rather large pigeon; and the coloring of its plumage is very attractive. The general tint of the upper part of the body is light reddish-brown, with a perceptible purple tinge, varying in intensity in different specimens. The primary wing-coverts are bright azure, banded with jetty black, and form a most conspicuous ornament on the sides, as the bird sits with closed wings. The head is decorated with a crest, which can be raised or lowered at pleasure, and the feathers of which it is composed are whitish-gray, spotted with black. There is a black streak on each side of the chin, and the quill-feathers of the wings and tail are also black. The eye is a bright blue-gray, which, when the bird is excited, can gleam with fiery rage, and together with the rapidly moved crest and harsh screams gives an angry Jay a very savage aspect.

IN many points, our AMERICAN BLUE JAY (*Cyanocitta cristata*) closely resembles its European relative, but as it possesses a decided individuality of its own, it is well worthy of a short memoir.

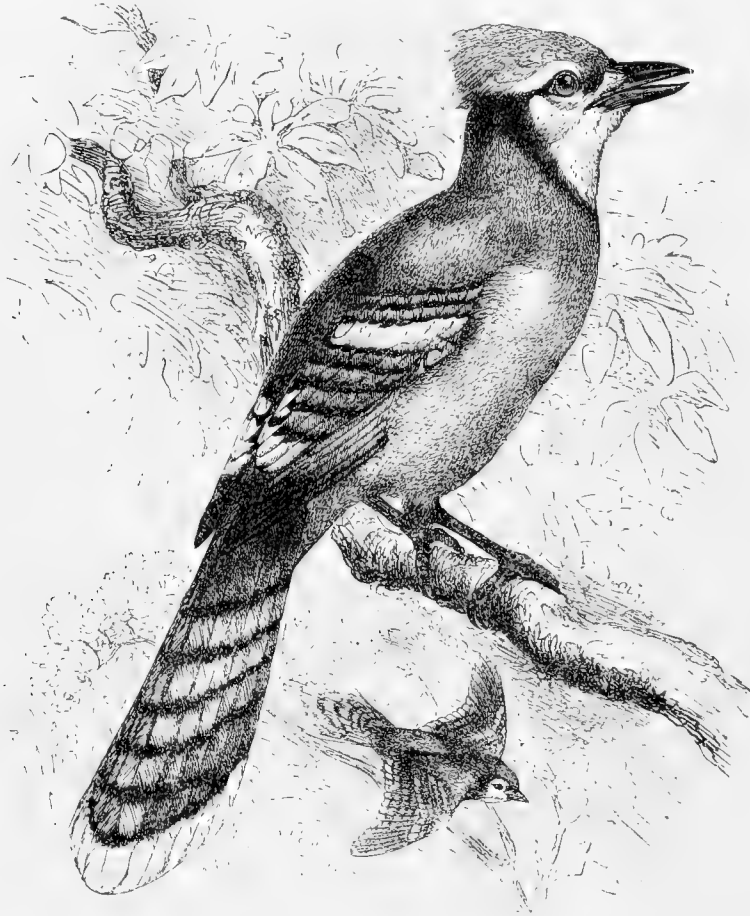
The Blue Jay seems to be peculiar to Northern America, and may be found among the woods, where it is very plentiful, but never seems to associate in great numbers, the largest flocks amounting merely to some thirty or forty members, and these only being seen during a small portion of the year. Like the European Jay, it is both inquisitive and suspicious, and never fails to give the alarm as soon as it sees a sportsman among the trees. Many a deer has been lost to the anxious hunter through the warning cry of the Jay, for the deer understand bird language quite well enough to know what is meant when a Jay sets up its loud dissonant scream, and many a Jay falls a victim to the bullet that had been intended for the heart of the escaped deer. Indeed, some hunters have taken so rooted a dislike to this bird, that they always shoot it whenever they see it.

The voice is adapted for imitation, and there is hardly a bird of the forest whose voice is not mocked by the Jay with a fidelity that even deceives the species whose notes are thus wonderfully reproduced. Being a bird of some humor, it is greatly delighted by mimicking the scream of a hawk, and the terrified cry of a little bird in distress, thereby setting all the small birds in a turmoil, under the impression that one of their number has just been carried off by a hawk.

The Blue Jay attacks owls whenever he meets with them, and never can see a hawk without giving the alarm, and rushing to the attack, backed up by other Jays, who never fail to offer their assistance to their comrade. Often they will assemble in some numbers, and

buffet the unfortunate hawk with such relentless perseverance that they fairly drive him out of the neighborhood; but sometimes the tables are reversed, and the hawk, turning suddenly on his persecutors, snaps up the foremost and boldest, and silently sails away into the thickest covert, bearing his screaming prey in his talons.

As the Blue Jay is very fond of fruit and seeds, it often does great harm to the agriculturist, robbing his fruit-trees in a very complete and systematic manner, and doing no small amount of harm to the crops. Yet the bird is not without its use, for in replenishing its winter stores, which consist of nuts, mast, chestnuts, and similar provisions, the Jay drops many of them in its passage, and thus unconsciously succeeds in planting many a useful tree.



AMERICAN BLUE JAY—*Cyanocitta cristata*.

One careful observer of this bird and its habits says that in a few years' time the Jays alone would replant all the cleared lands.

The diet of the Jay is, however, by no means restricted to vegetable substances, as the bird lives more upon animal than on vegetable food. In the spring and early summer, young birds form a large portion of its sustenance, and it robs many a nest of its eggs, or even when pressed by hunger makes an attack on the parent bird.

In captivity with its European relative, the Blue Jay is equally mischievous, being attracted by anything that glitters or that he thinks is valued by its owner, and hiding it in some of his especial treasure-houses. He will also learn to talk, and becomes very proud of his accomplishment, displaying his newly-acquired talents to every one who will listen, and being extremely

loquacious when excited by the presence of several persons at the same time. If kindly treated, the Blue Jay becomes very affectionate to its owner, and can even be taught to live in loving communion with creatures whom it would in a wild state immediately devour. One of these birds, kept for some time by Wilson, was on terms of intimate friendship with one of the Baltimore orioles, and would permit her to take all kinds of liberties, such as pulling its whiskers, jumping into the water and splashing it whenever it desired to drink.

The nest of the Blue Jay is large, and rather clumsily made, and is placed in a lofty branch of some tall tree, the cedar being in principal request for this office. It is lined with fine fibrous roots, and contains four or five eggs of a dull olive, spotted with brown. The male bird is very cautious in his approaches to the nest, always gliding secretly and silently to the spot where his mate and young have made their home, carrying with him the results of his foraging expedition.

Much more might be said of this bird, but its character has been so well described by Webber in a few graphic passages, that I should do it injustice, were not his account to be presented in his own words:—

“See him of a fine spring morning in love-making time! See him rise up and down upon the mossy limb, his gay crest bent in quick and frequent salutation, while a rich, round, thrilling love-note rolls liquidly from off his honeyed tongue. Then see him spring in air with his wide wings, azure and white, and dark-barred, graceful tail, spread to the admiring gaze of her he woos, float round and round her fairer form, then to return again in rapturous fervor to her side, to overwhelm his glowing charms with yet more subduing graces.

“But the fun of it all is, to see our euphuist practising these seductive arts by himself. You will often catch him alone, thus making love to his own beauty with an ardor fully equal to that of the scene we have just described; indeed, I am not sure that it does not surpass it; for, like other dandies, he is most in love with his own beauty. It is the richest and most fantastic scene I know of among the comicalities of the natural world, to catch him in one of these practising humors; he does court to his own charms with such a gay and earnest enthusiasm; he apes all the gestures and love-lorn notes of his seemingly volcanic amours, and turning his head back, gazes on his own fine coat with such fantastic earnest, that one can hardly resist roaring with laughter.

“So jealous is he of his sole prerogative of supervision over the interest and welfare of his neighbors, that he is forever on the look-out for all interloping stragglers. Every racoon that shows his inquisitive nose is assailed with vehement clamors and angry snappings of beaks, which compel him, in terror for his eyes, to return to his home. Our friend Jay is said to attribute the nocturnal habits of racoons, wild cats, opossums, owls, etc., to their apprehension of his valorous vigilance by daylight. Be the facts of the case what they may, no one of these gentry, nor mole, nor mink, nor weasel, can make its appearance without being beset by the obstreperous screams of this audacious knave. Nor does he confine his operations to the defence of his foraging-ground from these depredators, from whom he has little to fear of personal danger, on account of his superior activity. But he even sometimes does assail the lightning-winged and lordly hawk; these scenes are very characteristic and very amusing, and I have frequently witnessed them.”

The Blue Jay is a familiar bird in every part of the American Continent. The entire family to which this bird belongs, and of which it is a very conspicuous member, is nearly cosmopolitan as to distribution, and is distinguished by the remarkable intelligence of all its members. Its habits are striking, peculiar, and full of interest, often evincing sagacity, forethought, and intelligence strongly akin to reason. “Those traits are common to the whole family.”—*N. A. Birds*. Wary as this bird is in the settled parts of the country, in the western prairies, it is half domestic. In one of the principal streets of Richmond, Indiana, a nest was built in a lilac-bush near a window of a dwelling. In Kansas the Jay is equally familiar, and is more highly colored than in the east.

Wilson says of him: “He appears to be among his fellow-musicians what a trumpeter is in a band; some of his notes having no distant resemblance to the tones of that instrument. These he has the faculty of changing, through a great variety of modulations, according to the peculiar humor he happens to be in. When disposed for ridicule, there is scarce a bird whose peculiarities of song he cannot tune his notes to. When engaged in the blandishments of love, they resemble the soft chatterings of a duck; and while he nestles among the thick branches of a cedar are scarce heard at a few paces distant. But he no sooner discovers your approach than he sets up a sudden and vehement outcry, flying off and screaming with all his might, as if he would call the whole feathered tribe to witness some outrageous usage he had received. When he hops among the oaks and hickory they become soft and musical. All these he accompanies with various nods and jerks and other gesticulations, for which the Jays are so remarkable.

The power of mimicry possessed by the Jay, though different from, is hardly surpassed by that of the mocking-bird. It imitates the cry of a hawk so closely as to drive the small birds to cover, and excite immediate consternation in the poultry-yard. An experienced bird-fancier has found them more ingenious, cunning, and teachable than any other species of bird he has ever attempted to instruct. The Blue Jay appears to belong exclusively to America.

The Florida Jay, California Jay, Woodlawn Jay, Ultramarine Jay, Green Jay, Canada Jay, and Brown Jay are of comparatively recent discoveries.

THE CANADA JAY (*Perisoreus canadensis*) is strikingly different from other species. We are apt to associate blue with the Jays. In this case there is a combination of white and gray. This bird is found from the Atlantic to the Pacific in the northern portions. Audubon found it breeding in Maine and New Brunswick, and as far north as Labrador. When hard pressed, like other Jays, it preys upon the young of other birds. It seeks the most unfrequented places, keeping almost constantly on the ground, yet sometimes at twilight mounts to the top of a small tree and twitters its notes.

A European species of this bird is known under the scientific term *Perisoreus infaustus*, or *Corvus sibericus*. It is illustrated with the nut-cracker on page 301.

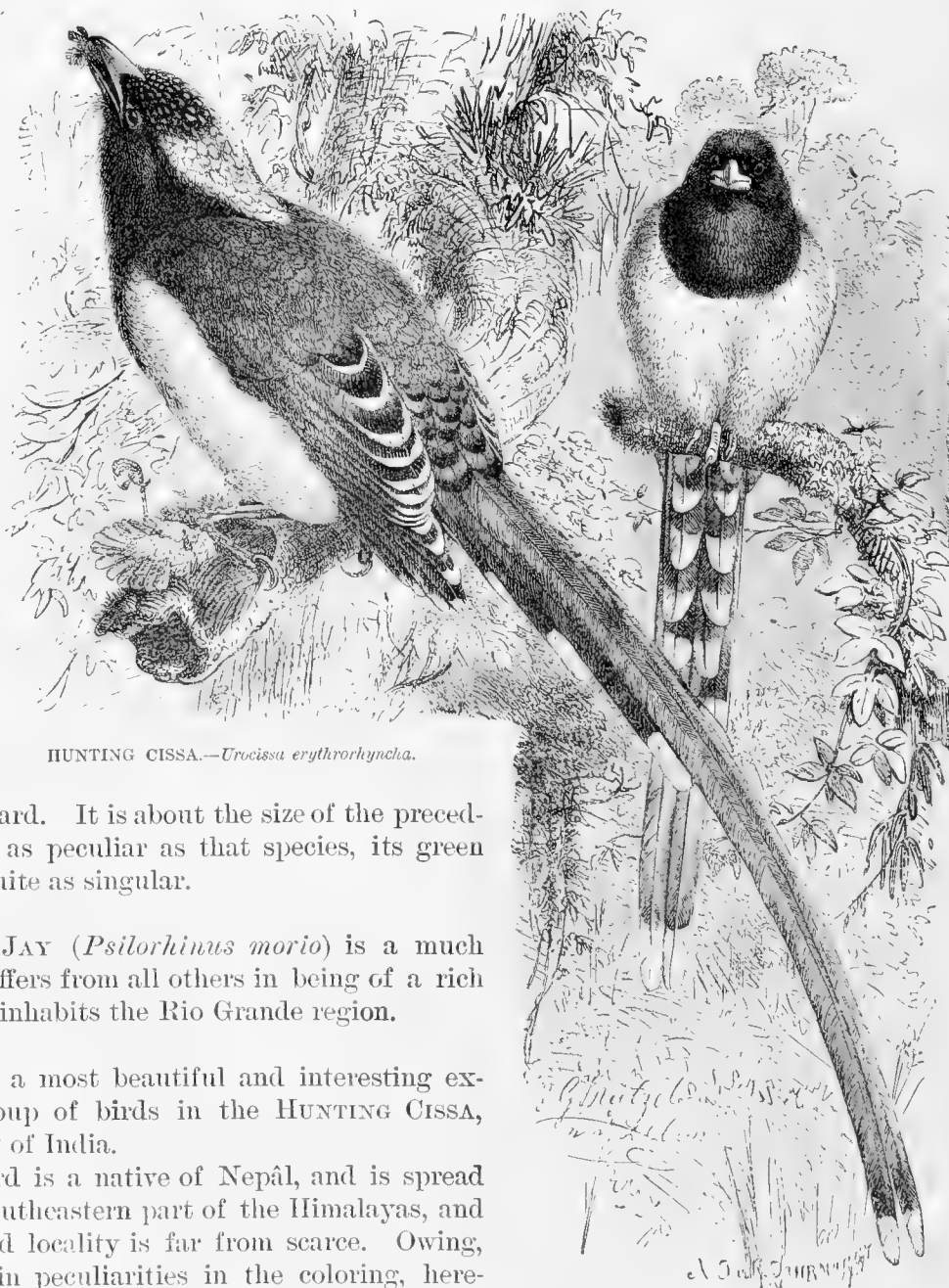
THE GREEN JAY (*Xanthura luxuosa*) inhabits the valley of the Rio Grande, in Texas, and southward. It is about the size of the preceding, and is nearly as peculiar as that species, its green and white being quite as singular.

THE BROWN JAY (*Psilorhinus morio*) is a much larger bird, and differs from all others in being of a rich umber-brown. It inhabits the Rio Grande region.

ASIA presents a most beautiful and interesting example of this group of birds in the HUNTING CISSA, or HUNTING CROW of India.

This lovely bird is a native of Nepâl, and is spread throughout the southeastern part of the Himalayas, and in its own favored locality is far from scarce. Owing, however, to certain peculiarities in the coloring, hereafter to be described, a specimen is very seldom obtained in first-rate condition, and never takes its place in our museums glowing in all the resplendent tints with which it is so liberally gifted. It is a very brisk and lively bird, and, like many others of the same group, is much given to imitating other birds, performing its mimicry with wonderful truth, and copying not only their voices, but even their peculiar gestures.

It is much more carnivorous in its tastes than would be imagined from an inspection of



HUNTING CISSA.—*Urocissa erythrorhyncha*.



its form and plumage, and it possesses many of the habits of the shrikes, not only killing and eating the smaller birds, but hanging its food upon branches in true shrike fashion. It is an excellent hunter, and as it can be easily tamed and taught to hunt after small birds for the amusement of its owner, it has earned the name of Hunting Crow. In its native country it is very commonly kept in captivity. The voice of the Hunting Cissa is loud and screeching, but possesses withal a certain joviality of utterance that renders it far from unpleasing.

The color of this bird is singularly beautiful, and may challenge comparison with that of any other bird of either hemisphere. The general hue is pale but bright grassy-green, very vivid upon the upper parts, and taking a yellowish tint below; there is also a dash of yellow across the forehead and the sides of the crest. A broad black band crosses the forehead, and, enveloping the eye in its progress, passes round the back of the neck. The quill-feathers of the wing are mostly bright chestnut-red, and the tips of the inner quill-feathers are gray, diversified with a bold semilunar black band near their extremities. The central feathers of the tail are green, taking a grayer tinge at their extremities, and all the other tail-feathers are bright green for the first two-thirds of their length, are then crossed with a bold broad black band, and the tips are grayish-white. The legs, bill, and feet are bright scarlet. The size of the Hunting Cissa is about equal to that of a common magpie.

