

HONEY-BIRDS.

BY DR. EUGENE MURRAY-AARON.

There are in Africa, Australia and in South America certain birds, evidently not related ornithologically, that, because of their peculiar habits, are known as "honey-birds," the special traits of which afford an interesting study in animal reasoning or instinct as one may choose.

One of these, the species common to a large area in Central and South Africa, mentioned by many travelers, has been briefly described by that prince of realists, Dr. James Johnston, of Brownstown, Jamaica, in his superb work, "Reality vs. Romance in South Central Africa,"* at page 106. He says: "Our daily meeting with the honey-birds served to remove any skepticism I may have had in reference to this cunning little creature. It is not much larger than a canary, and as soon as man makes his appearance, hops from branch to branch, making repeated flights toward the traveler, and then flying off in the direction in which it appears to wish attention attracted, with a sustained chic-en, chic-en, chic-churr, churr, returning again and again, until its importunity is rewarded by some one accepting its invitation to follow to the spot where is stored the—to it—inaccessible treasure. It makes a great fuss, flying round and round, leaving no doubt as to the whereabouts of its find. Sometimes there is no opening to be seen, when the native proceeds to tap upon the trunk with the head of his hatchet, until he locates the hive. He then obtains the honey by making a fire at the root of the tree, and, under cover of the smoke, with his hatchet secures the prize. Then is revealed the reason for the excitement of our tiny guide, who now comes in for its share of the pickings."

Several explorers whose good fortunes have taken them well into the interior of the Australian bush have described the somewhat similar actions of a species of bird spoken of as being "nearly as large as a crow" and evidently quite distinct from the African species. In Haiti I have had opportunities of observing the like performances of a bird, shy and elusive for the most part and only at all approachable when the presence of honey renders it bold, which appeared to be closely related to our northern cedar-bird. And, if an eye not specially trained in ornithology be not at fault, the same species is to be observed on the mainland, along the middle reaches of the Orinoco, in Venezuela.

On a trip into the almost unknown wilderness around the mountain La Selle, in the southeast of Haiti, a summit which has probably not been ascended by a half dozen white men since the Columbian days, and especially on the southern slopes of that mountain, the highest peak in the West Indies, I observed a number of instances of the wonderful way in which this little creature transformed itself from a very shy, deep-shade inhabiting, and noiseless denizen of the jungles into a self-assertive, almost troublesome little tyrant, who would not take "no" for an answer or allow one to overlook or neglect its urgent, insistent appeals for aid.

I had observed the bird for some days, but being on a trip where it was impossible to be burdened with specimens other than the most portable, and being primarily an entomologist, I had paid but little attention to it, save to note how, both in coloration and flight, it closely resembled our cedar-bird and how, unlike its northern ally, it avoided the sunlight and feared man, the latter being an unusual animal characteristic in that region, where a gun is almost unknown. The wild native bees of that region, as well as the now wild descendants from the hives of the early French settlers, of a century ago, prefer the trees of the upper plateaus as home sites rather than the damper and more luxuriant lowlands, where they find most of their honey. So it was not until I had gotten well inland and begun to ascend the upper levels that I was one day electrified by the sudden whirr of one of these usually shy birds, as it flew to the ground right in my path and gave vent to the first notes I had heard uttered by any of its kind. Facing me, with wings extended and moving in a fluttering manner, much as does the bird alarmed by the presence of a snake or a cat, the little creature backed away before me, by short flights, each time, as it alighted, again facing me and uttering a cry that I can best describe as though spelled "Que, que, tr-r-r-r-ll-ll-cheep!-cheep!-que!" with an ascending scale and increased volume of tone on the last three notes.

At first, I was inclined to ascribe this remarkable performance to my proximity to its nest and look upon it as its method of enticing me away from the sacred neighborhood, much as do many of our northern birds, or as does the apparently lamed or wounded mother quail, fluttering almost helplessly before the trespasser, until his distance from her scattered brood makes precipitate flight safe for her. So intent on at least discovering the nest-building plan adopted by this species, I was led on by it from point to point for a distance that seemed quite unnecessary, if my theory was correct. My native guides were lowland, sea-town

men and as much at a loss to understand the bird's apparent distress as was I; but their inherent superstition made them fear to proceed. Your Haitien citizen of "La Grande République" is undoubtedly the most arrant coward and the most fear-enslaved man in all the Americas, every ready to see in the least important occurrence the displeasure of some of the minor or major spirits of the witchcraft-ridden, Obeah-worshipping world he lives in.

