

The Passenger Pigeon —A Science Classic

Ornithology

THE PASSENGER PIGEON. By John James Audubon. From *Ornithological Biography*, vol. 1, 1831.

THE multitudes of wild pigeons in our woods are astonishing. Indeed, after having viewed them so often, and under so many circumstances, I even now feel inclined to pause and assure myself that what I am going to relate is fact. Yet I have seen it all, and that too, in the company of persons who, like myself, were struck with amazement.

In the autumn of 1813, I left my house at Henderson, on the banks of the Ohio, on my way to Louisville. In passing over the Barrens, a few miles beyond Hardinsburg, I observed the pigeons flying from northeast to southwest in greater numbers than I thought I had ever seen them before, and feeling an inclination to count the flocks that might pass within the reach of my eye in one hour, I dismounted, seated myself on an eminence, and began to mark with my pencil, making a dot for every flock that passed. In a short time finding the task which I had undertaken impracticable, as the birds poured in in countless multitudes, I rose, and counting the dots then put down, found that 163 had been made in 21 minutes. I traveled on, and still met more the farther I proceeded. The air was literally filled with pigeons; the light of noonday was obscured as by an eclipse; the dung fell in spots, not unlike melting flakes of snow; and the continued buzz of wings had a tendency to lull my senses to repose.

The Bird Legions

Whilst waiting for dinner at Young's inn, at the confluence of Salt-River with the Ohio, I saw, at my leisure, immense legions still going by with a front reaching far beyond the Ohio on the west, and the beechwood forests directly on the east of me. Not a single bird alighted; for not a nut or acorn was that year to be seen in the neighborhood. They consequently flew so high, that different trials to reach them with a cap-

ital rifle proved ineffectual; nor did the reports disturb them in the least. I can not describe to you the extreme beauty of their aerial evolutions, when a hawk chanced to press upon the rear of a flock. At once, like a torrent, and with a noise like thunder, they rushed into a compact mass, pressing upon each other toward the center. In these almost solid masses, they darted forward in undulating and angular lines, descended and swept close over the earth with inconceivable velocity, mounted perpendicularly so as to resemble a vast column, and, when high, were seen wheeling and twisting within their continued lines, which then resembled the coils of a gigantic serpent.

Pigeon Pie

Before sunset I reached Louisville, distant from Hardinsburg 55 miles. The pigeons were still passing in undiminished numbers, and continued to do so for three days in succession. The people were all in arms. The banks of the Ohio were crowded with men and boys, incessantly shooting at the pilgrims, which there flew lower as they passed the river. Multitudes were thus destroyed. For a week or more, the population fed on no other flesh than that of pigeons, and talked of nothing but pigeons. The atmosphere, during this time, was strongly impregnated with the peculiar odor which emanates from the species.

It is extremely interesting to see flock after flock performing exactly the same evolutions which had been traced, as it were, in the air by a preceding flock. Thus, should a hawk have charged on a group at a certain spot, the angles, curves, and undulations that have been described by the birds, in their efforts to escape from the dreaded talons of the plunderer, are undeviatingly followed by the next group that comes up. Should the bystander happen to witness one of these affrays, and, struck with the rapidity and elegance of the

Sounding like one of the tall tales for which American pioneers were famous, this description by a famous naturalist of sights that he had witnessed brings home to us the amazing quantity of wild life which abounded on this continent before its destruction by white men. Pehr Kalm in 1759 described the passenger pigeon and stated that "while these birds are hatching their young, or while the latter are not yet able to fly, the savages or Indians in North America are in the habit of never shooting or killing them, nor of allowing others to do so, pretending that it would be a great pity on their young, which would in that case starve to death." The flocks of pigeons, so numerous under the Indians' conservation, in less than a century after the scenes described below, are as extinct as their distant relative, the proverbial dodo.

motions exhibited, feel desirous of seeing them repeated, his wishes will be gratified if he only remain in the place until the next group comes up.