These beautiful colors are unfortunately never seen except for a very short time after moulting, as they rapidly fade by exposure to light, even during the life of the bird, and after its death become comparatively dingy. The delicate and brilliant grass-green of the upper surface soon takes a more sober hue, and before many days have elapsed, the general color of the bird is simply gray with a greenish wash, in place of the rich resplendent tints which it had so lately boasted.

### TREE-CROWS.

BETWEEN the true Crows and the Jays, another small sub-family has been placed by the authors whose arrangement we follow, and is known by the title of *Calleatínæ*, or TREE CROWS. In these birds there is no tooth in the upper mandible, and the bill is comparatively short, curved, and rather rounded above. They are only to be found in the warmer parts of the eastern hemisphere, and many of them are quite as carnivorous as any of the preceding *Corvidæ*, some feeding chiefly upon insects of various kinds, and others varying their diet with small birds and quadrupeds.

THE BENTEOT, one of these birds, is a native of Java, where it is not very scarce, but is seldom seen except by those who go to search for it, as it is extremely timid, and is never known to approach within a considerable distance of human habitations, as is the case with the generality of the Crow tribe. Sometimes it may be seen cautiously making its way towards some newly-cleared ground, in the hope of making a meal on the worms, grubs, and other earth-living creatures that are generally to be found in freshly-turned soil, and also for the sake of feeding upon the fruits of the trees that skirt the field. Should, however, the land be near a house, the Benteot holds aloof, and declines to put itself into danger.

Part of this excessive timidity may, perhaps, be owing to the fact that it is by no means a strong or rapid flyer, its wings being short and rounded, and its flight in consequence weak and not capable of long duration. It usually flies by day, and, according to Mr. Horsfield, "may be seen about noon, sailing heavily through the air in a right line towards the trees surrounding the openings in the forest." The strong bill and powerful claws show that the bird is well adapted for the capture of insects and disinterring them from their subterranean hiding-places, as well as for eating the various hard-shelled fruits on which it partly subsists. In color the Benteot appears at a little distance to be nearly black, but on a close approach its plumage is seen to be a very dark and rather dull green, "shot" plentifully with a deeper hue of bronze.

ANOTHER and more beautiful member of this group is an Asiatic bird, very common in the naturalist's shop and in glass cases, and known by the popular and very appropriate name of the "WANDERING PIE."

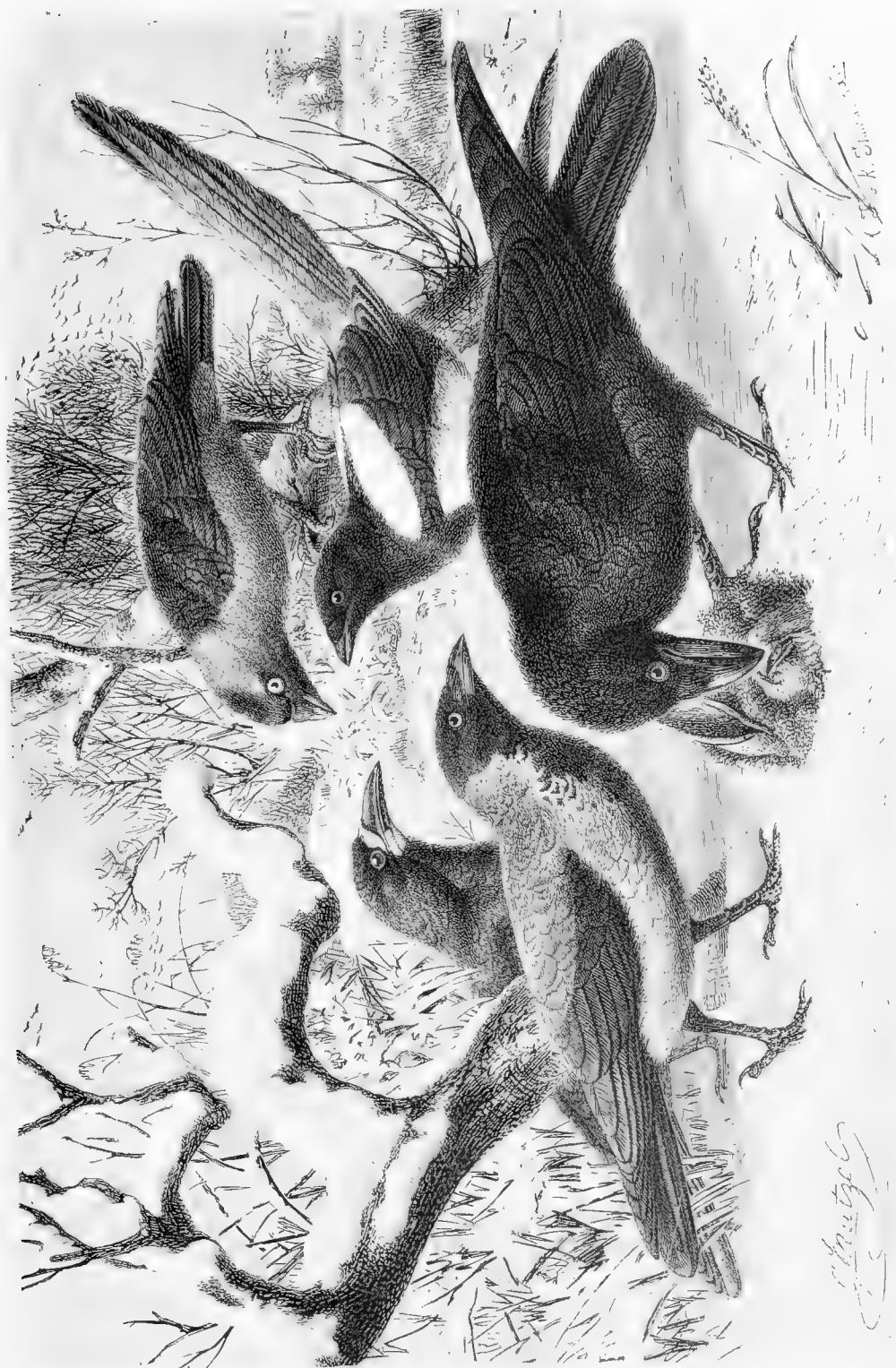
This bird is a native of the Himalayas, and is found in some numbers spread over a large part of India. It is called the Wandering Pie on account of its habit of wandering over a very large extent of country, travelling from place to place and finding its food as it best may, after the fashion of a mendicant friar. This custom is quite opposed to the general habits of the Pies, who are remarkable for their attachment to definite localities, and can generally be found wherever the observer has discovered the particular spot which they have selected for their home. Mr. Gould suggests that its wandering habit may be occasioned by the necessity for obtaining subsistence, the Wandering Pie feeding more exclusively on fruits and other vegetable nutriment than is generally the case with the Crow tribe, and being therefore forced to range over a large extent of land in search of its food. Indeed, the short legs and very long tail of this species quite unfit it for seeking its living on the ground, and clearly point out its arboreal habits.

The shape of this species is very remarkable, on account of the greatly elongated and elegantly shaped tail, which is colored in a manner equally bold with its form. The general color of this bird is blackish-gray upon the upper parts, warming into cinnamon upon the back. The quill-feathers of the wings are jetty-black, the wings themselves gray, and the tail-feathers gray, with a large, bold bar of black at their extremities. The under surface of the bird is light grayish-fawn. The two central feathers of the tail are extremely long, and the others are graduated in a manner which is well exemplified in the accompanying illustration. Although it appears to be a rather large bird, the aspect is a deceptive one, on account of the long tail, which is ten inches in length, the remainder of the head and body being only six inches long.



WANDERING PIE—*Dendrocitta rufa*.





GROUP OF RAVENS.



## THE TRUE CROWS.

WE now arrive at the true Crows, which, like the preceding group, have no tooth in the upper mandible, but may be distinguished from them by the greater comparative length of the wings.

THE first of these birds on our list is the celebrated RAVEN, our finest representative of the family.

This truly handsome bird is spread over almost all portions of the habitable globe, finding a livelihood wherever there are wide expanses of uncultivated ground, and only being driven from its home by the advance of cultivation and the consequent inhabitation of the soil by human beings. It is a solitary bird, living in the wildest district that it can find, and especially preferring those that are intersected with hills. In such localities the Raven reigns supreme, hardly the eagle himself daring to contest the supremacy with so powerful, crafty, and strong-beaked a bird.

The food of the Raven is almost entirely of an animal nature, and there are few living things which the Raven will not eat whenever it finds an opportunity of so doing. Worms, grubs, caterpillars, and insects of all kinds are swallowed by hundreds, but the diet in which the Raven most delights is dead carrion. In consequence of this taste, the Raven may be found rather plentifully on the sheep-feeding grounds, where the flocks are of such immense size that the bird is sure to find a sufficiency of food among the daily dead; for its wings are large and powerful, and its daily range of flight is so great, that many thousands of sheep pass daily under its ken, and it is tolerably sure in the course of the day to find at least one dead sheep or lamb. Sometimes the Raven accelerates matters, for if it should find an unfortunate sheep lying in a ditch, a misfortune to which these animals are especially prone, it is sure to cause the speedy death of the poor creature by repeated attacks upon its eyes. Weakly or ailing sheep are also favorite subjects with the Raven, who soon puts an end to their sufferings by the strokes of his long and powerful beak. Even the larger cattle are not free from the assaults of this voracious bird, which performs in every case the office of a vulture.

So strongly is the desire for attacking wounded or dying animals implanted in the breast of the Raven, that, according to Mudie, the best method of attracting one of these birds within gunshot is to lie on the back on some exposed part of a hill, with the gun concealed and close at hand. It is needful to remain perfectly quiet, because if there is the slightest sign of life the Raven will not approach, for, as Mudie rather quaintly observes, "he is shy of man and of all large animals in nature; because, though glad to find others carrion, or to make carrion of them if he can do it with impunity, he takes good care that none shall make carrion of him." It is equally needful to watch carefully and not to be overcome by sleep, as the first indication of the Raven's approach would to a certainty be the loss of an eye.

"But if you lie on your back," says Mudie, "he will come you know not whence, and hovering round you on slow wing, examine you from all points. If you do not stir, he will drop down at a little distance, and begin to hop in an *échelon* fashion, bringing his shoulders forward alternately, after a few hops on each line of the zigzag. Sometimes he will utter his 'cruck-cruck,' and pause to see if that makes you stir, and if it does not, he will accelerate his advance."

Sheep and cattle do not, however, form the whole of a Raven's diet, for besides the insects which have already been mentioned, this bird eats mice, rabbits, birds of various kinds, including young partridges and pheasants, and will invade the farm-yard when pressed by hunger, and carry off the young poultry. Even the hedgehog falls a victim to the Raven, who cares nothing for his spiked armor, but drives his sharp bill through the poor beast, tears away the prickly skin, and devours the carcase at his leisure. In Northern America, and indeed in many other countries, the Raven is a regular attendant on the hunters, and follows them for the purpose of feeding upon the offal of the creatures which they kill.

The tongue of the Raven is rather curiously formed, being broad, flat, covered with a horny kind of shield, and deeply cleft at the extremity. At the root are four rather large projections or spines, the points being directed backwards. The use of these spines is not known, though Mr. Buckland suggests that they may be for the purpose of preventing the food from being thrown back into the mouth. I do not, however, think that this suggestion is sufficient, as there is no reason why the Raven should regurgitate its food more than other birds which feed on similar substances. If the bird were in the habit of eating living prey, such as lizards and other reptiles which retain life for a considerable period and after considerable injuries, this idea might be a good one, but as the Raven always kills its prey before eating it, the theory will not hold its ground.

The cunning of the Raven is proverbial, and anecdotes of its extraordinary intellectual powers abound in various works. From the great mass of these stories I can only select one or two which are not generally known.

One of these birds struck up a great friendship for a terrier dog belonging to the landlord of an inn, and carried his friendship so far as to accompany his ally in little hunting expeditions. In these affairs the two comrades used to kill an astonishing number of hares, rabbits, and other game, each taking his own share of the work. As soon as they came to a covert, the Raven would station himself outside, while the dog would enter the covert and drive out the hares from their concealment, taking care to send them in the direction of the watchful bird. On his part the Raven always posted himself close to one of the outlets, and as soon as any living creature passed within reach, he would pounce upon it, and either destroy it at once or wait until the dog came to his assistance, when by their united efforts the prey was soon killed. Rat-hunting was a favorite sport of these strange allies, and it was said by those who witnessed their proceedings, that the Raven was even more useful than a ferret would have been.

Another and very amusing anecdote of the Raven and its cunning is related by Captain McClure, the well-known Arctic voyager. Speaking of the behavior of various birds and beasts during the winter, he remarks that the Raven is the hardiest of the feathered tribe, and even in the depths of winter, when wine freezes within a yard of the fire, the Raven may be seen winging his way through the icy atmosphere and uttering his strange rough, croaking cry, as unconcernedly as if the weather were soft and warm as an English spring. "Two Ravens," he observes, "once established themselves as friends of the family in Mercer Bay, living mainly by what little scraps the men might have thrown away after meal times.

"The ship's dog, however, looked upon them as his especial perquisites, and exhibited considerable energy in maintaining his rights against the Ravens, who nevertheless outwitted him in a way which amused every one. Observing that he appeared quite willing to make a mouthful of their own sable persons, they used to throw themselves intentionally in his way just as the mess-tins were being cleared out on the dust heap outside the ship. The dog would immediately run at them, and they would just fly a few yards; the dog then made another run, and again they would appear to escape him but by an inch, and so on, until they had tempted and provoked him to the shore a considerable distance off. Then the Ravens would make a direct flight for the ship, and had generally done good execution before the mortified-looking dog detected the imposition that had been practised upon him, and rushed back again."

Not long ago, I saw a Raven in a great brewery, holding a large sausage in his beak, and flapping about the yard just in front of one of the draymen, to whom the stolen dainty had evidently belonged. The bird would not trouble itself to make its escape, but in the most provoking manner hopped along just a yard or so before its pursuer, and from all appearance as likely to carry on the same game for an hour or two; for while I was sitting, the relative positions of the parties did not alter in the least. If the man stopped, the bird stopped too, and began to make such evident preparations for swallowing the sausage that the drayman rushed at it again, and again the bird would just flap a yard or two in advance.

In captivity the Raven is a most amusing, although a terribly mischievous creature, and displays a talent for the invention of mischief which can only be equalled by its rapidity of execution and audacity of demeanor. Except when placed in an inclosed yard where there is

nothing that is capable of damage, a single Raven will get through more mischief in one hour than a posse of boys in twelve; and as he always seems to imagine himself engaged in the performance of some extremely exemplary duty, and works his wicked will as methodically as if he had been regularly trained to the task and very well paid for it, he excites no small amount of rage on the part of the aggrieved person. I have personally known several tame Ravens, but as I have already recorded their performances elsewhere, I shall not here repeat the story of their ill deeds.

The Raven is an excellent linguist, acquiring the art of conversation with wonderful rapidity, and retaining with a singularly powerful memory many sounds which it has once learned. Whole sentences are acquired by this strange bird, and repeated with great accuracy of intonation, the voice being a good imitation of human speech, but always sounding as if spoken from behind a thick woollen wrapper. So remarkable is the cunning of this bird, and so weird-like its aspect, that the ancient Scandinavians had good cause for the trembling respect which they paid to the sullen "Bird of Odin." Their idea of the Raven was, that it was accustomed to watch for Odin's return every evening, and, perched upon his shoulder, to relate all the incidents that had taken place on earth within its ken.

As the bird is so crafty, its capture would seem to be a very difficult business, and the number of tame Ravens now existing in England seems to be almost remarkable. The fact is, that while still unfledged the young ravens have a strange habit of falling out of their nests, and flapping their wings heavily to the ground. Next morning they are found by the shepherds, sitting croaking on the ground beneath their former homes, and are then captured and taken away with comparative ease. Even in this case, however, to secure one of the young Ravens is no slight task, for, on seeing that escape is impossible, it turns boldly to bay, and makes such fierce attacks with its powerful beak that it must be enveloped in a cloth or a plaid before it can safely be held. It is remarkable that when a Raven makes its assault it does not merely peck with its beak, but flings its whole weight upon the blow.

The Raven is also celebrated for its longevity, many instances being known where it has attained the age of seventy or eighty years, without losing one jot of its activity, or the fading of one spark from its eyes. What may be the duration of a Raven's life in its wild state is quite unknown.

The color of the Raven is a uniform blue-black, with green reflections in certain lights. The female is always larger than her mate.