It was fortunate, therefore, that just then, while I was about equally engaged in assuring my companions and keeping an eye on the bird, it settled on a limb at the base of which were collected a considerable number of drone wild bees, busily engaged in going in and out of what was undoubtedly the entrance to their storehouse. My African assistants being not one whit less fond of honey than I—and wild honey is, to me, the choicest find of the woodlands—I had no trouble in persuading them that our bird, with its semi-threatening manners, was really a bearer of good tidings, rather than a harbinger of evil, although I had, even then, no inkling of the truth of this theory, advanced only to pacify my men.

With fire and our machetes we soon had the principal part of the coveted store laid bare. During the struggle with tough wood and persistent bees that had rendered this conquest of sweets possible, I had lost sight of my bird; had forgotten it, in fact. It was with no little surprise, therefore, that I suddenly noticed it in the very thick of the comb, picking and devouring, and so oblivious to its surroundings that I almost succeeded in catching it in my hand, and could easily have taken it in my insect net, had I not known that it would break its way out and render its temporary prison unfit for other and more important work.

In the days following I had several opportunities to prove that this experience was not unique, but that my little acquaintance was a veritable and infallible guide to stores of honey and that his own gratification was the end and aim of his very unbirdlike performances. To me, then ignorant of any similar discoveries of travelers, my find was unique, and it was not until I had returned to the libraries of civilization that I discovered that like avian habits had been discovered and briefly described from widely separated parts of the world.

What are we to say of the line of development whereby this habit has become natural to these various birds? How can those who deny any modicum of the reasoning faculty to the lower vertebrates explain the first steps that the ancestors of my little guide must have taken? In the early Carib or Lucayan days, or perchance even centuries before their time, when the native of those wildernesses broke open a store of wild honey, we can imagine the "honey-bird" being at the feast, an early arrival at the second table, even if not at the first of the repast, as now. But what was the first step that led finally to the threatening attitude, the menacing "cheep, cheep, que!" and the step by step guidance to the coveted goal? Who, among the upholders of "instinct," as the only guide, can answer this?

THE AUTOMOBILE INDUSTRY.

The interest in automobile vehicles is increasing from day to day. New companies are constantly being formed and the total authorized capital of the newly incorporated companies amounts, according to The Evening Post, to \$163,100,000, as follows:

	Authorized capital.
The Automobile Company of America	\$5,000,000
The International Vehicle Company of New York.....	5,000,000
The Chicago Electric Vehicle Company.....	2,000,000
The Woods Motor Vehicle Company of Chicago.....	10,000,000
The White Motor Wagon Company.....	10,000,000
The Lewis Motor Vehicle Company	10,000,000
The Columbia Automobile Company.....	3,000,000
The Illinois Electric Vehicle and Transportation Company.....	25,000,000
The New England Electric Vehicle and Transportation Company.....	25,000,000
The New York Electric Vehicle and Transportation Company.....	25,000,000
The Pennsylvania Electric Vehicle Company.....	6,000,000
The General Carriage Company of New Jersey.....	20,000,000
Sixteen companies incorporated for \$100,000 each, by the so-called Electric Vehicle Syndicate, to operate in Tennessee, Georgia, Ohio, Kentucky, New Jersey, Louisiana, Delaware, California, Michigan, Minnesota, Iowa, Maryland, Wisconsin, Indiana, Missouri, and Virginia.	
The Canada Lewis Motor Vehicle Company.....	1,000,000
The National Bicycle and Motor Company.....	2,500,000
The Riker Electric Vehicle Company.....	7,000,000
The Leads Motor Vehicle Company.....	5,000,000
Total	\$163,100,000

And these do not embrace all the companies which have been incorporated for the manufacture of automobiles; it only includes those having the largest capital.