A Billion Pigeons

It may not, perhaps, be out of place to attempt an estimate of the number of pigeons contained in one of those mighty flocks, and of the quantity of food daily consumed by its members. The inquiry will tend to show the astonishing bounty of the great Author of Nature in providing for the wants of His creatures. Let us take a column of 1 mile in breadth, which is far below the average size, and suppose it passing over us without interruption for three hours, at the rate mentioned above of 1 mile in the minute. This will give us a parallelogram of 180 miles by 1, covering 180 square miles. Allowing 2 pigeons to the square yard, we have 1,115,136,000 pigeons in one flock. As every pigeon daily consumes fully half a pint of food, the quantity necessary for supplying this vast multitude must be 8,712,000 bushels per day.

As soon as the pigeons discover a sufficiency of food to entice them to alight, they fly round in circles, reviewing the country below. During their evolutions, on such occasions, the dense mass which they form exhibits a beautiful appearance, as it changes its direction, now displaying a glistening sheet of azure, when the backs of the birds come simultaneously into view, and anon, suddenly presenting a mass of rich deep purple. They then pass lower, over the woods, and for a moment are lost among the foilage, but again

emerge, and are seen gliding aloft. They now alight, but the next moment, as if suddenly alarmed, they take to wing, producing by the flapping of their wings a noise like the roar of distant thunder, and sweep through the forests to see if danger is near. Hunger, however, soon brings them to the ground. When alighted, they are seen industriously throwing up the withered leaves in quest of the fallen mast. The rear ranks are continually rising, passing over the main body, and alighting in front, in such rapid succession, that the whole flock seems still on the wing. The quantity of ground thus swept is astonishing, and so completely has it been cleared, that the gleaner who might follow in their rear would find his labor completely lost. Whilst feeding, their avidity is at times so great that in attempting to swallow a large acorn or nut they are seen gasping for a long while, as if in the agonies of suffocation.

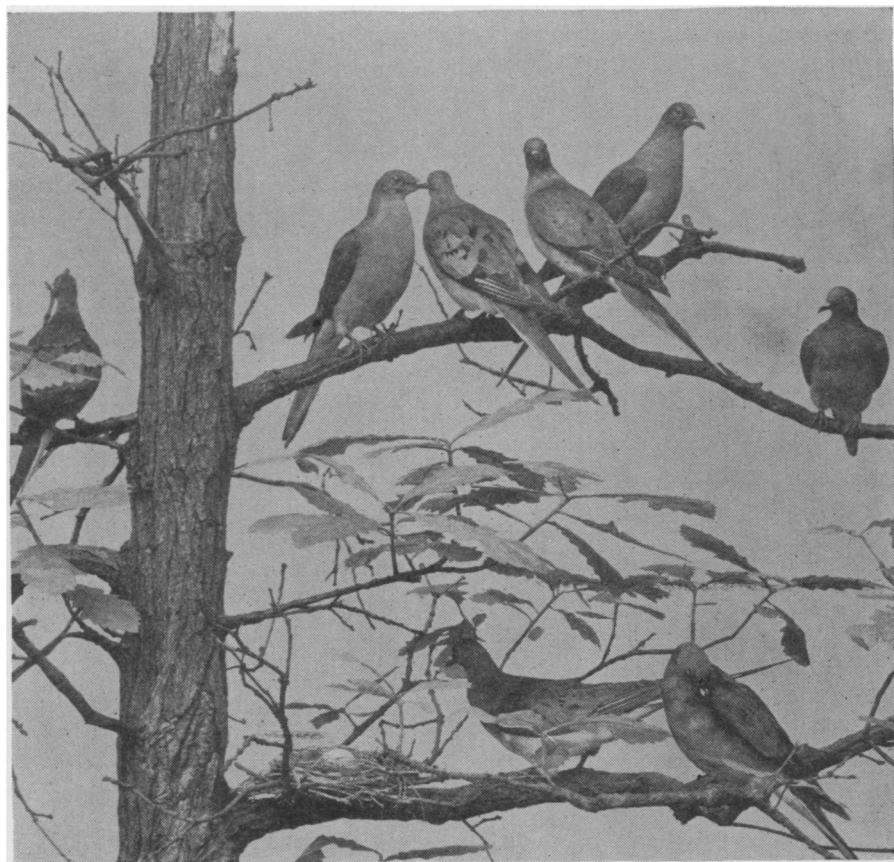
On such occasions, when the woods are filled with these pigeons, they are killed in immense numbers, although no apparent diminution ensues. About the middle of the day, after their repast is finished, they settle on the trees, to enjoy rest, and digest their food. On the ground they walk with

