

Intimate Study of Bird Life During Building and Mating Time

NATURALISTS do not know as much about the mating habits of birds as they would like to know. They are certain that the eagles, the hawks and the owls remain mated for life, and it is probable that many other birds do also. The study of the mating of birds and their nesting habits is of great interest.

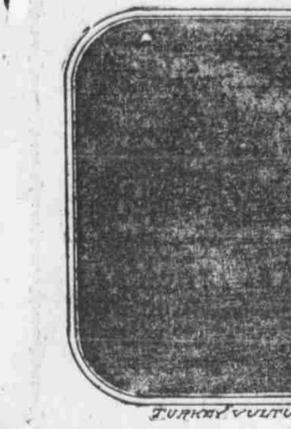
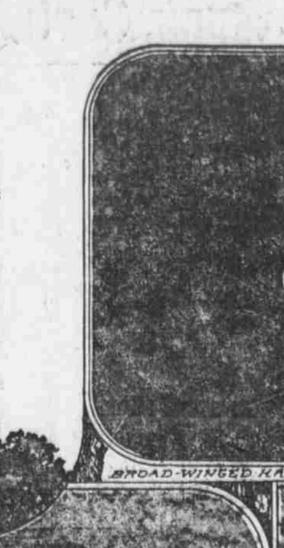
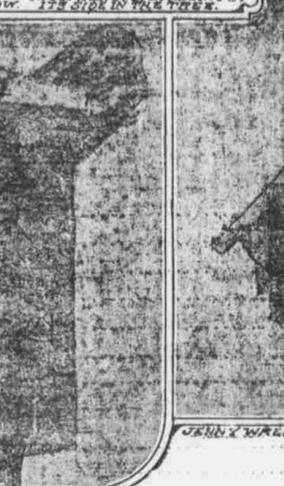
June is the best building month for most birds. A few, though, rear more than one brood in a season, begin to nest in April and May, while the goldfinch and the cedarbird are lazy and wait until July before they begin their domestic duties.

The bird to enter and leave the nest. If the owner is at home she slips from her treasures and out of the narrow passage as you draw near. Then she flies to a near-by tree and scolds you in harsh, discordant notes that soon calm to her old number of her kin, and the flock tries its best to drive you away.

Most of the eagles and hawks and many of the owls return to the same nest year after year. If the nest needs repairing after the storms of the preceding winter have raked it the old birds build up the sides by adding new material, until in the

hollow tree and under the shelving rocks of cliffs, the chimney swift, the cave swallow and the phoebe, for instance, take advantage of the chimneys and the protection of the porches and overhanging eaves of houses for their nests.

One of the oddest of nests is the stick basket that the chimney swift builds in the sooty chimney or fastens to the planking of an old building. The bird seldom lights outside of a chimney, and gathers his nesting material by flying swiftly over the top of a dead tree and in passing snatching a twig. Then descending to the



TURKEY VULTURE, 4 WEEKS OLD.

The nesting season is at its height in June, and all the songsters are in full voice. In July most of them stop singing, and people are apt to suppose that the orioles and the bobolinks, for instance, have gone south because they do not hear their singing.

Most birds rear only one brood in a season, but the song sparrow, the vesper sparrow, the chipping sparrow, the bluebird, the robin, the phoebe, the house wren and the catbird, raise two, three and sometimes as many as four broods during the summer, building a new nest for each brood. This seems to be nature's method of keeping these birds from becoming extinct, for they are the species that are most persecuted by cats, youthful egg collectors and many other enemies.



TURKEY VULTURE, 4 WEEKS OLD.

Usually only the female bird constructs the nest and incubates the eggs, after which her mate assists in feeding and caring for their young. But with the house wren, the robin, the rose-breasted grosbeak and some species of vireos, the male bird is a willing helper in these duties, that is, provided his wife does not object.

Often you will see a male rose breasted grosbeak or a solitary or a yellow throated vireo covering the eggs of his mate and singing as though it were a real pleasure to relieve her of the task and to give her a chance to stretch her wings and seek her food. Johnny House Wren is another who does not believe in making his wife do all the housework, yet it would be hard to find in the whole bird world a more henpecked than he.



TURKEY VULTURE, 4 WEEKS OLD.