The United States was, at one time, three or four years behind France as regards the automobile industry, but in the last year remarkable progress has been made and now we are even exporting carriages to Europe. According to The Evening Post, Baron Zuylen de Nyevelt, president of the Automobile Club de

France, in his recent annual address before the club, said that there were 600 builders of motor vehicles in France, 110 in England, 80 in Germany, and 60 in the United States. It is probable that the figures as far as France is concerned are greatly exaggerated, unless the figures are intended to cover the carriage makers who simply build the bodies and buy the motors and fittings. Four exhibitions of automobiles in Europe will give great impetus to the industry. In June the Automobile Club de France held its exhibition with nearly 200 exhibitors, and the Automobile Club of Great Britain had about as many, and from July 3 to July 15 a show will be held in Agricultural Hall, Islington, London. The Berlin show will be open on September 3 and will close September 28.

SMYRNA FIGS IN CALIFORNIA.

The larger part of our fig supply comes from Asia Minor, the Spanish Peninsula and the South of France. Those of Asiatic Turkey are considered the best. Certain hymenopterous insects of the genera Blastophaga and Sycophaga which frequent the wild fig enter the minute orifice of the receptacle, apparently to deposit their eggs, conveying thus the pollen more completely to the stigmas, thus insuring the fertilization and consequent ripening of the fruit. By some the nature of the process has been questioned and the better maturation of the fruit attributed merely to the stimulus given by the puncture of the insect, as in the case of the apple, but the arrangement of the unisexual flowers in the fig renders the first theory most probable.

A year ago the Department of Agriculture began a series of experiments on the introduction of the insect which fertilizes the Smyrna fig, an agent was sent to Europe to obtain cuttings of all varieties of the wild fig and to send over the fruit containing the live insect. By good fortune some of the insects succeeded in penetrating the closed flowers of the Capri figs and laid their eggs and really established themselves in California. It is now believed that the insects will continue to breed and that in the near future a fig will be placed upon the market which possesses the same superior flavor as that which has given the imported Smyrna fig its present popularity. The flavor seems to be dependent upon the number of ripened seeds within the fruit. This feature has been ascertained through experiments in the artificial fertilization of the Smyrna figs grown in California. Trials were made with the transfer of the pollen from the Capri figs by means of a toothpick and by means of a blow-pipe. In this way a large number of seeds were fertilized and the characteristic flavor of the European fig was noticed.

WORK OF THE FISH COMMISSION.

The last year was the most successful in the whole history of the Fish Commission. A great part of the work has been in the collection and distribution of the eggs and fry of commercial food fish. Taking shad for instance, by the systematic collection of eggs, the distribution of shad fry, the last annual catch was 13,000,000 or an increase of 8,000,000 since 1885. At the same time the cost of shad has been decreased to the consumer more than 30 per cent. The value of the catch this year is estimated at more than \$800,000. This result has been obtained by the efforts of the Fish Commission at an expenditure of only \$42,000. The work of the California stations this year has been chiefly confined to the propagation of the commercial salmon and to two varieties of the trout. Over 40,000,000 eggs have been distributed from these stations. From the five Oregon stations on the Columbia River, 20,000,000 fry have been planted in the Pacific Coast streams. In the Rocky Mountain region various varieties of the trout were propagated; 60,000,000 fry being distributed. In the middle section of the United States trout, black bass and crappie were distributed in large numbers. From the stations on the Great Lakes where the white fish, lake trout, perch, etc., are collected, no less than 750,000,000 eggs of all kinds were taken and 500,000,000 fry propagated. At the shad stations on the Eastern Coast 300,000,000 shad eggs were collected and 230,000,000 fry planted. In Massachusetts there are two of the largest American fish culture stations in the world; here over 300,000,000 cod eggs were collected, and from 150,000,000 to 200,000,000 fry distributed; over 100,000,000 lobster eggs have been taken, and it is expected that 500,000,000 will be taken before the close of the season.

A MILLION DOLLARS FOR A PATENT.

The president of a large telephone system has offered to pay a million dollars for a telephone repeater which would be as efficient in telephony as the telegraph repeater is in telegraphy. From the earliest days of the telephone to the present time inventors have sought to make such repeaters, and as early as 1878 it was thought that the problem had been solved. It is probable that if such a plan is invented, the experiments leading up to it will be along entirely new lines, for already a large number of trained telephone inventors have tried their hands at it and have failed.

* Revel & Company, New York, 1893.