ease, as well as on the branches, frequently jerking their beautiful tail, and moving the neck backward and forward in the most graceful manner. As the sun begins to sink beneath the horizon, they depart en masse for the roosting place, which not unfrequently is hundreds of miles distant, as has been ascertained by persons who have kept an account of their arrivals and departures.

The Slaughter

Let us now, kind reader, inspect their place of nightly rendezvous. One of these curious roosting places, on the banks of the Green River in Kentucky, I repeatedly visited. It was, as is always the case, in a portion of the forest where the trees were of great magnitude, and where there was little underwood. I rode through it upward of 40 miles, and crossing it in different parts, found its average breadth to be rather more than 3 miles. My first view of it was about a fortnight subsequent to the period when they had made choice of it, and I arrived there nearly two hours before sunset. Few pigeons were then to be seen, but a great number of persons, with horses and wagons, guns and ammunition, had already established encampments on the borders. Two farmers from the

vicinity of Russellville, distant more than 100 miles, had driven upward of 300 hogs to be fattened on the pigeons which were to be slaughtered. Here and there, the people employed in plucking and salting what had already been procured, were seen sitting in the midst of large piles of these birds. The dung lay several inches deep, covering the whole extent of the roosting place, like a bed of snow. Many trees 2 feet in diameter, I observed, were broken off at no great distance from the ground, and the branches of many of the largest and tallest had given way, as if the forest had been swept by a tornado. Everything proved to me that the number of birds resorting to this part of the forest must be immense beyond conception. As the period of their arrival approached, their foes anxiously prepared to receive them. Some were furnished with iron pots containing sulphur, others with torches of pine knots, many with poles, and the rest with guns. The sun was lost to our view, yet not a pigeon had arrived. Everything was ready, and all eyes were gazing on the clear sky, which appeared in glimpses amidst the tall trees. Suddenly there burst forth a general cry of "Here they come!" The noise which they made, though yet distant, reminded me of a hard gale at sea passing through the rigging of a close-reefed vessel. As the birds arrived, and passed over me, I felt a current of air that surprised me. Thousands were soon knocked down by the pole men. The birds continued to pour in. The fires were lighted, and a magnificent, as well as wonderful and almost terrifying sight presented itself. The pigeons, arriving by thousands, alighted everywhere, one above another, until solid masses as large as hogsheads, were formed on the branches all round. Here and there the perches gave way under the weight with a crash, and falling to the ground, destroyed hundreds of birds beneath, forcing down the dense groups with which every stick was loaded. It was a scene of uproar and confusion. I found it quite useless to speak, or even to shout (Turn to page 93)



A group of passenger pigeons as they appeared in life, shown in the Field Museum of Natural History in Chicago. These now-extinct birds lived in enormous flocks, whose weight sometimes broke the trees in which they roosted.

R-100 Tests New Structural Features

Aeronautics

Hundreds of People Have Safely Crossed Ocean in Airships

THE safe arrival at Montreal, Canada, of the British airship R-100 after a non-stop flight of 3,400 miles from Cardington, England, shows again that the day of regular trans-Atlantic travel by airship is not far distant.

Since the R-100, one of the two largest airships in the world, is an experimental ship and in many respects is unlike any that has ever been built, the success of this trip helps to establish the present superiority of the airship over the airplane for trans-Atlantic travel. However, the only airplane that can carry nearly as many passengers as an airship, the giant German Dornier DO-X, is yet to make a flight from Europe to America. Her performance will be watched with even more interest than that which now attends the R-100.