The Raven (*Corvus corax carnivorus*). On the steep and almost inaccessible cliffs of Grand Menan a few Ravens breed, but none are seen elsewhere, excepting in the Northwest. Around Niagara Ravens are rather common. It is observed that where these birds abound the Crows are not seen. This bird is regarded as identical with the European species.

A species, found in Florida, having the under side of the feathers a pure white, is called the White-necked Crow.

THE COMMON CROW (*Corvus frugivorus*) is abundant throughout America to the Missouri region, and is also common on the California coast. It is not found on the high central plains. In New England, during mild winters, it is resident through the year. The Crow is eminently gregarious.

Wilson says: "Towards the close of summer the parent Crows, with their new families, forsaking their solitary lodgings, collect together as if by previous agreement, when evening approaches. About an hour before sunset they are observed flying, in Indian file, in one direction, at a short height above the trees, silent and steady, keeping the general curvature of the ground, continuing to pass sometimes until after sunset, so that the whole line of march would extend several miles. This circumstance, so familiar and picturesque, has not been overlooked by the poets in their description of a rural evening. Burns in a single line has finely sketched it:

"The blackening trains of Crows to their repose."

The Crow feeds equally well on grain and insect food, reptiles and shell-fish. It has a habit of mounting to a certain height, and dropping any shell-fish it cannot break otherwise,

upon the rocks. Their carnivorous propensity sometimes prompts them to seize upon young fowl and eggs. A variety rather smaller, called the Florida Crow, is known.

THE common CARRION CROW, so plentiful in many countries, much resembles in habits and appearance the bird which has just been described, and may almost be reckoned as a miniature raven.

In many of its customs the crow is very raven-like, especially in its love for carrion, and its propensity for attacking the eyes of any dead or dying animal. Like the raven, it has been known to attack game of various kinds, although its inferior size forces it to call to its assistance the aid of one or more of its fellows before it can successfully cope with the larger creatures. Rabbits and hares are frequently the prey of this bird, which pounces on them as they steal abroad to feed, and while they are young is able to kill and carry them off without difficulty. The Crow also eats reptiles of various sorts, frogs and lizards being common dainties, and is a confirmed plunderer of other birds' nests, even carrying away the eggs of game and poultry by the simple device of driving the beak through them and flying away with them thus impaled. Even the large egg of the duck has thus been stolen by the Crow. Sometimes it goes to feed on the seashore, and there finds plenty of food among the crabs, shrimps, and shells that are found near low-water mark, and ingeniously cracks the harder shelled creatures by flying with them to a great height and letting them fall upon a convenient rock.

The Crow, unlike the rook, is not a gregarious bird, being generally seen either single or in pairs, or at the most only in little bands of four or five, consisting of the parents and their children. In the autumn evenings, however, they assemble in bands of ten or twelve before going to roost, and make a wonderful chattering, as if comparing notes of the events which have occurred during the day, and communicating to each other their latest experiences, for the benefit of the rising generation.

The nest of the Crow is invariably placed on some tree remote from the habitations of other birds, and is a structure of considerable dimensions, and very conspicuous at a distance. It is always fixed upon one of the topmost branches, so that to obtain the eggs safely requires a steady head, a practised foot, and a ready hand, the uncultivated germs of the professional acrobat.

Generally the nest is rather loosely constructed, and more saucer than cup-shaped; but I remember an instance where it was very firmly made and quite deep. In a little copse that was planted along one side of a valley, an oak-tree had sprung up about half-way down the declivity, and, as is the custom with trees in such situations, had grown inclining towards the somewhat abrupt angle formed by the shape of the ground on which it stood. As there had been formerly many other trees around it, it had been drawn up like a maypole, being long, slender, and swinging about with every breeze. The tree was not more than forty feet high; but as it was bent in the middle and bowed over the valley, its summit was nearly a hundred feet from the ground below.

It was with the greatest difficulty that I reached the nest, for the tree yielded like a carter's whip with my weight, although I could not approach nearer than arm's length to the nest, and after three attempts I was finally baffled in my endeavor to obtain the eggs. Although the top of the tree was then nearly level with the horizon, and swinging about most alarmingly in the wind that rushed through the valley, not an egg was thrown out of its place, and the nest was so much deeper than ordinary, that I could not succeed in withdrawing the eggs from their cradle. It seems an easy matter to take eggs out of a nest; but if the reader will bear in mind that when the slender tree-stem to which one is clinging bends nearly double with one's weight, that the elasticity of the wood dances one up and down through an arc of four or five feet, and that a strong wind is at the same time acting on the foliage of the tree and swaying it from side to side, and that there is a clear fall of some hundred feet below, he will comprehend that it is not so simple a matter to spare a hand long enough to take an egg from a rather distant spot, and to do so in so delicate a manner that the egg remains unbroken.

The materials of which the Crow's nest is made are very various, but always consist of a



foundation of sticks, upon which the softer substances are laid. The interior of the nest is made of grasses, fibrous roots, the hair of cows and horses, which the Crow mostly obtains from trees and posts where the cattle are in the habit of rubbing themselves, mosses, and wool. The eggs are extremely variable, or rather individual, in their markings, and even in their size, those in my own collection being so different from each other that an inexperienced person would set them down as belonging to different species. The Crow very seldom uses the same nest for a second breeding season, although it often repairs to the same locality year after year. Once or twice it has been known to lay its eggs on the same foundation as it had employed during the previous season, but in general it pulls the former nest to pieces, and constructs a fresh one on its site.

This bird is remarkable for its attachment to its mate and young, far surpassing the fawn and turtle-dove in matrimonial courtesy.

The Somali Arabs bear a deadly hatred towards the Crow, and kill it whenever they meet with it. The origin of their detestation is as follows: During the flight of Mohammed from his enemies, he hid himself in a cave, where he was perceived by the Crow, at that time a light-plumaged bird, who, when it saw the pursuers approach the spot, sat over Mohammed's hiding-place, and screamed, "Ghar! ghar!" *i. e.*, "Cave! cave!" so as to indicate the place of concealment. His enemies, however, did not understand the bird, and passed on, and Mohammed, when he came out of the cave, clothed the Crow in perpetual black, and ordered it to cry "ghar" as long as Crows should live. When they have killed a Crow, the Arabs remove the gall, employing it for the manufacture of collyrium, or dye for the eyelids.

The color of the Crow is a uniform blue-black, like that of the raven, but varieties are known in which the feathers have been pied or even cream-white.

THE most familiar of all the Corvidæ is the common Rook, a bird which has attached itself to the habitations of mankind, and, in course of time, has partially domesticated itself in his dominions.

The Rook may claim the doubtful honor of having originated two of the most pertinacious and persistent ornithological controversies on record. The subject of the first is its conduct towards man—whether it is to be looked upon as a feathered benefactor, or must be ranked among the "vermin." This dispute has now been carried on for many years, and finds as many and as eager advocates on both sides of the question as on the day on which it was started. The second controversy is quite as fierce as the former, and has lately revived with tenfold vigor, the subject being the cause and effect of the naked white skin which is found at the base of the Rook's beak. Before proceeding further, we will just say a word or two on these interesting discussions.

Firstly, as to the relation in which the Rook stands to mankind with regard to its conduct. It is thought by many persons of practical experience that the Rook is one of the greatest enemies to the farmer, eating up his grain as soon as planted, pecking up his potatoes and devouring all the "sets," boring holes in his turnips, and altogether doing exceeding mischief in the fields. The farmer, therefore, detests the "blackening train" of Rooks with a very heartfelt hatred, and endeavors by all kinds of contrivances, such as scarecrows, boys with noisy clappers, and loud voices, or even the gibbeted dead bodies of slaughtered Rooks, to keep them off his grounds. Whenever he can find a chance he shoots them, but the bird is so cautious that very few Rooks fall victims to the agricultural gun. The gamekeepers also hate the Rook as a persecutor of their charge, and in truth the Rooks have been actually seen engaged in the destruction of young partridges, and one of them was shot with the prey still in its beak.

Moreover, the Rook has been seen to attack a hen pheasant while sitting on her eggs, to pull the feathers out of the mother bird, and to destroy her eggs, having evidently been attracted to the spot by the large bunch of hay-grass amid which the nest had been placed, and which had been left standing by the mowers in order to afford a shelter to the poor bird.

So much for the one side of the question; we will now proceed to view the Rook from a more favorable point of view.

The advocates of this bird (of whom I confess myself to be one) do not deny that the Rook is on occasions somewhat of a brigand, and that it has small scruples when pressed by hunger in eating eggs or the young of other birds. Also they fully admit that it pulls up a great number of green corn-blades almost as soon as they show their emerald tops above the dark soil, that it digs up the potatoes, and throws the fragments about the ground, eating no small number of them, and that it often bores a turnip so full of holes that it pines away and dies. But although granting thus much, yet they think the Rook a most beneficial bird to the agriculturist.

For its depredations on game they attempt no excuse, but only offer an apology on the ground that the affair is very rare, and that condonation may be granted to the bird in consideration of the great services rendered in other parts of the year. They aver that its object in pulling up the young corn-sprouts is not so much to eat the corn as to devour that pest of the farmer, the terrible wireworm, which lurks at the root of the corn, and infallibly destroys every plant which it has once attacked. That such has been the case may often be seen by the yellow and unhealthy aspect of the destroyed blades which are left scattered on the ground after the extraction of the wireworm. Potatoes again are attacked by numerous insect foes, and it is to eat these that the Rook unearths the "sets." It is true that bits of potato have been found in the Rook's crop, but in all probability they have been casually eaten together with the insects that are lurking within. The same remark may be made of the turnips.

Besides performing these services, the Rook saves acres of grass annually from being destroyed by the grub of the common cockchaffer beetle. The grub or larva of this insect is one of the most destructive foes to grass lands, feeding upon the roots and shearing them very nearly level with the surface of the ground by means of its scissor-like jaws. So destructive are these insects, and so complete are their ravages, that a person has been able to take in his hands the turf under which they had been living and to roll it up as if it had been cut with a spade. In one place, the grubs were so numerous that they were counted by the bushel. When it is remembered that this creature lives for three years underground, is furnished with a huge stomach, a wonderful capability of digestion, and a formidable cutting apparatus for obtaining its food, the services of the Rook in destroying it may be better imagined. Moreover, the beetle is just as destructive as the grub, settling upon trees and fairly stripping them of their leaves. I have dissected many of these grubs, and always found their stomachs distended to the utmost with a mixture of black earth and vegetable matter.

Again when the ploughman is turning up the soil, how common, or rather how invariable, a sight it is to see the Rooks settling around him, alighting in the furrow which he makes, and seizing the grubs and worms as they are turned up by the share. Not a single worm, grub, or other insect escapes the keen eye and ready bill of this useful bird. Some idea of the extensive character of its operations may be formed from the following remarks by Mr. Simeon, in his interesting work, entitled "Stray Notes on Fishing and Natural History":—

"I was walking one day with a gentleman on his home farm, when we observed the grass on about an acre of meadow land to be so completely rooted up and scarified that he took it for granted it had been done under the bailiff's direction to clear it from moss, and on arriving at the farm, inquired whether such was not the case. The answer was, however, 'Oh, no, sir, we have not been at work there at all; it's the Rooks done all that.' The mistake was a very natural one, for though I have often seen places where grass has been pulled up by Rooks, yet I never saw such clean and wholesale work done by them as on this occasion. It could not apparently have been executed more systematically or perfectly by the most elaborate 'scarifier' that Croskill or Ransome could turn out.

"On examining the spot afterwards, I found that the object of the Rooks' researches had doubtless been a small white grub, numbers of which still remained in the ground a short distance below the surface. In the following spring I noticed that the part of the field where this had taken place was densely covered with cowslips, much more so than the rest of it. Possibly the roots of these plants may have been the proper food for the grubs, and therefore selected by the parent insect as receptacles for her eggs."

The Rook also feeds upon berries and various fruits, being especially fond of oak-nuts, and having a curious habit of burying them in the earth before eating them, by which means, no doubt, many a noble oak-tree is planted. It also eats walnuts, and is fond of driving its bill through them and so taking them from the tree. The cones of the Scotch fir are also favorite food with the Rook, which seizes them in its beak, and tries to pull them from the bough by main force; but if it should fail in this attempt, it drags the branch forcibly upwards, and then suddenly releases it, so as to jerk the cones from their stems by the recoil.

The practice of terrifying Rooks by means of scarecrows has already been mentioned, together with its usual failure. Even the bodies of slaughtered Rooks suspended from sticks have but little effect on these audacious birds, who may be seen very unconcernedly searching below the carcasses for the beetles and other carrion-eating insects that are always found in such localities. The surest way to frighten the Rooks by means of dead comrades is not to hang them up in a position which every Rook knows is not likely to be assumed by any of its friends, and therefore conveys no intimation of alarm to its logical mind, but to lay them flat upon the earth with outstretched neck and spread wings as if they had fallen dead from something evil in the locality. Another useful method is to post a number of sticks in double rows and connect them with each other by strings tied in zigzag fashion, when it will be found that the Rooks are so suspicious of a trap, that they will not venture to enter any of the angles so formed.

The second subject of controversy is the presence of a bare white skin upon the forehead of the adult Rook and the base of its neck, those portions being clothed with feathers during the bird's youth.

The general opinion was that the bird, by constantly delving in the soil, wore off all the feathers, only leaving the white skin behind. This solution of the problem was current for a long time, until some observer remarked that the base of the bill showed no particular marks of hard wear; that the bald space extended behind the line of the eyes, so that the bird could not possibly plunge its beak to so great a depth; that the white skin was evidently an intentional arrangement, and was too well defined at the edges to have been produced by the operation of digging, and must in that case always vary with the soil and the kind of food; moreover, there are many other birds which have bald spaces on their persons, such as the vultures and the turkey, and that in their case no theory of friction is required by which the phenomenon can be accounted for.

Matters having proceeded thus far, dissection was next employed, and it was observed that although feather bulbs could be found within the white skin, they were shrivelled and useless for the production of feathers. Experiments were then tried, wherein sundry young Rooks were kept caged, and denied access to any earth or mouldy substances; and in every case except one (and probably in that case also when the bird had attained maturity) the feathers with which the base of the back were covered fell off in the course of moulting, and were never replaced by fresh plumage. Every ornithologist knows well that many birds when young are distinguished by feathery or hairy tufts, as in the case of the Leatherhead, described on page 160 of this work, which, when young, is decorated with a tuft of plummy hair upon its head; but after the moult, loses its cranial ornament. Mr. Simeon pertinently remarks, in allusion to this controversy, that a similar phenomenon may be seen in the human race, the forehead of a baby being often covered with fine downy hairs, which fall off as the child grows; and that in the elephants of Ceylon, the young is often clothed with a thick woolly fur over its head and fore parts when born, but loses its covering as it approaches maturity. Altogether it seems that those who advocate the naturally bare forehead and beak have the best of the argument.

The habits of the Rook are very interesting, and easily watched. Its extreme caution is very remarkable, when combined with its attachment to human homes. A colony of a thousand birds may form a rookery in a park, placing themselves under the protection of its owner; and yet, if they see a man with a gun, or even with a suspicious-looking stick, they fly off their nests with astounding clamor, and will not return until the cause of their alarm

is dissipated. During the "Rook-shooting" time, all the strong-winged birds leave their nests at the first report of the gun, and, rising to an enormous elevation, sail about like so many black midges over their deserted homes, and pour out their complaints in loud and doleful cries, which are plainly audible even from the great height at which they are soaring. The voice of the Rook is too well known to need description, and the bird is rather capricious in the utterance of its hoarse cry, sometimes keeping a prolonged silence, and at other times cawing about incessantly.

In captivity the Rook retains many of its wild customs, and in one instance was in the habit of going round the hens' nests and eating the eggs as soon as they were laid. The Rook is not often kept as a domestic pet, as it is with difficulty reared when young. Before rain, the Rook has a curious custom of ascending to a considerable height, and then shooting obliquely through the air, in a manner somewhat similar to a hawk making its swoop. During the daytime, the Rooks are widely dispersed throughout the fields, occasionally visiting their homes and then returning to their feeding-places; but, as the evening approaches, they cease feeding with one accord, and seek their nests, flying in long trains to the spot where they have made their residence.

The nest of the Rook is large, and rather clumsily built; consisting chiefly of sticks, upon which are laid sundry softer materials as a resting-place for the eggs. The Rook is a very gregarious bird, building in numbers on the boughs of contiguous trees, and having a kind of social compact that often arises into the dignity of law. For example, the elder Rooks will not permit the younger members of the community to build their nests upon an isolated tree at a distance from the general assemblage; and if they attempt to infringe this regulation, always attack the offending nest in a body, and tear it to pieces. They are even clever enough to notice the marks that are made on the trunks of trees that are to be felled, and will neither build on those doomed branches nor permit their young friends to do so. They also have a kind of criminal code, for they have been seen to hold a sort of trial, ending in the condemnation and execution of the culprit; and they unanimously punish those lazy Rooks which, instead of going out to fetch sticks for their nests, stay quietly at home and rob those of other Rooks.