His wife treats him shamefully whenever he attempts to carry sticks into the hollow tree trunk or the bird house that some human has placed at their disposal. No matter what he does he can never satisfy Jenny. She chases him about, scolds him and hisses at him whenever she catches him in the act of carrying a twig into the house. But he is a shy fellow and often watches his chance and then tries to sneak building material in while she is away.

Sometimes she catches him in the act and chases him out of the house in a hurry, she follows him a few feet and then returns to the house and deliberately picks up the very stick it compelled him to drop, and carries it into the box herself. From this it is evident that it is not the material that she objects to, but the fact that he meddles in household affairs.



TURKEY VULTURE, 4 WEEKS OLD.

Johnny Wren is an adept at nest building. Most male members of the wren family are. After he had helped his mate to complete the nest that is to be the home proper he occupies his spare time in exacting other near neighbors for the sake of doing something. The marsh wren will sometimes have four or five nests away in the stems of the thick rushes or in the salt marshes along the coast or at the mouths of the big rivers.

After a pair of house wrens have raised a brood of young they move out to the edge of the nest and put in a new one—change the bedding, so to speak—before the second set of six eggs are laid.



TURKEY VULTURE, 4 WEEKS OLD.

As a rule the different species of woodpeckers hew their nests in dead limbs, but some of them have been known to excavate a nest in a live limb. In the southwestern part of this country, where trees are scarce, they will use a telegraph pole as a site for a nest. In the bottom of the pole on a bed of chips the white eggs are deposited.

The belted kingfisher and the bank swallow tunnel in the bank of a stream, and often nest in burrows and live in perfect peace. The kingfisher burrows six or eight feet into the sand, but the swallow's eggs can be reached by thrusting the hand and arm into the hole. Both birds lay their eggs on mats of grass stems, dried grass and other soft material.



TURKEY VULTURE, 4 WEEKS OLD.

Two other bird families show so much diversity in selecting nesting sites and material for their nests as the swallows. As has been said, the bank swallow builds its nest in the bank of a stream. The cave or cliff swallow makes a globular-shaped nest under the eaves of a barn or beneath a shelving rock on the side of a cliff.

Hundreds of tiny mud pellets, the size of buckshot are taken from the road or the river bank and welded together until an irregular oval is formed, and in this the dried grass and feathers for the lining of the nest are placed. These birds nest in colonies and the nests are placed so close together that often they join.



TURKEY VULTURE, 4 WEEKS OLD.

The barn swallow attaches his nest to the planking or to a rafters inside of a barn or other building. He uses mud also, but he mixes horsehair and dried grass with it, just as humans mix hair with mortar to make it hold together. Instead of constructing a hollow ball like some of his relations, he leaves the nest open on top like the nests of most birds.

The white breasted swallow and the purple martin, the largest of the swallows, build their nests in hollow trees or in bird houses, constructing them of stick, dried grass, feathers and other soft material. Both of these birds have sweet voices and they are probably the finest singers of the swallow family.

course of a few seasons it is three times its original size.

In this manner the osprey, or fish hawk, in the course of a few years will have a nest nearly the size of a horsehead. Although the osprey is a true hawk, the grackles sometimes build their nests in the side of the osprey's and live in perfect security, laying their eggs and rearing their young a few inches from the huge, awkward children of their feathered host.

One curious habit that the hawks have is that of placing on the top of the nest a single spruce, maple, oak or chestnut twig which has a few green leaves attached. Nearly every hawk's nest examined will have this solitary dash of green in it.

If one of the hawks is killed the remaining mate will soon make again and return to the same nest. In this manner a pair of red shouldered hawks have been known to use the same nest nine successive summers.

The broad winged hawk builds his nest in the woods or in a grove, selecting a maple, oak or chestnut tree. In the crotch of limbs a body of sticks is placed and on this soft material, such as the inner bark of the chestnut tree, and then a lining of dried leaves is laid.

While some birds are shy and prefer to live as far from man and his works as they can get, others seek his company. The purple grackles prefer to select for their nesting sites the pines and evergreens in and about the grounds of houses. Some of the birds that would naturally nest in

chimney the bird fastens the twig to the soot-covered bricks by the aid of a thick glutinous substance that comes from his throat or stomach. Other twigs are added until a neat twig basket is made and in this the four white eggs are laid.