475 Crossed by Airship

Safety proclaims the airship as the logical means of crossing the Atlantic by air. With the arrival of the R-100 bearing 44 persons, about 475 people have crossed the North Atlantic non-stop by air, it is reported. Of this number statistics show that approximately 442, or 93 per cent., have made the passage by airship and only about 33, or seven per cent., have crossed by airplane.

There have been nine attempts to fly the North Atlantic by rigid airships and all have been successful; no lives have been lost. Thirty-seven attempts have been made to fly by airplane and only 13 of these have been successful. The great loss of life resulting from the airplane attempts is well known.

No Pay Load in Planes

None of the airplanes carried a pay load, while the Graf Zeppelin on each of its five trips took 20 passengers and several tons of mail and express. Seven persons on the R-100 are observers. Two other crossings were made by the British R-34 and one by the U. S. S. Los Angeles.

The chief innovation in the design of the R-100 is its "fatness." The Graf is a slender cigar while the R-100 curves throughout its entire length in graceful lines. It is about 70 feet shorter than the German ship and a

third larger in diameter. This feature is said to give it great strength to resist shearing stress similar to that which caused the Shenandoah disaster in the United States.

Only 42 Parts

Although more than five years elapsed from the awarding of contract in 1924 to the delivery of the ship, new methods developed during that time should greatly speed up the production and reduce the cost of similar airships to be built in the future. For example, every girder was made up from only seven different parts and there were only 42 different kinds of parts in the whole framework. Thus the pieces were ordered in lots of half-millions and the building of an airship was made a mass-production job.

The beams and girders of the R-100 were not made from aluminum alloy rolled into shape like iron and steel, as has been the case in the past. Instead, thin strips of the light metal

were coiled into spiral tubes and riveted along the overlap. Structural pieces built in this fashion are claimed to be more uniform in size and strength than others, and more easily tested and inspected.

Science News-Letter, August 9, 1930

Find No Fruit Fly

ENTOMOLOGICAL inspectors in the fruit-fly area in Florida did not find any of the troublesome pests during the month of July, it has been learned from the U. S. Department of Agriculture officials.

This does not mean, however, that the infestation has been completely stamped out, for a small focus may still exist somewhere in the state, capable of starting the mischief all over again if vigilance is relaxed. For this reason growers are zealously spraying with poison bait sprays even where the fly has not been seen for months.

Entomology

Science News-Letter, August 9, 1930

The Passenger Pigeon—Continued

to those persons who were nearest to me. Even the reports of the guns were seldom heard, and I was made aware of the firing only by seeing the shooters reloading.

No one dared venture within the line of devastation. The hogs had been penned up in due time, the picking up of the dead and wounded being left for the next morning's employment. The pigeons were constantly coming, and it was past midnight before I perceived a decrease in the number of those that arrived. The uproar continued the whole night, and as I was anxious to know to what distance the sound reached, I sent off a man accustomed to perambulate the forest, who, returning two hours afterwards, informed me he had heard it distinctly when 3 miles from the spot. Toward the approach of day, the noise in some measure subsided; long before objects were distinguishable, the pigeons began to move off in a direction quite different from that in which they had arrived the evening before, and at

sunrise all that were able to fly had disappeared. The howling of the wolves now reached our ears, and the foxes, lynxes, cougars, bears, raccoons, opossums and polecats were seen sneaking off, whilst eagles and hawks of different species, accompanied by a crowd of vultures, came to supplant them, and enjoy their share of the spoil.

It was then that the authors of all this devastation began their entry amongst the dead, the dying, and the mangled. The pigeons were picked up and piled in heaps, until each had as many as he could possibly dispose of, when the hogs were let loose to feed on the remainder.

Persons unacquainted with these birds might naturally conclude that such dreadful havoc would soon put an end to the species. But I have satisfied myself, by long observation, that nothing but the gradual diminution of our forests can accomplish their decrease, as they not unfrequently quadruple their numbers yearly, and always at least double it.

Science News-Letter, August 9, 1930