The number of birds that are to be found in such rookeries is enormously great, several thousands having been counted in a single assemblage. In such cases they do great damage to the upper branches of the trees, and in some instances have been known to kill the tree, by the continual destruction of the growing boughs.

The color of the Rook is a glossy, deep blue-black; the blue being more conspicuous on the wing-coverts and the sides of the head and neck. The bird may be easily recognized, even at a distance, by the conspicuous grayish-white skin, which serves to distinguish it from the crow. The length of an adult Rook is about eighteen or nineteen inches.

THE smallest of the Corvidæ is the well-known JACKDAW, a bird of infinite wit and humor, and one that has an extraordinary attachment for man and his habitations.

Although of similar form, and black of plumage, the Jackdaw may easily be distinguished from either the rook or the crow by the gray patch upon the crown of the head and back of the neck, which is very conspicuous, and can be seen at a considerable distance. The voice, too, is entirely different from the caw of the rook or the hoarse cry of the crow, and as the bird is very loquacious, it soon announces itself by the tone of its voice. It generally takes up its home near houses, and is fond of nesting in old buildings, especially preferring the steeples and towers of churches and similar edifices, where its nest and young are safe from the depredations of stoats, weasels, and other destroyers. Indeed, there are few places where Jackdaws will not build, provided that they are tolerably steep and high; and there are many curious circumstances in connection with its nesting, which will presently be mentioned.

In its wild state the Jackdaw has many of the rook habits, and therefore needs no particular description. Mudie, however, mentions a curious circumstance, which seems to point out a closer relationship between rooks and Jackdaws than could be supposed. "In the latter part of the season, when the rooks from one of the most extensive rookeries made daily excur-

sions of about six miles to the warm grounds by the seaside, and in their flight passed over a deep ravine in the rocky sides—or rather side, for they only inhabited the sunny one—on which there were many Jackdaws, I have observed that when the cawing of the rooks in their morning flight was heard at the ravine, the Jackdaws, who had previously been still and quiet, instantly raised their shriller notes and flew up to join the rooks, both parties clamoring loudly as if welcoming each other, and that on the return, the time of which was no bad augury of the weather of the succeeding day, the Daws accompanied the rooks a little past the ravine; then both cawed their farewell and departed.

“What is more singular, I have seen, too frequently for its being merely accidental, a Daw return for a short time to the rooks, a rook to the Daws, or one from each race meet between and be noisy together for a space after the bands had separated. With the reason I do not interfere, not being in the secrets of either party, but the fact is as certain as it is curious.”

In captivity, to which it accommodates itself with most philosophical composure, the Jackdaw is a very amusing bird, and soon learns many curious tricks. I have already recorded many anecdotes of some tame Jackdaws in “My Feathered Friends,” published by Messrs. Routledge, to which the reader is referred, as well as for a more detailed history of the rook, magpie, and many others of the same tribe. I will therefore refrain from repeating them, and only give one or two anecdotes of a Jackdaw that belonged to one of my friends, and which was to the full as remarkable a bird as any that I have met with.

He was imitative in the extreme, and more than once had put the house in danger by his passion for lighting lucifer matches, of which amusement he was as fond as any child. On one occasion he lighted the kitchen fire in the course of the night. The cook had laid the fire overnight, intending to apply the match early in the morning. The Jackdaw contrived to get hold of the lucifer box, and had evidently rubbed the match upon the bars and so set fire to the combustibles, as the cook found the fire nearly burnt out, the Jackdaw in the kitchen, and some eighteen or nineteen exploded matches lying in the fender.

The first time that this Jackdaw lighted a match he was so frightened at the sharp crackling report that he ran away as fast as he could go, coughing and sneezing after his fashion from the fumes of the sulphur, he having held the match close to the phosphoric end. He never seemed to distinguish the ignitable end of the match, and would rub away with great perseverance on the blank end, without discovering the cause of his failure. By degrees he contrived to singe all the feathers from his forehead and nostrils, and once burned his foot rather severely.

He was greatly afraid of thunder, and had a singular power of predicting a coming storm. In such a case he would retire to some favorite hiding-place, generally a dark hole in a wall, or a cavity in an old yew which exactly contained him, and would there tuck himself into a very compact form so as to suit the dimensions of his hiding-place, his body being tightly squeezed into the cavity and his tail projecting along the side. In this odd position he would remain until the storm had passed over, but if he were called by any one whom he knew, his confidence would return, and he would come out of his hole very joyously in spite of the thunder, crying out, “Jack’s a brave bird!” as if he entirely understood the meaning of the sentence. He may possibly have had some idea of the sense of words, for he hated being called a coward, and would resent the term with all the indignation at his command.

There are, however, few birds which are possessed of the ingenuity which characterized this Jackdaw, for it may be noticed that every bird has its own individuality strongly marked, even though the same type of intellectual power may characterize it in common with all others of the same tribe.

Another Jackdaw, belonging to one of my friends, was a most inveterate poacher, having taken to himself an associate or accomplice in the person of the cat belonging to the house. This oddly-matched couple used to make their egress and ingress through a hole in the bottom of a very thick quickset hedge, and as soon as they emerged into the open fields, would immediately hunt for game. Their mode of catching and killing game was not clearly ascertained, but its successful results were evident from the frequency with which they used to bring home

dead hares, often as large as the cat, but generally small. On one occasion a singular fluttering of wings and scratching of claws was heard in the hedge, and when the owner of the two animals went to ascertain its cause, he found that they had brought home a hare so large that they could not drag it through the hole in the hedge, and were quite frantic in their eagerness to attain their object, the cat pulling from within, and the Jackdaw pushing from without.

In the "Annals of Sporting" is recorded a curious anecdote of the attachment displayed by the Jackdaw to its owner. The relator of the anecdote, after making a few casual remarks, proceeds as follows: "I pulled up for the first time to bait at a well-known hotel, and soon after my arrival a young man rode into the inn-yard from the opposite direction, and dismounted at the door of the tap-room belonging to the establishment. Almost immediately following this common event, a Jackdaw alighted on a shed adjoining, which, however, as those birds are frequently kept at such places, did not attract any particular attention, till the ostler called out, 'Ah! here you are then, again, true to the old house and young master.' I immediately asked whom he meant 'Why, Jack, Sir, yonder!' pointing to the Daw. 'And what of him?' I went on to inquire. 'Oh! Sir, he is a most 'cute and cunning fellow, and follows his master wherever he goes, either on horseback or on foot.' This awakened my interest, and I received these further particulars of this extraordinary bird.

"He belonged to the son of the ostler, and was constantly fed and taken care of by him, until he became quite his familiar friend; so much so, indeed, that the circumstance created wonder in the vicinity of its home. So convinced was the ostler of the faith and devotion of his feathered acquaintance, that on one particular occasion, as he was setting off, on horseback, he made a wager—a large one for him—of two bowls of punch, with a person who doubted that the bird would obey the call of his master and follow his route. He then mounted, and exclaiming, 'Come, Jack, I'm going!' put his horse in motion. In a very short time the bird's wings were extended, and he attended the progress and return of his feeder, leaving not the shadow of a plea for the non-payment of the bet which the sceptic had so unwittingly ventured.

"This, and some other circumstances which my informant mentioned, induced me to watch more narrowly the motions of the bird, and I observed him constantly hopping from place to place, and every now and then pitching upon the sill of the window that lighted the tap-room, in order to ascertain if his travelling companion was still within. On one occasion, indeed, he pressed quite anxiously into the room, and observing him he sought not inclined immediately to move, he took a flight in a circular direction for nearly half a mile, returning again to his former station. Soon after this the man prepared his horse, Jack mounted upon the sign-post, and as soon as the former had ridden about a hundred yards on his road to Staines, he fluttered his dark pinions and followed the well-remembered track of the ostler-boy of Staines."

The gray patch on the head and neck is not seen until the bird attains maturity, the feathers being of the same black hue as on the remainder of the body until the first moult, when the juvenile plumage is shed and the adult garments assumed.

The nest of the Jackdaw is a very rude structure of sticks, lined, or rather covered, with hay, wool, feathers, and all kinds of miscellaneous substances of a warm kind for the eggs and young. It is placed in various localities, generally in buildings or rocks, but has often been found in hollow trees, and even in the holes of rabbit-warrens, the last mentioned locality being a very remarkable one, as the young birds must be in constant danger of marauding stoats and weasels. In one instance a quantity of broken glass was employed in the foundation of the nest. The Jackdaw is not choice in the selection of feathered neighbors, for I have found in the same tower the nests of pigeons, Jackdaws, and starlings, in amicable proximity to each other. The eggs are smaller and much paler than those of the rook or crow, but have a similar general aspect. Their number is about five.

The general color of the Jackdaw is black, with the exception of the back of the head and the nape of the neck, which are gray. A decided tinge of glossy blue is perceptible on the wings. The total length of the adult Jackdaw is about fourteen inches. The female is distinguishable from her mate by the darker color of the gray hood. In both sexes the wings

are short, and when closed do not reach within an inch of the tip of the tail. As is the case with many others of the same tribe, there are instances of pale and pied Jackdaws, the wings and tail being generally darker than the remainder of the body. In the British Museum there is a good specimen of an albino jay, the body being creamy white, while the wings retain the barred blue and black so characteristic of the species, but extremely pale.

Sometimes the Jackdaw will take possession of the deserted nest of a rook or crow, and laying a substratum of hay and wool upon the original fabric, deposit its eggs and rear its young upon this easily-gotten property. Occasionally, but very rarely, the Jackdaw has been seen to build a regular nest in the branches of trees, rocks, or rabbit-warrens—ruins and church-towers being wanting.

THE remarkable bird which has very appropriately been called the GREAT-BILLED CROW, is, undoubtedly, the most singular example of the whole tribe.

In its dimensions it is much larger than an ordinary crow, and rather smaller than a raven, for which bird it might be taken but for the extraordinary beak. The bill of this species is



GREAT-BILLED CROW.—*Corvus crassirostris*.

so large as to remind the observer of a toucan or a puffin, and the bite of such a powerful weapon must be most formidable. It is very deep, thick, and rounded, becoming wider at the top and deeply ridged, curving suddenly to a point, and very sharp at its extremity. In color it is jetty-black, except the extreme tip, which is white.

The color of this bird is deep shining black on the upper parts, like that of the raven, having a slight purplish gloss upon the sides. Upon the back of the neck there is a pure white oval mark, and upon the shoulders there is another white patch of a crescentic shape; the two being connected with a narrow line of white down the back of the neck, so that the whole shape of the mark resembles an orange in a wine-glass. The Great-billed Crow is a native of Abyssinia.

THE ROYSTON CROW, or HOODED CROW, or GRAY CROW, is a very conspicuous bird, on account of the curiously pied plumage with which it is invested.

This bird is found plentifully in Europe, except in England, having been seen in large flocks of several hundred in number on the east coast of Jura. Generally it is not very gregarious, the

male and female only being found in company; but it sometimes chooses to associate in little flocks of fifteen or sixteen in number. It seems to prefer the seacoast to any inland locality, as it there finds a great variety of food, and is not much exposed to danger. I have often seen these birds perching upon the rocks at low water, and searching for food among the dank seaweed, and in the rock-puddles that are left by the retreating tide. They seemed always extremely bold, and would permit a very close approach without exhibiting any alarm.

The food of the Hooded Crow is almost wholly of an animal nature, and consists of small quadrupeds, carrion of every kind, worms, insects, marine animals, and the miscellaneous mass of animal substances which are cast up by the tide and left upon shore. Limpets form a considerable portion of its food, and are detached from the rock, to which they cling so tightly, by an adroit peck and wrench of the bill. Sometimes it is said that the poor Crow is not quick enough in its movements, and is held so firmly to the rock by the alarmed limpet, that it is retained in that unpleasant position until the returning tide overwhelms both mollusk and bird.

Mussels and cockles are also favorite dainties with the Hooded Crow, which, however, is unable to open their tightly-closed shells with its beak, and has recourse to the expedient of carrying its prey to a great height in the air, and smashing the shell by letting it fall upon a rock. Sometimes its ingenuity has been very ill rewarded by the loss of its dinner, for no sooner has the shell struck upon the rock than it is seized and carried off by another Hooded Crow which has concealed itself near the spot. As the mussels are often very firmly bound to the rock, this ingenious bird employs another mode of breaking their shells. He takes a tolerably large stone in his beak, rises perpendicularly above the mussel bed, drops the stone at random upon the black mass of mollusks below, and descends to feed on the bodies of those which have been crushed by the missile.

Not only does the Hooded Crow feed upon such harmless diet as has already been mentioned, but it makes great havoc among small and young birds, and has often been known to hover about the shore sportsman, and carry off the dead and wounded birds as they fall to the gun. It also haunts the farm-yard when it finds a deficiency of food in the open country, and darting among the poultry, kills and carries off young chickens, or breaks and drains the eggs on which the hens are sitting. Sickly and very young lambs are also persecuted by this voracious bird, who goes its rounds among the flocks as regularly as a sentinel, and if its watchful eye should discover a lamb or sheep lying on its back in a ditch, is sure to hasten its death by punching out its eyes with its long and powerful bill. For these reasons, the Hooded Crow is entirely detested by the country people, many of whom are imbued with sundry superstitions concerning its origin and object.

Like many of the same tribe, it is a most annoying neighbor to the larger birds, especially those of a rapacious nature, and never can allow a hawk, heron, or owl to pass within ken without mobbing it in a very persevering manner.

The Hooded Crow never breeds in society, but always builds its nest at some distance from the homes of any other of the same species, so that, although a forest or a range of cliffs may be inhabited by these birds, the nests are scattered very sparingly over the whole extent. The structure of the nest is somewhat similar to that of the crows and rooks, being a mass of sticks and heather stalks as a foundation, upon which is placed a layer of wool, hair, and other soft substances. Sometimes the bird builds a better and more compact nest with the bark of trees; and in all cases this species breeds very early in the season.

It is said that the Hooded Crow will sometimes breed with the common species, and the following curious observations are recorded in the "Field Naturalist," and quoted by Mr. Yarrell in his history of the bird:—

"For four successive years I have had opportunities of witnessing the pairing of the carrion Crow and the Hooded Crow upon some large beech-trees which surrounded my house. They never re-occupied the old nest, nor did they always build their nest on the same tree; nor was I positively certain that they were the same individuals who returned every year to these trees, though it is probable that they were, for they were never molested. Knowing the



predatory propensities of the carrion Crow on hens' eggs, young chickens, and even turkey poults, I would have shot them had they been a pair of carrion Crows; but I was anxious to watch the result of what appeared to me at the time a remarkable union.

“Judging from the manners of the two birds, the almost evident incubations and carefulness exhibited, I should say that the Hooded Crow is the female, though the carrion Crow did frequently sit upon the eggs. After the young of the first year took wing, I perceived that the one was a carrion and the other a Hooded Crow, and this distinctive character was maintained in the young which were hatched every year, so long as I remained in that part of the country. I shot the first young pair, and ascertained that the hooded one was the female, and the carrion was the male, which confirmed me in my conjecture of the sexes of the parents. Ever after, old and young were unmolested by me; but notwithstanding the increase of number every year after the first one, only one pair came annually to build in these beech-trees.”

This species has often been tamed, and displays much affection for its owner. One of these birds, which had been wounded and captured, was placed in a walled garden together with the poultry, with whom it soon made friends. In process of time it recovered from its wound, took flight and disappeared. But after an absence of some months it returned to its old quarters, and voluntarily took its place again with the poultry in the well-remembered spot, and was quite as familiar with the owner of the house as any of the hens.

The Hooded Crow is boldly and conspicuously pied with gray and black, distributed as follows: The head, back of the neck, and throat, together with the wings and tail, are glossy bluish-black, while the remainder of the body is a very peculiar gray, with a slight blackish wash. The length of the bird is about nineteen or twenty inches. It goes by many names in different parts of the country, among which Dun Crow, Hoody, and Hoddy are the most common.

THE PHILIPPINE CROW derives its name from the locality in which it is found, its place of residence being the Philippine Islands.

It is a striking and handsome bird on account of the elegant crest which decorates its head, and the general hue of its plumage. It is not a large bird, measuring only eleven inches in total length. The color of the upper parts of the body is pale green, dashed with yellow here and there, according to the direction of the light, and a similar tint, but with more yellow, under the throat. A black band runs round the head, enveloping the eye in its progress, and is partially covered by the loose, flowing feathers of the crest. The dense wing-coverts are brown, the quill-feathers are deep olive-green on their exterior sides, and the secondaries are tipped with white with a slight dash of green. The bill and legs are of a reddish hue.