Some birds, like some people, are shiftless in their work. The herons and the cuckoos make mere platforms of sticks, so loose and flimsy that often the eggs can be seen as one stands on the ground and

looks up between the twigs.

On the other hand, the humming bird, the blue gray gnat catcher, some of the flycatchers, the vireos, the orioles and many other birds build nests with such pains and care as to excite your admiration. Of all nests the oriole's is the most durable, because it is practically a woven nest of string, horse hair and other strong fibres. Although the oriole never uses his nest a second year, five years of winds and storms

cannot whip it to pieces.

Young birds are unable to build as neat or as compact nests as the birds that have had several years' experience. Even some experts are obliged to patch up their nests before their young have left it. A heavy rainstorm will sometimes wash away the rim of the mud bowl that the robin lines with dried grass, and she has to build it up again. Practically the same thing sometimes happens to the nest of the cliff swallow.

It is interesting to watch a bird searching for a suitable nesting site. A bluebird, for instance, flies to the opening in a hollow limb and cautiously peeps in, as though half afraid that the hollow is occupied. Sat-

leted that it is not, she fills the entrance and stands there looking down. Finally she hops out of sight. If she is satisfied with the cavity she begins at once to bring in nesting material.

A robin will alight in a crotch in a tree, turn around, lift her tail, look down and turn around again and finally snuggle down and sit a few seconds as though calculating its circumference. Birds will sometimes change their minds after they have nearly finished a nest, and for no apparent reason will abandon it and begin another one a few feet from it.

The making of a nest is not so difficult and tedious a job as one might suppose. Few birds are more than a week in house-building, and when both birds assist in the work a nest can easily be built in three days.

In the marshes bordering the lakes and rivers of the northern United States and

Canada the grebes build floating nests of dried rushes, mere rafts that rise and fall with the water. These ducklike birds are expert swimmers and divers, and when they hear an enemy approaching through the weeds they slip silently off the eggs and, half submerged in the water, swim away, to return when they are confident that all danger is passed. The young grebes sometimes follow their mother's example.

Many of the ducks that pass over the United States in the spring nest in Canada. Some build nests in the tall grass and reeds in the marshes and lakes and along the rivers, while others select hollow tree trunks or hollow logs in which to build their nests. Among the latter class are the American golden eye or whistling, the wood duck or summer duck, the American merganser or sheldrake, and the hooded merganser.

That huge scavenger bird, the turkey buzzard or turkey vulture, lays its eggs on the ground or in a hollow log or stump. It makes scarcely any pretense at nest building, but will sometimes scrape together a few sticks and leaves and lay two eggs on them.

Most birds are loath to leave their nests when they are incubating, and the turkey buzzard is no exception. Sometimes she will permit one almost to touch her before she takes wing, and then clumsily beating her wings she hops through the tops of the bushes until she is high enough to spread her wings and show to advantage the graceful curving flight for which she is noted.

Soon after the young buzzards break through the egg shell they resemble downy chickens, save for their curved bill. Even after they are a month old, and half the size of their parents, they still retain the snow white down, although the large quill feathers on the ends of the wings may have begun to show themselves.

Fied for American Made Goods in Tunisia and Algeria

(Copyright, 1907, by Frank G. Carpenter.)

TUNIS, June 8.—(Special Correspondence of The Bee.)—Uncle Sam should send his commercial travelers to Tunisia and Algeria.

These two French colonies are rapidly increasing in population. Tunisia has doubled within the last ten years, and Algeria is growing both by immigration and by its increased number of births. If it were not for the divorces both countries would be more populous than they are now. The most of the people are Mohammedans, and their marriage laws are such that a man can get rid of his superfluous wives far more easily than the American can divorce his only one in South Dakota or Oklahoma.

There are now about 15,000 divorces in Algeria every year, and this is almost half the number of marriages. All that a Mohammedan has to do to secure a separation is to point his wife to the door and say, "I divorce you! I divorce you! I divorce you!" and out she goes. It is not much better with the Tunisian Jews; the chief difference being that the Mohammedan has the right to four wives, while the Jew can have but one. At present plural marriage is declining in popularity among the Mohammedans. With the influx of European living grows more and more expensive, and it costs too much to keep up a harem with more than one mistress.