THE FISH CROW of America is about the size of the common jackdaw, its length being generally about sixteen inches. Our chief information of this bird and its habits is derived from Wilson; and as his account cannot be condensed without great loss of its original vigor and freshness, it is here given at length:—

“I first met with this species on the sea-coast of Georgia, and observed that they regularly retired to the interior as evening approached, and came down to the shores of the river Savannah by the first appearance of day. Their voice first attracted my notice, being very different from that of the common Crow, more hoarse and guttural, uttered as if something stuck in their throat, and varied into several undulations as they flew along. Their manner of flying was also unlike the others, as they frequently sailed about without flapping their wings, something in the manner of the raven; and I soon perceived that their food and their mode of procuring it were also different, their favorite haunts being about the banks of the river, along which they usually sailed, dexterously snatching up with their claws dead fish or other garbage that floated on the surface. At the country seat of Stephen Elliot, Esq., near the Ogechee river, I took notice of these Crows frequently perching on the backs of the cattle, like the magpie and jackdaw of Britain, but never mingling with the common Crows, and differing

from them in this particular, that the latter generally retire to the shore, the reeds, and marshes, to roost, while the Fish Crow always a little before sunset seeks the interior high woods to repose in.

“On my journey through the Mississippi territory last year, I resided for some time at the seat of my hospitable friend, Dr. Samuel Brown, a few miles from Fort Adams, on the Mississippi. In my various excursions there, among the lofty fragrance-breathing magnolia woods and magnificent scenery that adorn the luxuriant face of nature in these southern regions, this species of Crow frequently make its appearance, distinguished by the same voice and habits it had in Georgia.

“There is in many of the ponds there, a singular kind of lizard, that swims about with its head above the surface, making a loud sound not unlike the harsh jarring of a door. These, the Crow now before us would frequently seize with his claws as he flew along the surface, and retire to the summit of a dead tree to enjoy his repast. Here I also observed him a pretty constant attendant at the pens where the cows were usually milked, and much less shy, less suspicious, and more solitary than the common Crow. In the county of Cape May, New Jersey, I again met with these Crows, particularly along Egg-Harbor river, and latterly on the Schuylkill and Delaware, near Philadelphia, during the season of shad and herring fishing, viz., from the middle of March until the beginning of June. A small party of these Crows during this period regularly passed Mr. Bertram’s gardens to the high woods to roost every evening a little before sunset, and as regularly returned at a little before sunrise every morning, directing their course towards the river. The fishermen along these rivers also inform me that they have particularly remarked this Crow by his croaking voice and his fondness for fish; almost always hovering about their fishing-places to glean up the refuse.

“Of their manner of breeding I can only say that they separate into pairs and build in tall trees near the sea or river shore; one of their nests having been built this season in a piece of tall woods near Mr. Beasley’s, at Great Egg Harbor. From the circumstance of six or seven being usually seen here together, in the month of July, it is probable that they have at least four or five young at a time.”

The color of the Fish Crow is deep steel-blue, appearing black in certain lights, and glazed in many places with rich purple. When closed, the tips of the wings do not reach within two inches of the end of the tail.

An American species, named the Northwestern Fish Crow, inhabits Washington Territory and the northwest coast. It is much like the common Crow, differing somewhat in size.

The common Fish Crow is a southern species. It is exceedingly abundant in Florida, but is an occasional straggler in New England. It is readily distinguished from the common Crow by its size, being smaller, and by certain differences of bill and tail-feathers. The gloss of the belly is green instead of violet.

THE very curious bird which is known by the appropriate name of the BALD CROW is so different in aspect from the remainder of the genus, that it has been separated from them by common consent.

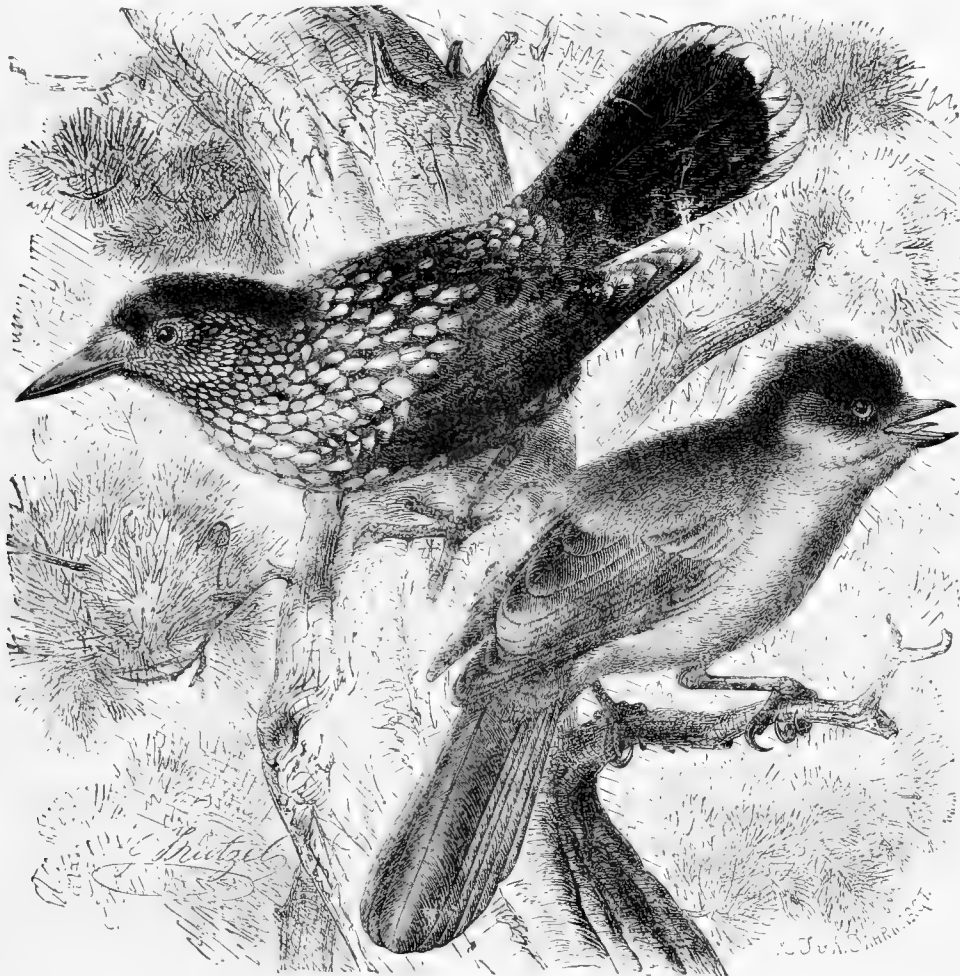
It hardly looks like a Crow, but reminds the observer of a cross between the hooded Crow, the darter, and the leather-head. Although small and slender in make, it is longer than many birds of much greater proportions, on account of the extremely long neck. The legs, too, are much more elongated than in any of the true Crows. The head is entirely denuded of feathers, or even hairs, and is covered with a blackish-brown skin, drawn closely over the skull and bones of the head. On the back of the head and neck, the place of feathers is supplied by a scanty covering of white down. The back is black-brown, as is also the tail, and the wings are of a remarkably pure and beautiful mouse-brown. The neck, throat, and under surface are yellowish-white. The total length of this bird is about fifteen inches.

THE small but handsome and striking bird which is popularly called the NUT-CRACKER CROW is tolerably common in several parts of Europe, and has been seen in Switzerland

in large flocks, feeding upon the seeds of the pine-trees after the fashion that has gained for the bird its name of Nut-cracker. This species feeds mostly upon seeds, especially those of the pine, the beech, and various nuts, and it breaks the hard shells by fixing the nut or pine-cone in a convenient crevice, and hammering with its beak until it has exposed the kernel. Indeed, while engaged in this pursuit, its movements are almost precisely those of the common nuthatch. It is a rather shy and suspicious bird, keeping closely to the tops of trees, and mostly being beyond the range of an ordinary shot-gun.

It does not, however, feed wholly on seeds, but varies its diet with insect food, in pursuit of which it ranges for a considerable distance over the country seeking the insects either on the ground or on the trees—generally the latter.

By means of the powerful bill and neck muscles, the Nut-cracker is able to dig out the large-bodied grubs which are found deeply buried in the wood of various trees, and which it discovers through its quick sense of sight and hearing.



NUT-CRACKER and EUROPEAN JAY.—*Nucyfraga caryocatactes* and *Perisoreus infaustus*.

The Nut-cracker is common in Southern Europe, and is also a visitant of the more northern regions of that continent, being frequently seen in Norway, and even migrating so far north as the great pine-forests of Russia, Siberia, and Kamtschatka. Sometimes the Nut-cracker becomes carnivorous in its taste, after the manner of the corvidæ in general, and robs sitting birds of their eggs, or even seizes and eats their callow young. It is a very active bird, traversing the branches with great rapidity, and being able to climb the perpendicular trunk of a tree almost as well as the creepers. That it frequently puts this accomplishment in practice is evident from the fact that the tips of the tail-feathers are often found to be worn away, evidently by the pressure which they have exerted against the rough bark of the trees.

The nest of this species is made at the extremity of a long tunnel cut in the wood of some decaying tree, and either originally dug by the bird, with the express object of making a resting-place for its eggs, or altered and adapted from an already existing hole. In this respect, as well as in other habits, the Nut-cracker bears some resemblance to the woodpeckers. The eggs are said to be from five to six in number, and grayish-yellow in color, spotted with a darker hue. The bird seems to require a large supply of nourishment; and although it cannot be ranked among the true migrators, it can range over a large extent of country in search of food, being instinctively able to discover the localities where its wants can be best supplied.

The coloring of this bird is peculiar, and rather complicated. The crown of the head is deep brown, and the space between the beak and the eye is grayish-white. The back, the sides of the head, the scapularies, the wing-coverts, and the whole of the under surface of the body are of a warm brown, covered thickly with elongated white spots, caused by the white tips with which each feather is furnished. The throat and chin take a darker hue, but are still marked with the conspicuous white spots. The wings and upper tail-coverts are dark black-brown, the black being less marked at the extremities of the feathers. The tail is mostly blackish-brown, diversified with white, the two central feathers being totally dark, and the remainder taking more white as they approach the two external feathers. The under surface of the tail is light gray-brown. The total length of the Nutcracker is about thirteen or fourteen inches.

AMERICA possesses a very pretty example of this genus in the CLARK'S NUT-CRACKER (*Picicorvus columbianus*).

This bird is notable for the diversified beauty of its plumage, and for the extremely formidable claws with which it is armed; the latter peculiarity leading to the idea that the bird preys on various living animals, after the manner of the fish crow. It frequents the rivers and sea-shore in considerable numbers, assembling in flocks, like the rook of Europe, and pouncing continually upon various substances which it immediately swallows. It is a very noisy as well as gregarious bird, chattering continually while feeding.

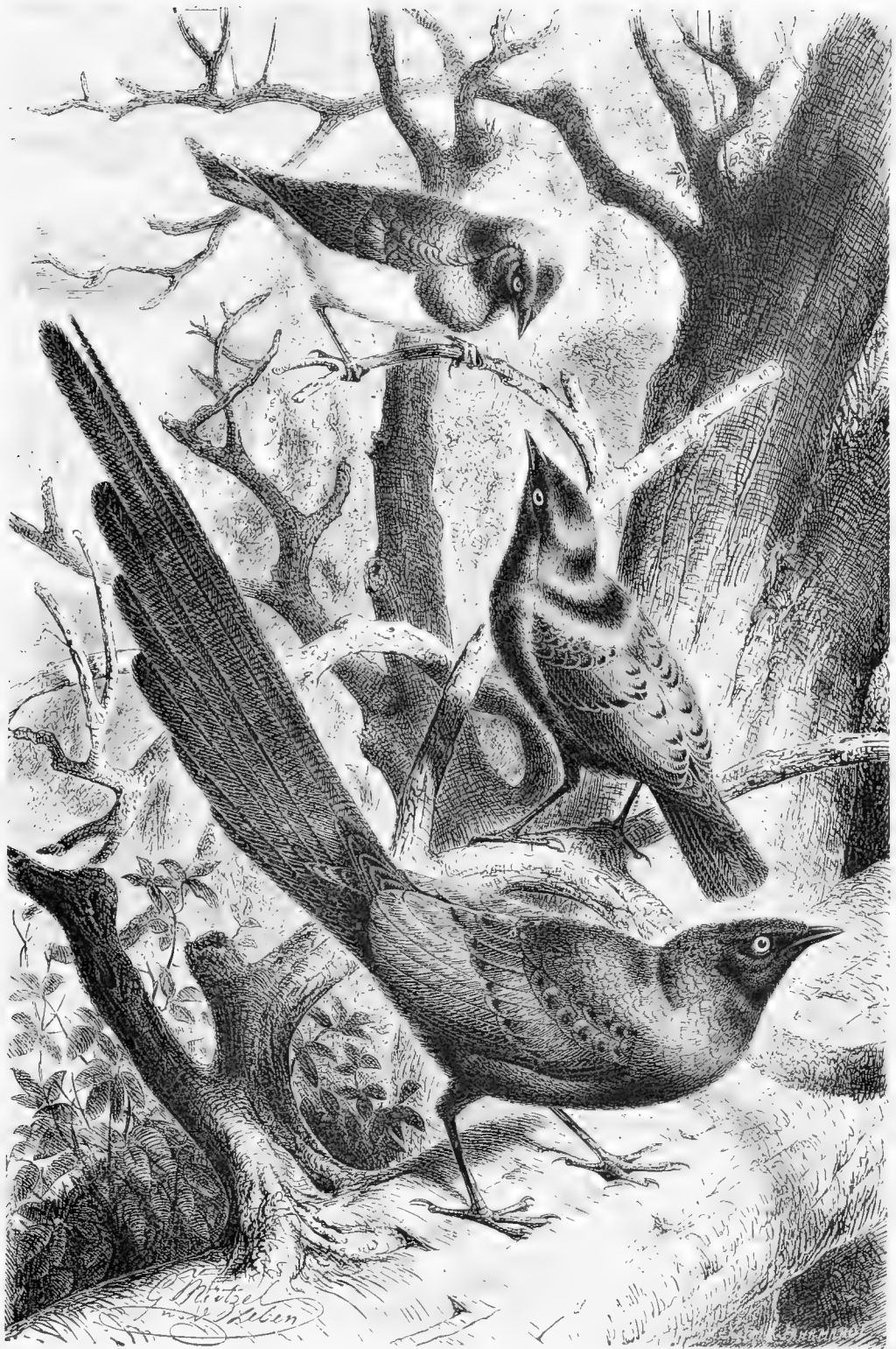
The wings, the two central tail-feathers, and several of the remaining feathers of the tail are deep glossy blue-black, and the secondaries are also black, but are marked with a large patch of white. The head, neck, and greater part of the body is light fawn, changing to a pearly gray upon the breast and abdomen. The total length of this bird is about thirteen inches.

Clark's Crow is like the Jackdaw of Europe. It inhabits the region between the Rocky Mountains and the Pacific Ocean. Its color is quite unlike the typical crow, being a light slate color and white. In some localities it is called Nut-cracker.

MAXIMILIAN'S JAY, or NUT-CRACKER (*Gymnocitta cyanocephala*). A species first discovered by the Prince Maximilian, of Niew Wied. It inhabits the Rocky Mountains, and the cascades of California and Oregon. Its color is much like the typical coloration of the Jays; though in this case the blue is very pale.

WHO does not know the MAGPIE, the pert, the gay, the mischievous? What denizen of the country is not familiar with his many exploits in the way of barefaced and audacious theft, his dipping flight, and his ingenuity in baffling the devices of the fowler and the gunner? What inhabitant of the town has not seen him cooped in his wicker dwelling, dull and begrimed with the daily smoke, but yet pert as ever; talkative, and a wonderful admirer of his dingy plumage and ragged tail?

The Magpie is found in very many parts of the world, always keeping to well-wooded districts, as if distrusting its power of flight in the open country; for the larger hawks are prone to fly at the Magpie, which has but little chance of escape upon the plain, but can always evade his foe among hedge-rows and plantations by slipping among the branches and dodging through the foliage. Even a trained falcon fails to catch a Magpie when it has once reached such an asylum.



STARLINGS AND MAGPIE.



and the falconer is forced to drive it from its refuge before the hawk can secure its prey. In some parts of Europe, Magpie hawking is a favorite amusement, for the Magpie is to the full as cunning as a fox, and in spite of all the array of beaters, hounds, and horsemen, not unfrequently baffles its pursuers, and makes its escape in safety.

The food of the Magpie is as multifarious as that of the crow or raven, and consists of various animal and vegetable substances. It is a determined robber of other birds' nests, dragging the unfledged young out of their homes, or driving its bill through their eggs and thus carrying them away. Even hens' nests are not spared by this bold and voracious bird, who, however, sometimes falls a victim to its marauding propensities. The aggrieved poultry-owner, after removing the eggs from all the hens' nests, empties one of the eggs, and fills it again with bird-lime. This prepared egg is then placed in the nest as a bait for the Magpie, who soon returns to the scene of its former robberies, drives its beak into the egg and makes off with its booty. Its triumph is, however, very short-lived, for the bird soon finds itself unable to get rid of the stolen egg in the usual manner, and at last batters it against a stone or branch for the purpose of breaking the shell. The natural consequence is, that the bird-lime immediately clings to the beak, and the broken fragments of shell, which fly in every direction, cover the wings and plumage as the bird tries to shake itself loose from its impediments, and the Magpie falls to the ground in a hopelessly crippled state, and becomes an easy victim to the author of the snare.