Good Postal Service.

Both of these countries have a good postal service. There are postoffices in every town, and, of late, the mails have been carried on camels to many of the oases of the desert. The letter rates to Algeria, Tunisia and France are 3 cents, and postal orders up to \$4 may be gotten for 1 cent, and up to \$10 for 5 cents. I can buy a postal order on America to the amount of \$2 for 2 cents, and the same rate is given for England, India, Canada and Japan. There are almost daily mails from here to Europe, and France can be reached from either Tunis or Algiers in just twenty-four hours.

The postal business is rapidly growing. There are something like 50,000 packages sent through the Algerian mails every year, and fully half that many through the postoffice of Tunisia.

Money and Banks.

Both of the provinces have excellent banking facilities. Every town of any size has its banking establishments, and the cities are represented by the chief banks of France. I was able to draw money at Biskra, down in the Sahara, and I have had no trouble anywhere in getting my letter of credit cashed. The Bank of Algeria, which is connected with the government, has a capital of \$4,000,000, and its paper notes are exchanged for gold in any part of these French colonies. The Credit Lyonnais has branches in all of the Algerian cities, and the same is true of the Bank of Tunisia as to the cities of that province.

The money used is French in Algeria and Tunisia in Tunisia, but it is all on the French decimal system, and there is no trouble in making change. In addition to the banks above mentioned, there are agricultural banks in both Algeria and Tunisia, which make loans to farmers and settlers, and Algeria has seven savings banks, with deposits of more than \$5,000,000.

So far, banking here is in its infancy. The natives have not been accustomed to taking care of their money that way. They do not like to go to the banks for fear their friends will think them hard up, and that their business is borrowing. Therefore, they hide their savings under the rafters or build them away in some part of their houses. Many of them put their surplus into jewelry and this is especially so of the Bedouins and Kabyles, the richer women among whom are often loaded with gold and silver.

The chief money lenders outside the banks are the Jews, who charge exorbitant rates of interest and take notes for much more than the amounts loaned. The Jew comes to the man's house and makes the loan

there, and at the end often gets both house and money. In the French banks the office hours are from 8 to 11, and from 2 until 4. At noon every one knocks off for a rest.

Similar hours obtain in the large business houses, but they open early and, with the exception of the noon rest, remain open until dark. All the cities have French sections, with stores and business establishments like those of Europe. The great bulk of thousands of petty merchants, who occupy the same kind of a good-sized piano box, and who sit on the floor while they wait for their customers. Such establishments open shortly after daylight and close long before nightfall. The streets where they are located are poorly lighted and there is no business whatever after dark.

Openings for Uncle Sam.

Tunisia has a foreign trade of about \$20,000,000 a year, but Uncle Sam gets almost none of it. We sell but little to Algeria, and that, notwithstanding its foreign commerce, amounts to more than \$100,000,000 per annum. This is a large trade for a colonial possession, and it seems the larger when it is remembered that the population here is almost altogether agricultural and that it dresses in cottons. I see some American meats in the stores, and not a few of the French establishments carry canned salmon. There are windmills from Chicago scattered here and there throughout the Tell, and there are American sewing machines working away in many of the bazars. As to the cotton goods for these 3,000,000 or 3,000,000 people, they come chiefly from France, Germany and England, and the same is true of machinery, both of which lines are specialties of our own. The most of the trade of all kinds is with France.

Our vice consul, Mr. Proux, who is one of the bankers of Tunis, and whose opinion is of considerable value, tells me that there is an opening here for all kinds of American machinery and tools. He says our windmills have been more successful than any of the others and that several hundred have already been sold.

As to American machinery and the tools in which we are so strong elsewhere, the people of Tunisia hardly know them

This is shown by our sales of 1904, when they amounted to only about \$6,000, whereas France sent in similar goods to the amount of more than \$500,000. Egyptian land is now selling something like \$1,000,000 worth of cotton goods to the Algerians, and France about half that amount. The timber of north Africa comes chiefly from Norway. It might be sent from our southern states. The colony is almost treeless, and all the wood of value has to be brought in from abroad.

Among the Farmers.