The Magpie also attacks full-grown birds, mice, reptiles of various kinds, and has been observed in the act of killing a common grass snake. Beetles it eats in very large quantities, and also feeds upon worms, snails, and various similar creatures, so that the harm which it does to the game and poultry is probably more than compensated by its good offices in ridding the gardens and cultivated grounds of their varied foes. It also eats fruits, and has been seen to feast eagerly on the light succulent berries of the mountain ash.

Like the crow, the Magpie is a determined persecutor of various birds and beasts of prey, scarcely allowing a hawk to pass within ken, or a weasel or stoat to glide along the bottom of a hedge without screeching forth an alarm and a summons to its allies, and dashing at once to the attack. Mr. Metcalf relates, that while in Norway, he saw his dog pursued and mobbed by at least forty of these birds. The same writer also remarks, that he captured a Magpie by means of a piece of meat on a hook. The bird took the bait as eagerly as any perch would have done, and, to its profound astonishment, was immediately hooked. Mr. Metcalf amused himself a little while in "playing" the bird as if it had been a fish, with this difference, that the Magpie was trying to escape by flight, and poured forth a succession of most dismal yells, which sent off all its formerly valiant companions screaming with terror at the unexpected sight.

The nest of the Magpie is a rather complicated edifice, domed, with an entrance at the side, and mostly formed on the exterior of thorn-branches, so as to afford an effectual protection against any foe who endeavors to force admittance into so strong a fortress. Generally the nest is placed at the very summit of some lofty tree, the bird usually preferring those trees which run for many feet without a branch. The tops of tall pines are favorite localities for the Magpie's nest, as the trunk of these trees is bare of branches except at the summit, and the dark green foliage of the spreading branches is so thick that it affords an effectual shelter to the large and conspicuous edifice which rests upon the boughs. Sometimes, however, when the Magpie has been protected, and accustomed itself to the vicinity of human habitations, it has fixed its nest in a low bush near the ground, as if trusting to the kindly feelings of its human neighbors.

Although displaying great attachment to its mate, and the most dauntless courage in defending its nest and young, its affections seem to be rather transient in their character, and quite unable to withstand the test of absence. For example, if one Magpie of a pair be shot, the survivor never fails to find another mate within the space of two or three days. Sometimes the period of widowhood exists only for some twenty-four hours, and there have been instances where a Magpie has found another mate within a few hours after the decease of its former spouse.

When tame, it is a most amusing bird, teaching itself all kinds of odd tricks, and learning to talk with an accuracy and volubility little inferior to that of the parrot. It is, however, a most incorrigibly mischievous bird, and unless subjected to the most careful supervision is capable of doing a very great amount of damage in a wonderfully short space of time. I have witnessed a multitude of these exploits, but as I have already related many of them in my "Feathered Friends," the reader is referred to the pages of that little work for a tolerably long series of new and original Magpie anecdotes.

Mr. Thompson tells an amusing story of a tame Magpie which struck up a friendship with a peculiarly long-wooled sheep. The bird was accustomed to sit on the back of its friend, couching luxuriantly upon the long thick fleece, and making short excursions among the sheep for the purpose of pecking their legs, and making them run about. He also employed the fleece of his friend as a treasury of stolen goods, being accustomed to hide his pilferings among the thick wool and mount guard over them. The same writer has published the following interesting account of a tame Magpie belonging to a doctor, who communicated to him the story, from which the following is an extract:—

"He was particularly fond of any shining article, such as spoons and trinkets; these he frequently stole, and we came upon his treasure-house in a remarkable way. There was an old gentleman, a great friend of my father's, who resided with us almost continually. He was of a peculiarly studious disposition, but from a deformity in his person used generally to read *standing*, with his arms and breast resting on the back of a chair, and the book placed on a table before him. After having read for a while, it was his habit to take off his spectacles, lay them beside him, blow his nose, take a pinch of snuff, and after a few moments pondering what he had been reading, resume the spectacles and proceed.

"One very warm day I lay reading at the end of a room in which there was an open glass door leading to the greenhouse; in this room the old gentleman was most intently pursuing his studies at a little distance from me. My attention was soon arrested by seeing the Magpie perched upon the chair near him, eying him most intently, and with a very arch expression, and at length, in an instant, he had with a most active hop reached the table, secured the red leathern spectacle-case, and was out of the glass door with the most noiseless wing, and with a very graceful motion.

"I remained quiet, resolved to see the end of the joke. After a few seconds' absence, 'Jack' was again at his post, eying the old gentleman with a most inquisitive and yet business-like glance; it was nearly impossible to resist the ludicrous impression produced by the entire scene. At length off came the spectacles, and out came the pocket-handkerchief and snuff-box; quick as thought Jack had visited the table and was out of the open door with the prize, which I have no doubt had from the beginning been the object of his covetous admiration while they were on the nose of the old gentleman. This time the Magpie did not return, either because he found it more difficult to reach his store-house with the spectacles than with the case, or because, having gained the object of his ambition, he conceived his presence was no longer necessary.

"At length, the period of rumination having elapsed, the old gentleman was about replacing the spectacles. As soon as his surprise had abated at not finding them with his hand beside him on the table, he removed the chair and groped about on the carpet, then raised the book and examined every part of the table. Not being able to restrain myself any longer, I exploded in laughter, and of course I was instantly suspected of playing off a practical joke, and charged with taking the spectacles, but at length succeeded in convincing him that I had never risen from the sofa on which I reclined. After a good deal of laughing, and two or three other members of the family having been attracted to the room by the hubbub, I was compelled under cross-examination to own that I had witnessed Jack's abstractions.

"The question then became serious how the articles were to be recovered, and some person suggested to leave a teaspoon near him and watch him. This was accordingly done, but his motions were so rapid that he eluded us all, seeming at first to pass completely over the house. At length, by placing two or three persons in favorable positions, he was 'marked' in a leaden



valley between a double part of the roof, and this having been closely searched, a deposit was discovered, not only of the things which Jack had that day carried off, but also of some articles which had been for some time supposed to be lost, but respecting which a breath of suspicion as to him had never been entertained. This day's successful foray led to his losing his entire store, no doubt in the midst of his triumphant rejoicing."

THE BLACK-BILLED MAGPIE (*Pica rustica*) differs from the European only in being larger, and having a longer tail. It is said, also, that its voice is quite different. Its *habitat* is over the Great Plains to the Pacific. The nest is curiously contrived to conceal the long tail-feathers, which would be too conspicuous for the safety of the female—it is domed by loose overhanging branches and sticks. These birds, in numbers, prove troublesome to travellers; they annoy the cattle and horses that have sore backs, and they also steal their corn.

The YELLOW-BILLED MAGPIE, a variety of the preceding, is found in California.

ALTHOUGH imported into Ireland at a comparatively late period, the Magpie has taken complete possession of that island, and is found in very great numbers, four or five being often seen within a few hundred yards of each other. The beautiful wings of this bird are much sought after for the purpose of being dried, flattened, and mounted on hand-screens; the two wings being mounted with their external quills together, so as to form a screen of a heart-like shape.

Many superstitious ideas have always been current respecting the Magpie, its appearance singly, doubly, or trebly being held as an omen of good or bad luck, and various predictions being made from the direction in which it appeared to the observer. In many countries respective tales and doctrines are still held by high and low alike. In the latter part of 1860, an official despatch was presented to the Chamber of Deputies at Dresden, requesting a supply of Magpies for the purpose of manufacturing a powder all-potent against epilepsy. Great stress was laid upon the two points, that the birds must be neither deficient in claws nor feathers, and that they must be shot between the 24th of December and the 18th of January. This extraordinary document was not only presented and read in good faith, but was backed by many noble names.

The plumage of this bird is remarkably handsome both in color and form. The head, neck, back, and upper tail-coverts are deep black, with a slight green gloss in certain lights; and the same color is found on the chin, the throat, the upper part of the breast, and the base, tips, and outer edges of the primary quill-feathers. The secondaries are also black, but with a blue gloss, which becomes peculiarly rich on the tertiaries and wing-coverts. The inner web of the primaries is white for a considerable portion of its length, presenting a bold and conspicuous appearance when the bird spreads its wings. The central feathers of the tail are nearly eleven inches in length, and they decrease gradually in size; those on the exterior being hardly five inches long. Their color is a wonderfully rich mixture of the deepest blue, purple, and green, the green being towards the base, and the blue and purple towards the extremity. The under surface of the tail-feathers is dull black. The lower parts of the breast, abdomen, and flanks are snowy white. The total length of the adult male bird is about eighteen inches, the female being rather smaller and with a shorter tail.

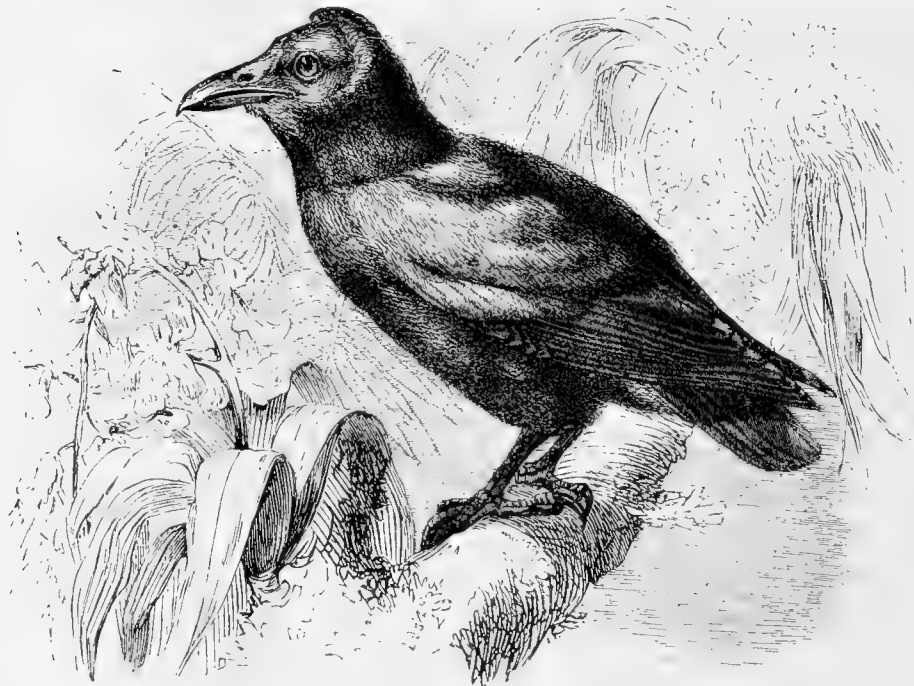
## FRUIT CROWS.

THE Fruit Crows are placed by some systematic authors among the Chatterers, while others as in the catalogue which we follow, have considered them to be nearly related to the true Crows. They are all natives of Southern America, and are distinguished by their straight flattened beak, with its upper mandible round, and a notch at its extremity. The nostrils are placed in two membranous grooves at each side of the bill. Most of the Fruit Crows are of considerable dimensions, some species equalling the Crows of Europe, while others are a little less.

THE BARE-NECKED FRUIT CROW inhabits Brazil and Guiana, and is far from uncommon in those countries. It is not a very large bird, hardly equalling the common jackdaw in size, but is worthy of notice on account of the peculiarity from which it derives its popular name. Instead of being covered with the usual plumage, the upper part of the head, the back of the neck, and the throat are clothed with very minute and closely-set feathers of a very deep black, so that the bird looks as if the neck had been denuded of feathers, and covered with a piece of neatly-sewn black velvet. On the sides of the neck even this slight clothing is absent, the plumage being represented merely by a few scanty feathers of down. The general color of the feathers is black in the male, and brownish-gray in the female, excepting the wing-coverts and the edges of the central quill-feathers, which are slaty-gray. The Bare-necked Fruit Crow is not at all an elegant bird in its form, being heavily made and thick-set.

THERE are several other members of this curious group, such as the BALD FRUIT CROW, called also the CAPUCHIN BALD HEAD, on account of the peculiarity which has earned for it the popular titles by which it is known. In allusion to the monk-like aspect of the head, the Creoles of Cayenne call it "Oiseau mon Père."

This species is larger than the preceding, being quite equal to the common Carrion Crow in size, and being altogether of a thicker and larger make. It is plentiful in Guinea. The head of the Bald Fruit Crow is very large and heavily made, and the whole front of the bird is totally bare, like that of the leatherhead, already described and figured. Many naturalists



BALD FRUIT CROW.—*Gymnocephalus calurus*.

think that while the Bald Fruit Crow is still young, its head is clothed with feathers, together with the remainder of the body, and that, like the rook of Europe, it loses the feathers when it attains maturity. There has been considerable argument on the subject, but it seems to have been tolerably well settled that the young bird is feathered and the old bird bare.

This bird, together with the other Fruit Crows, makes the greater part of its meals on berries, fruits, and other vegetable substances; but will often vary its diet by an admixture of insects, snails, and many similar creatures. It is seldom seen upon the ground, finding its food among the branches, and confining itself almost exclusively to their shelter. The generic names *Gymnoderus* and *Gymnocephalus*, which have been appropriately given to these birds, are of Greek origin, and signify, the former "naked-necked," and the latter "naked-headed."

The general color of the Bald-headed Fruit Crow is dark brown, something like the dingy brown of a capuchin's cloak, thus giving to the bird the popular title of Capuchin. This color is, however, relieved by the darker hue of the quill-feathers of the wings and tail, which are deep black.

THE group of the Fruit Crows may lay claim to the credit of reckoning among their number one of the most singular of the feathered tribe. The UMBRELLA BIRD, so well depicted in the accompanying illustration, is a truly remarkable creature, and from the extraordinary mode in which its plumage is arranged, never fails of attracting the attention of the most casual spectator.

The bird is a native of the islands of the South American rivers—being seldom if ever seen on the main land—from whence it is not unfrequently brought by collectors, as there is always a ready sale for its skin, either to serve as an ornament in glass cases, or a specimen for a museum. In dimensions the Umbrella Bird equals the common Carrion Crow, and but for the



UMBRELLA BIRD.—*Cephalopierus ornatus*.

curious plume which adorns its head, and the tuft which hangs from its breast, might be mistaken at a distance for that bird. The general color of this species is rich, shining black, glazed with varying tints of blue and purple, like the feathers of the magpie's tail.

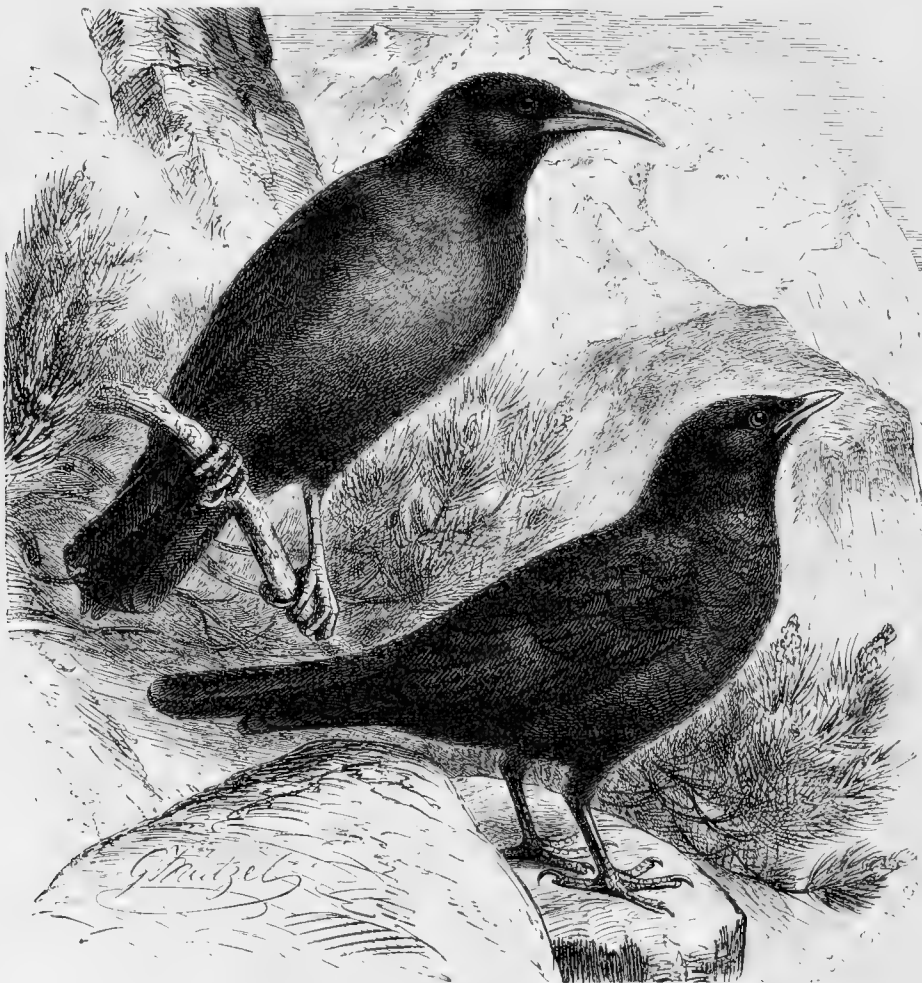
Very little is known of the habits of the bird ; but a very good description of its appearance when living has been given by Mr. Wallace in the following words: "Its crest is, perhaps, the most fully developed and beautiful of any bird known. It is composed of long, slender feathers, rising from a contractile skin on the top of the head. The shafts are white, and the plume glossy blue, hair-like, and curved outward at the tip. When the crest is laid back, the shafts form a compact white mass, sloping up from the top of the head, and surmounted by the dense hairy plumes. Even in this position it is not an inelegant crest, but it is when it is fully spread that its peculiar character is developed. The shafts then radiate on all sides from the top of the head, reaching in front beyond and below the tip of the beak, which is completely hidden from view. The top then forms a perfect, slightly elongated dome, of a beautiful shining blue color, having a point of divergence rather behind the centre, like that in the human head. The length of this dome from front to back is about five inches, the breadth four to four and a half inches."