Tunisia and Algeria once supplied the bread for Italy, and they are now one of the bread baskets of Europe. They produce quantities of wheat and other grains; but the farming is so poor that the average wheat yield of Algeria is less than eight bushels per acre; whereas ours is thirteen bushels, and that of the wheat belt of Canada something like twenty-five bushels. With proper machinery the yield might be doubled. The dry lands of northern Africa need deep cultivation to preserve the moisture, and it may be that a vast amount of new land can be brought into use by what is now known as dry farming. At present the surface is only scratched. The plow is so light that you can swing one around your head as easily as a well loaded Indian club, and the farmers often carry them to and from the fields on their shoulders. They are little more than forked sticks shod with a thin piece of iron. They have but one handle, and are so made that the plowman does not need to press upon them as he walks through the furrows. The result is that large bunches of weeds or bushes cannot be plowed up, and the farmers work their way in and out through the brush. They have to cut most of their grain with the sickle, as it would be impossible to run a mower through the field.

Farming Machinery.

It is only the French settlers, and now and then an Italian, who have modern machinery, and it is only in Algeria that our machinery is used. We sell a hundred thousand dollars worth or so of agricultural implements there every year, this being our share of the two million dollars' worth of machinery annually imported. There is no reason why there should not be a good demand for American plows, and also for our mowers, reapers, and threshing machines. At present the grain is either trodden out of the straw by horses, oxen, or donkeys, or ground out by driving heavy sleds about ever it. The chaff is blown away by throwing the straw against the wind.

Within the last few years the most of the Tunisian wheat has been exported to France, while the Tunisians have bought Russian wheat for their own use. The reason for this is that Tunisian wheat, inasmuch as it comes from one of the French colonies, is admitted to France free from duty, whereas all other foreign wheat pays a high tariff. Such wheat as Tunis itself imports pays practically nothing, and so the people have been bringing in Russian wheat and sending their own off to France and making thereby a big profit off the difference in the respective tariffs. The French government has now discovered this trick, and I understand that it will soon tax Tunisian grain just as it does the grain from other countries.

Our Mining Machinery.

Our manufacturers of mining machinery should keep their eyes on this part of

African France.

Notwithstanding all this, African France, as these two colonies are called, has more and more people year by year. It is a big country, Algeria, outside the vast territories of the French Sahara, is as large as all New England, with New York, Pennsylvania, West Virginia and New Jersey added thereto, and it has a population larger than any of our states outside New York.

Tunisia is just about the size of Alabama, and it has as many people as Massachusetts. The population of the two countries is fully one-eighth that of the whole United States, and the most of the people might be consumers of American goods. So far, our dear Uncle Sam seems to be running his consular business here on the cheap. There are a poorly paid consuls in Algiers, and within the last few months we have reduced the vice consulate at Tunis to a consular agency. This means that the man who represents us here in this city of 250,000 and country of 2,000,000 and more receives practically nothing for office expenses, and that his fee amounts to only a few hundred dollars a year. This is so, notwithstanding we are paying our consul general of Morocco several thousand dollars a year and have recently raised his predecessor, Mr. Gummere, to the rank of a minister, with a salary several times as large.

Although we spend only \$3,000 or \$4,000 in pushing our trade in these two rich provinces belonging to France, where the market is worth many million dollars a year, and waste three or four times that on the wilds of Morocco, from which we get nothing now and cannot hope for much until far in the future. Similar conditions prevail in some other parts of Africa.

Tunisia and Algeria are a part of up-to-date Africa. They are still behind the times, but they are rapidly introducing all modern improvements. Life and property in them from the Mediterranean to far down into the Sahara, are safe; there are police everywhere and the people are paying less taxes than ever before.

The facilities of communication are rap-

idly growing. The two countries have in the neighborhood of 5,000 miles of railroad, thousands of miles of good country roads, and hundreds of miles of electric tramways. One can now travel through Tunisia and Algeria for a distance as great as from Washington to Seattle in an automobile, and that over roads better than nine-tenths of the country roads of the United States. The soil is largely underlaid with limestone, and the roads have been macadamized from one end of the land to the other.

As to the telegraphic possibilities, the wire now in use in Algeria would make a circle around the earth, and the telegraph poles are enough to supply a line through its center. A telegraph route across the Sahara has just been surveyed, and, within a short time, the French provinces of the Soudan will be joined to Algeria by 2,500 miles of wire.

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