Scarcely less curious than the "umbrella," as this overhanging plume is very appropriately named, is a bunch of elongated feathers that hang from the breast in a tuft, perfectly distinct from the rest of the plumage. The peculiarity in this tuft is, that the feathers of which it is composed do not grow from the neck, but from a cylindrical fleshy growth, about as thick as an ordinary goose-quill and an inch and a half long. The whole of this curious appendage is covered with feathers, so that the breast tuft is wholly distinct from the feathers of the neck and breast. The entire skin of the neck is extremely loose, more so than in any other bird, according to Mr. Wallace. The feathers of this tuft are edged with a beautiful and resplendent blue, and lap over each other like so many scales.

The food of the Umbrella Bird consists chiefly of berries and various fruits, and it always rejects the hard stones of stone fruit. As its cry is extremely loud and deep, the natives call the bird by a name which signifies a pipe.

### SCARLET CROWS.

OF the next little group of Corvidæ, named the Pyrrhacoracinae, or Scarlet Crows, in allusion to the red bill and legs of some of the species, Europe possesses a good example in the common ЧОУГН. In all these birds the beak is long, slender, slightly curved downwards, and with a small notch at the extremity.



CHOUGH—(*Fregulus graculus*); and ALPINE CROW.—(*Pyrrhacorax alpinus*).

The Chough is essentially a coast bird, loving rocks and stones, and having a great dislike to grass or hedges of every kind. When in search of food it will venture for some little



## Testimonials to the "Tafeln" of Brehm's Thierleben.

The late CHARLES DARWIN writes:—"The illustrations are the best I ever saw in any work. I find it superfluous to enter here into particulars, as I already, in the 'Descent of Man,' have willingly and openly confessed how much I have profited by Mr. Brehm's book, and how highly I esteem it."  
Sir JOHN LUBBOCK, Bart., D.C.L.:—"You have, I think, done good service in publishing them. They are certainly very admirable."  
W. B. CARPENTER, M.D., LL.D., writes:—"I can quite endorse the favorable opinions already given by distinguished zoologists as to the high character of the illustrations generally."

## Animate Creation.

WE have concluded to submit for public patronage a work with the above title, being a series of exquisite Engravings representing the ANIMAL WORLD, executed with great scientific accuracy, and accompanied by full Descriptive Text, written in popular terms, so as to delight and instruct the people. Anyone who has considered the subject must be at a loss to understand why an ILLUSTRATED NATURAL HISTORY, comprehensive and at the same time popular, has not before this been published in this country. Indeed any lover of animals who has visited the great museums and zoological gardens and has had access to books of engravings in the public libraries, could not fail to remark the wealth of material in existence devoted to this subject. Being confirmed in our conviction of the desirability of such a work, we laid under contribution the best existing authorities for the production of most perfect representations of all the more important living creatures, and among the artists whose delineations will delight the reader, we may mention Harrison Weir, Wolf, Coleman, Fr. Specht, and Mutzel. By far the majority of the engravings in these volumes are from drawings made from the *living* animals, many at the Zoological Society's Gardens in London, England.

We purpose that our patrons shall be aided and interested in their study by such an array of pictures as has never before embellished any Natural History. In numerous instances the engraving is printed in oil-colors, and this portion of the illustrations has been taken charge of by Messrs. L. Prang & Co., of Boston, who we believe rank foremost for high artistic results in this department of printing. These Oleographs were copied under the superintendence of Mr. Prang from the renowned "Tafeln" of "Brehm's Thierleben," so that they may be declared perfectly reliable.

We sought competent advice from various sources as to the most suitable text that should accompany this panorama of handsome Engravings. It was found impossible to embody all the present ideas of naturalists in a single work like this on account of the rapid advances and constant changes in their knowledge of, and habits of thought respecting, the Animal World. And it seemed to us correct that the true object of Zoology is not to arrange, to number, and to ticket animals in a formal inventory, but to inquire into their life-nature, and not simply to investigate the lifeless organism.

What do we know of "Man" from the dissecting-room? Is it not Man, the warrior, the statesman, the poet, etc., that we are interested in? With all veneration which attaches itself to those who are the accredited possessors of abstruse learning, their inordinate use of phraseology detracts too much, we fear, from the fascination that the study of the Animal World would otherwise yield, and as we are not content to have our work restricted to a favored few, we thought the task placed in our hands to be to keep the work free from a repellant vocabulary of conventional technicalities. Our endeavor has been to find an author whose work would be noted for its fund of anecdote and vitality rather than for merely anatomical and scientific presentation, and we arrived at the conclusion that we could not do better than avail ourselves of the Rev. J. G. Wood's comprehensive work—a work most popularly approved by speakers of the English language. It would be superfluous to say one word concerning the standard character of his book, from the pages of which old and young at the other side of the Atlantic have obtained so much instruction and rational amusement. Avoiding the lengthened dissertations and minute classifications of specialists, he presents to his readers in popular terms a complete treatise on the Animal Kingdom of all climes and countries. The one objection that could be urged against it was, that animal life in America might be treated more fully and American forms given more consideration. In order to obviate this drawback and to do full justice to the creatures of our own country, we secured the aid of Dr. J. B. HOLDER, of the American Museum of Natural History in New York, an undoubted American authority, who has adapted Wood's work to American wants and given prominence to American forms of Animal life.

The splendid work on Rodentia, by Allen, Coues, and others, will be fully consulted. The valuable work on North American Birds, by Baird, Brewer, and Ridgway, will be the guide in the treatment of birds. The late arrangement of the classification and nomenclature of North American Birds, by Mr. Ridgway, and the Committee on that subject of the Ornithologists' Union, will be utilized in full. The arrangement of Mammals will be after the latest classification by Professor Flower, of the Zoological Society of London. So that this will be the first popular Natural History worthy of the name that has made its appearance here, which gives due and full recognition to the animate world surrounding us.

### Terms of Publication.

The extent of the work will be 68 parts of 28 pages, at the price of 25 cents each. The entire publication will contain 31 Oleographs and 68 Full Page Engravings on Wood, besides many hundreds of exquisite illustrations interspersed through the text. The parts will be issued every two weeks, and are payable only as delivered. No subscriber's name will be received for less than the entire work, and anyone removing, or not regularly supplied, will please address the Publisher by mail.

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distance inland, and has been observed in the act of following the ploughman after the manner of the rook, busily engaged in picking up the grubs that are unearthed. Sometimes it will feed upon berries and grain, but evidently prefers animal food, pecking its prey out of the crevices among the rocks with great rapidity and certainty of aim, its long and curved beak aiding it in drawing the concealed insects out of their hiding-places. In England, the county Cornwall is the chief nesting-place of the Chough, but it is also found in many other portions of the British Isles; and the celebrated lines in "King Lear" are too familiarly known to need quoting as a proof that the Chough was in Shakespeare's time an inhabitant of the Dover cliffs. It is also found in many other parts of the world, having been observed even in Asia, and several districts of Africa.

The character of the Chough is not unlike that of the magpie, and is so admirably delineated by Montagu in an account of a tame specimen in his possession, that it must be related in his own words:—

"His curiosity is beyond bounds, never failing to examine anything new to him. If the gardener is pruning, he examines the nail-box, carries off the nails, and scatters the shreds about. Should a ladder be left against the wall, he instantly mounts and goes all round the top of the wall; and if hungry, descends at a convenient place and immediately travels to the kitchen-window, where he makes an incessant knocking with his bill till he is fed or let in: if allowed to enter, his first endeavor is to get upstairs, and if not interrupted, goes as high as he can, and gets into any room in the attic story; but his intention is to get upon the top of the house. He is excessively fond of being caressed, and would stand quietly by the hour to be smoothed, but resents an affront with violence and effect both by bill and claws, and will hold so fast by the latter that he is with difficulty disengaged; is extremely attached to one lady, upon the back of whose chair he will sit for hours, and is particularly fond of making one in a party at breakfast, or in a summer's evening at the tea-table in the shrubbery.

"His natural food is evidently the smallest insects; even the minute species he picks out of the crevices of the walls, and searches for them in summer with great diligence. The common grasshopper is a great dainty, and the fern chaffer is another favorite morsel: these are swallowed whole; but if the great chaffer be given to him, he places it under one foot, pulls it to pieces, and eats it by piecemeal. Worms are wholly rejected, but flesh, raw or dressed, and bread he eats greedily, and sometimes barley, with the pheasants and other granivorous birds occasionally turned into the garden, and never refuses hempseed. He seldom attempts to hide the remainder of a meal.

"With a very considerable share of attachment, he is naturally pugnacious, and the hand that the moment before had tendered him food and caresses will repent an attempt to take him up. To children he has an utter aversion, and will scarcely suffer them to enter the garden. Even strangers of any age are challenged with impunity; he approaches all with daring impudence, and so completely does the sight of strangers change his affection for the time, that even his favorites and best benefactors cannot touch him with impunity in these moments of evident displeasure."

As is the case with nearly all coast birds, the Chough builds its nest at no great distance from the sea, generally choosing some convenient crevice in a cliff, or an old ruin near the sea-shore. The nest is always placed at a considerable elevation from the ground, and is made of sticks lined with wool, hair, and other soft substances. The eggs are usually five in number, and in color they are yellower than those of the crow or rook, but are spotted with similar tints. The general color of the Chough is black, with a rich blue gloss, contrasting well with the vermilion-red of the beak, legs, and toes. The claws are black, and the eyes are curiously colored with red and blue in concentric circles. The total length of the adult male Chough is about seventeen inches, and the female is about three inches shorter.



## BIRDS OF PARADISE.

THE supremely glorious members of the feathered tribe which have by common consent been termed BIRDS OF PARADISE are not very numerous in species, but are so different in form and color, according to the sex and age, that they have been considered far more numerous than is really the case. The plumage of these birds is wonderfully rich and varied, and not even the humming-birds themselves present such an inexhaustible treasury of form and color as is found among the comparatively few species of the Birds of Paradise. In all, the feathers glow with resplendent radiance, in nearly all there is some strange and altogether unique arrangement of the plumage, and in many the feathers are modified into plumes, ribbons, and streamers, that produce the most surprising and lovely effects.

Various strange tales were told of these birds by the ancient writers. The Paradise Bird was thought to have no legs or feet, or use for them, but to pass its time floating in the air, and only taking a little occasional rest by suspending itself from the branches of a tree by the feathers of its tail. The obvious difficulty of hatching the eggs was accounted for by saying that they were laid in the hollow formed by the plumage of the male, and that the mother bird sat upon them while resting upon the back of her husband, both birds floating luxuriously in the breeze, and feeding on the soft dews of heaven. This fable found its origin in the fact that the natives of the country where the Paradise Bird resides, always cut off its legs before preserving the skin, so that all the specimens which reached Europe were legless. The plan of preservation adopted was simple in the extreme. The interior organs of the bird were removed, the legs cut off, a hot iron thrust into the body, and the bird dried over a fire without any further care.

The food and habits of these birds seem to be very similar, although the plumage is so distinct. I shall, therefore, give a detailed account of one species, and merely present the reader with good figures and short descriptions of the others. These birds had formerly been broken up into many genera, but are now very rightly shown to be members of the same genus.

THE first species on our list is the MANUCODE, or KING BIRD OF PARADISE, so called because it was thought to exercise a regal sway over the other species, and to hold itself aloof from them like a proud and imperious monarch.

It is a very little bird, the body being scarcely larger than that of a common sparrow, and is remarkable for the very eccentric way in which its plumage is arranged, as will be seen from an examination of the engraving. The natives of the country which it inhabits say that it lives in flocks of thirty or forty in number, under the guidance of one bird which is termed the king, and which is known by the eyes at the extremity of the long tail-feathers. They further relate that the whole troop perches together on the branches of a tree, and that if the king can only be shot, the whole of his subjects remain around his dead body, and can be slain without difficulty.

Le Vaillant, in treating of this subject, remarks that the King Bird of Paradise very often gets among a flock of another species, and would therefore hold, and be held, rather aloof from them. Moreover, this species is solitary, and is by no means fond of tall trees, preferring to flit among the low bushes in search of the berries and other food on which it subsists. The natives of New Guinea are in the habit of capturing the King Bird of Paradise by means of a kind of bird-lime, which they make from one of their native plants, and which they lay along the branches which the bird is known to frequent. During the greater part of the year this species remains in New Guinea, but during the western monsoon it migrates to the Aroo Islands, returning as soon as the rainy season sets in.

Lesson, who had the opportunity of a few days' visit to New Guinea, and who, like an enthusiastic naturalist, certainly made the very best use of his limited time, makes the following remarks upon this bird: "The Manucode presented itself twice in our shooting excursions."



BIRDS OF PARADISE.



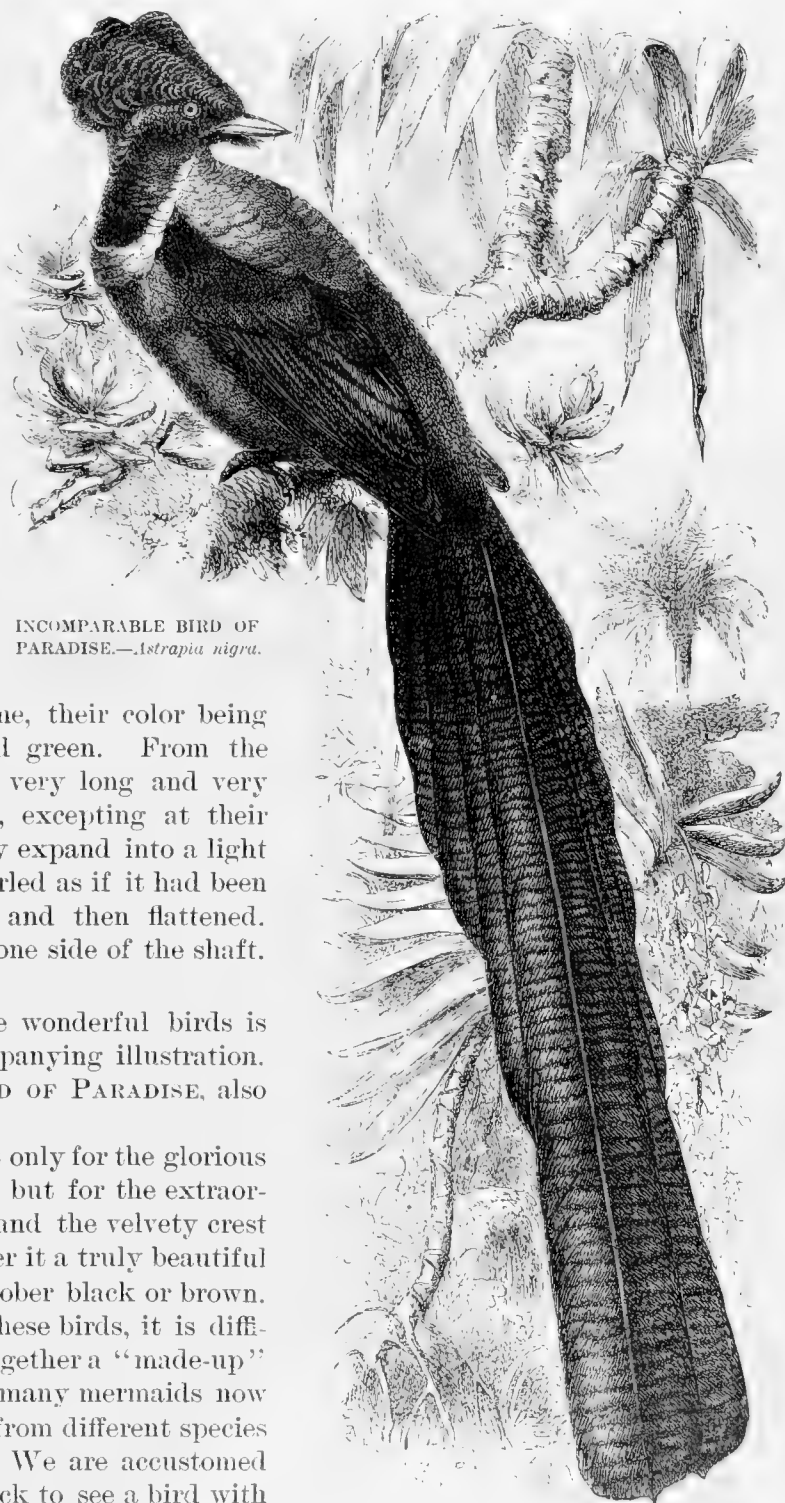
sions, and we killed the male and the female. This species would seem to be monogamous, or perhaps it is only separated into pairs at the period of laying. In the woods this bird has no brilliancy; its fine-colored plumage is not discovered, and the tints of the female are dull. It loves to take its station on the teak-trees, whose ample foliage shelters it, and whose small fruit forms its nourishment. Its irides are brown, and the feet are of a delicate azure. The Papuans call it *Saya*."

The King Bird of Paradise is as beautiful as it is rare. The whole upper parts of the body are rich chestnut with a wash of purple, and the under portions of the body are pure white. Across the chest is drawn a band of light golden-green, and from the sides and below the shoulders spring a series of feathers, disposed so, as to form a plume, their color being dusky-brown tipped with vivid green. From the upper tail-coverts spring the very long and very slender shafts, which are bare, excepting at their extremities, when they suddenly expand into a light emerald-green web, which is curled as if it had been just coiled into a spiral form and then flattened. The green web only belongs to one side of the shaft.

ANOTHER species of these wonderful birds is well represented in the accompanying illustration. This is the INCOMPARABLE BIRD OF PARADISE, also an inhabitant of New Guinea.

This bird is remarkable not only for the glorious iridescent splendor of its robes, but for the extraordinary development of its tail and the velvety crest on its head, which would render it a truly beautiful bird even were the plumage a sober black or brown. Indeed, on first seeing one of these birds, it is difficult to believe that it is not altogether a "made-up" specimen, composed, like the many mermaids now in existence, of portions taken from different species and ingeniously put together. We are accustomed by our knowledge of the peacock to see a bird with a disproportionately long train, but in this case the true tail-feathers are developed both in length and width to such an extent that they hardly seem to have started from the little body to which they belong.

The true position of this species has been much doubted by naturalists, some having considered it to be analagous to the thrushes, and having accordingly placed it near those birds, while others have ranked it among the Paradise Birds, but have made it into a fresh genus.



INCOMPARABLE BIRD OF PARADISE.—*Astrapia nigra*.

There seems, however, no real cause for removing it from the other Paradise Birds, and thus increasing the number of genera, which is already allowed to be far too large. As it is by no means a common bird, and the natives of New Guinea are not observant naturalists, caring nothing for the birds but the price which is paid for their skins, very little is known of its habits. The tail of this species is fully three times as long as the body, the head is ornamented with a double crest of glittering feathers, and its whole plumage glows with an effulgence of varied hues that almost baffle description. This gorgeous plumage belongs only to the male; the female being smaller, comparatively sober in hue, and devoid of the beautiful crest which adorns the head of her mate.

It is hardly possible to conceive a more singular arrangement of plumage than is presented in the GOLDEN BIRD OF PARADISE, although in many species there is something so remarkable and unexpected that we believe the extreme of uniqueness to have been reached, until we come across another species which equally raises our wonder and admiration.

In the king Bird of Paradise we have already seen two long, bare shafts springing from the upper tail-coverts and extending beyond the tail. Such an arrangement is not, however, without a parallel in other members of the feathered race—as the Leona nightjar and the great *Dicurus* both possess a similar development of feathers, the wing of the one and the tail of the other being thus decorated. But in the species which we are now examining, six long, slender shafts start from the head, three on each side, bare for the greater part of their length, and furnished with a little patch of web at their extremities. These curious shafts are movable, as the bird possesses the power of raising them so as to stand out horizontally on each side of the head, or of permitting them to hang loosely down the sides of the neck. The flanks are decorated with massive plumes of a jetty black, that are also capable of being raised or lowered at the pleasure of the bird, and that fall over the wings and tail so as nearly to conceal them.

The general color of this curious species is deep velvety-black, changing into gray on the top of the head, and into the richest changeable golden-green on the back of the neck. The throat is most gorgeous in the sunshine, being covered with scale-like feathers of glittering green edged with gold. The feathers of the tail are also velvet-like, and some of the shafts are long and filamentous. The total length of this bird is rather under a foot.

THE EMERALD BIRD OF PARADISE is the species which is most generally known, and is the one of which were related the absurd tales which have already been mentioned. The specific term, *apoda*, signifies “footless,” and was given to the bird by Linnæus in allusion to those fables which were then current, but which he did not believe.

This most lovely bird is a native of New Guinea, where it is far from uncommon, and is annually killed in great numbers for the sake of its plumage, which always commands a high price in the market. It is a very retiring bird, concealing itself during the day in the thick foliage of the teak-tree, and only coming from the green shelter at the rising and setting of the sun, for the purpose of obtaining food. Almost the only successful method of shooting the Emerald Paradise Bird is to visit a teak or fig tree before dawn, take up a position under the branches, and there wait patiently until one of the birds comes to settle upon the branches, or leaves the spot which has sheltered it during the night. This bird is rather tenacious of life, and unless killed instantly is sure to make its escape amid the dense brushwood that grows luxuriantly beneath the trees, and if the sportsman ventured to chase a wounded bird amid the bushes, he would, in all probability, lose his way and perish of hunger. Those sportsmen, therefore, who desire to shoot this bird always provide themselves with guns that will carry their charge to a great distance, and employ very large shot for the purpose, as the bird always perches on the summits of the loftiest trees of the neighborhood, and would not be much damaged by the shot ordinarily used in shooting.

This species is very suspicious, so that the sportsman must maintain a profound silence, or not a bird will show itself or utter its loud full cry, by which the hunter's attention is directed to his victim.

ALTHOUGH undistinguished by the wonderful floating plumes which form so conspicuous a decoration of the preceding species, and not being equal to it in dimensions, the SUPERB BIRD OF PARADISE is by no means the least curious of this group.

In this bird, the scapulary feathers are greatly developed, being elongated and widened so as to form a very large double plume or crest, which lies along the back and sides when the bird is at rest, but can be raised at will, and then overtops the head on each side like the Queen of Scots' collar. As if to balance this shoulder-crest, another curious tuft of feathers hangs from the breast, spreading into a doubly pointed form, the extremities being directed downwards. The general color of the plumage is the deepest imaginable violet "shot" with green, appearing of a velvety blackness from its very intensity, and only flashing forth in the brighter hues as the light falls upon the edge of each feather. The breast tuft, however, forms an exception to this rule, being of the most brilliant steely-green, glittering with gem-like radiance in the sunbeams. Although it is not a very large bird, measuring only nine inches in total length, it is really not so very inferior in size to the emerald Paradise Bird, as its tail is short and its plumage closely set.

THE last species of these birds which will be mentioned in these pages is the RED BIRD OF PARADISE.

Although not possessed of such dazzling and refulgent plumage as characterizes several of its kin, it is yet a most beautiful bird, and both for the soft, delicate purity of the tints with



RED BIRD OF PARADISE.—*Paradisaea rubra*.

which it is adorned, and the harmony of their arrangement, may challenge competition with any of the feathered race. In size it is about equal to a small pigeon. The forehead and chin are clothed with velvet-like feathers of the intensest green, so arranged as to form a kind of double crest on the forehead, and a sharply defined gorget on the throat. The head, back, and shoulders, together with a band round the neck immediately below the green gorget, are rich orange-yellow, golden in the centre and tinged with carmine on the margins. The wings, chest, and abdomen are a deep, warm chocolate-brown, and the tail is somewhat of the same tint, but not quite dark. Over the tail falls a long, double tuft of loose plummy feathers of a beautiful carmine, and two long black filamentous appendages also hang from the tail, and extend to a considerable length.

## THE STARLINGS.

THE large and important family of the STARLINGS now claim our attention. These birds are seldom of great size, the common Starling being about an average example of their dimensions. The bill of the Starling tribe is straight until near its extremity, when it suddenly curves downward, and is generally armed with a slight notch. The first sub-family of these birds is that which is known by the name of Ptilonorhynchinae, or Glossy Starlings, so called on account of the silken sheen of their plumage.

The best representative of this little group is the celebrated SATIN BOWER BIRD of Australia.



SATIN BOWER BIRD.—*Ptilonorhynchus holosericeus*.

This beautiful and remarkable bird is found in many parts of New South Wales, and although it is by no means uncommon, is so cautious in the concealment of its home, that even the hawk-eyed natives seem never to have discovered its nest. Perhaps they may be actuated by some superstitious reverence for the bird, and have therefore feigned ignorance of its residence, for it is well known that the voracious native, who will eat almost anything which is not poisonous and will yield to his sharp and powerful teeth, has in many portions of the country so great an awe for this bird that he will never kill it.

The chief peculiarity for which this bird is famous is a kind of bower or arbor, which it constructs from twigs in a manner almost unique among the feathered tribes. The form of this bower may be seen in the illustration, and the mode of construction, together with the use to which the bird puts the building, may be learned from Mr. Gould's account:—

“On visiting the Cedar Brushes of the Liverpool range, I discovered several of these bowers or playing places; they are usually placed under the shelter of the branches of some overhanging tree in the most retired part of the forest; they differ considerably in size, some being larger, while others are much smaller. The base consists of an exterior and rather convex platform of sticks, firmly interwoven, on the centre of which the bower itself is built. This, like the platform on which it is placed and with which it is interwoven, is formed of



sticks and twigs, but of a more slender and flexible description, the tips of the twigs being so arranged as to curve inwards and nearly meet at the top; in the interior of the bower, the materials are so placed that the forks of the twigs are always presented outwards, by which arrangement not the slightest obstruction is offered to the passage of the birds.

“For what purpose these curious bowers are made is not yet, perhaps, fully understood; they are certainly not used as a nest, but as a place of resort for many individuals of both sexes, who, when there assembled, run through and round the bower in a sportive and playful manner, and that so frequently that it is seldom entirely deserted.

“The interest of this curious bower is much enhanced by the manner in which it is decorated, at and near the entrance, with the most gaily-colored articles that can be collected, such as the blue-tail feathers of the Rose Hill and Lory Parrots, bleached bones, the shells of snails, etc. Some of the feathers are stuck in among the twigs, while others, with the bones and shells, are strewed about near the entrance. The propensity of these birds to fly off with any attractive object is so well known, that the blacks always search the runs for any missing article.”

So persevering are these birds in carrying off anything that may strike their fancy, that they have been known to steal a stone tomahawk, some blue cotton rags, and an old tobacco-pipe. At the Zoological Gardens the Bower Bird may be seen hard at work at its surface, fastening the twigs or adorning the entrances, and ever and anon running through the edifice with a curious loud full cry that always attracts the attention of a passer-by. The Satin Bower Bird bears confinement well, and although it will not breed in captivity, it is very industrious in building bowers for recreation.

The food of this bird seems to consist chiefly of fruit and berries, as the stomachs of several specimens were found to contain nothing but vegetable remains. Those which are caged in Australia are fed upon rice, fruit, moistened bread, and a very little meat at intervals, a diet on which they thrive well. It is rather a gregarious bird, assembling in flocks led by a few adult males in their full plumage, and a great number of young males and females. They are said to migrate from the Murrumbidgee in the summer, and to return in the autumn.

The plumage of the adult male is a very glossy satin-like purple, so deep as to appear black in a faint light, but the young males and the females are almost entirely of an olive-green.

HARDLY less beautiful in form and plumage, and quite as interesting in habits, the SPOTTED BOWER BIRD now comes before our notice.

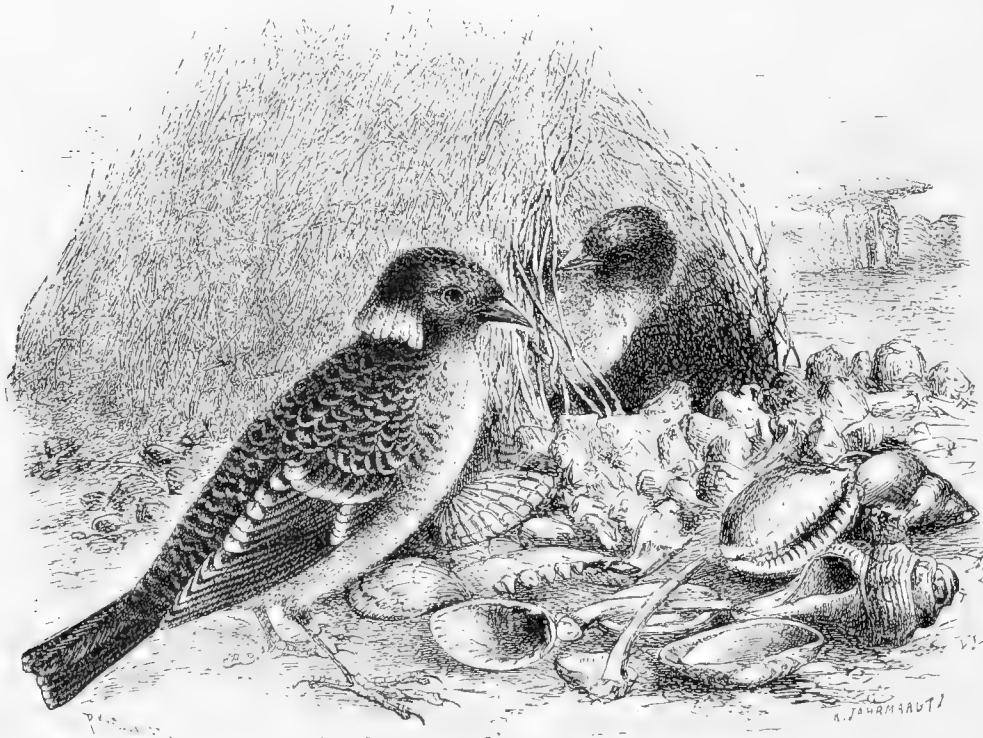
This species is an inhabitant of the plains in the interior of New South Wales, and is thought by Mr. Gould to be sufficiently distinct from the preceding species to warrant its introduction into a separate genus. Of this species Mr. Gould makes the following valuable remarks:—

“It is as exclusively an inhabitant of the forests in the interior of the country as the Satin Bower Bird is of the bushes between the mountain ranges of the coast. From the extreme shyness of its disposition, the bird is seldom seen by ordinary travellers, and it must be under very peculiar circumstances that it can be approached so as to observe its colors. It has a harsh, grating, scolding note, generally uttered when its haunts are intruded on, by which its presence is detected.

“The situation of its runs or bowers varies much. They are considerably larger and more avenue-like than those of the Satin Bower Bird, being in many instances three feet in length. They are outwardly built of twigs and lined with tall grasses; the decorations are very profuse, consisting of bivalve shells, crania of small mammalia, and other bones. Evident indications of contrivance are manifest throughout the whole of the bower and its decorations, particularly in the manner in which the stones are arranged, apparently to keep the grasses with which it is lined firmly in their places. A row of stones diverges from the mouth of the run on each side, so as to form little paths, while the heap of decorative materials is placed before the entrance; this arrangement is the same at both ends. Some of the larger

bowers, which had evidently been resorted to for many years, contained nearly half a bushel of bones and shells."

The color of this bird is a rich brown covered with buff spots, and upon the back of the neck there is a band of lengthened feathers of a beautiful rose-pink, and glistening with a satin-like sheen. For more detailed information of these curious birds, as well as for some admirable colored engravings of themselves and their bowers, the reader is referred to Gould's "Birds of Australia."



SPOTTED BOWER BIRD.—*Chlamydotera maculata*.

THE account of the Glossy Starlings would be incomplete without a passing mention of the JUIDA, a bird rather larger than the common starling, with an elongated tail, and a plumage that is most singularly covered with every imaginable shade of shining copper, purple, violet, and blue, intermixed in such a manner as to defy description, and seeming as if the hues had been splashed at random upon the feathers, and then rubbed in and polished. There are several species of Juida, some inhabiting Australia, and others being found in India and Africa. They live in flocks, often attacking the gardens and making great havoc among the fruit. They are also in the habit of perching upon the backs of cattle for the sake of catching the various insects which are always to be found upon a cow's back. Their nest is usually made in the clefts of rocks.

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