

BIOLOGY

The American Eagle

"A Classic of Science"

The National Emblem Was Well Known to Our Forefathers When Audubon, Hunter, Artist, Scientist, Described Him

ORNITHOLOGICAL BIOGRAPHY, or An Account of the Habits of the Birds of the United States of America, by John James Audubon, Edinburgh, 1831-39.

THE FIGURE of this noble bird is well known throughout the civilized world, emblazoned as it is on our national standard, which waves in the breeze of every clime, bearing to distant lands the remembrance of a great people living in a state of peaceful freedom. May that peaceful freedom last for ever!

The great strength, daring, and cool courage of the White-headed Eagle, joined to his unequalled power of flight, render him highly conspicuous among his brethren. To these qualities did he add a generous disposition towards others, he might be looked up to as a model of nobility. The ferocious, overbearing, and tyrannical temper which is ever and anon displaying itself in his actions, is, nevertheless, best adapted to his state, and was wisely given him by the Creator to enable him to perform the office assigned to him.

The flight of the White-headed Eagle is strong, generally uniform, and protracted to any distance, at pleasure. Whilst travelling, it is entirely supported by equal easy flappings, without any intermission, in as far as I have observed it, by following it with the eye or the assistance of a glass. When looking for prey, it sails with extended wings, at right angles to its body, now and then allowing its legs to hang at their full length. Whilst sailing, it has the power of ascending in circular sweeps, without a single flap of the wings, or any apparent motion either of them or of the tail; and in this manner it often rises until it disappears from the view, the white tail remaining longer visible than the rest of the body. At other times, it rises only a few hundred feet in the air, and sails off in a direct line, and with rapidity. Again, when thus elevated, it partially closes its wings, and glides downwards for a considerable space, when, as if disap-

pointed, it suddenly checks its career, and resumes its former steady flight. When at an immense height, and as if observing an object on the ground, it closes its wings, and glides through the air with such rapidity as to cause a loud rustling sound, not unlike that produced by a violent gust of wind passing amongst the branches of trees. Its fall towards the earth can scarcely be followed by the eye on such occasions, the more particularly that these falls or glidings through the air usually take place when they are least expected.

At times, when these Eagles, sailing in search of prey, discover a Goose, a Duck, or a Swan, that has alighted on the water, they accomplish its destruction in a manner that is worthy of your attention. The Eagles, well aware that waterfowl have it in their power to dive at their approach, and thereby elude their attempts upon them, ascend in the air in opposite directions over the lake or river, on which they have observed the object, which they are desirous of possessing. Both Eagles reach a certain height, immediately after which one of them glides with great swiftness towards the prey; the latter, meantime, aware of the Eagle's intention dives the moment before he reaches the spot. The pursuer then rises in the air, and is met by its mate, which glides toward the water-bird, that has just emerged to breathe, and forces it to plunge again beneath the surface, to escape the talons of this second assailant. The first Eagle is now poisoning itself in the place where its mate formerly was, and rushes anew to force the quarry to make another plunge. By thus alternately gliding in rapid and often repeated rushes, over the ill-fated bird, they soon fatigue it, when it stretches out its neck, swims deeply, and makes for the shore, in the hope of concealing itself among the rank weeds. But this is of no avail; for the Eagles follow it in all its motions, and the moment it approaches the margin, one of them darts upon it, and kills it in an instant, after which they divide the spoil.

During the spring and summer, the White-headed Eagle, to procure sustenance, follows a different course, and one much less suited to a bird apparently so well able to supply itself without interfering with other plunderers. No sooner does the Fish-Hawk make its appearance along our Atlantic shores, or ascend our numerous and large rivers, than the Eagle follows it, and, like a selfish oppressor, robs it of the hard-earned fruits of its labour. Perched on some tall summit, in view of the ocean, or of some water-course, he watches every motion of the Osprey while on wing. When the latter rises from the water, with a fish in its grasp, forth rushes the Eagle in pursuit. He mounts above the Fish-Hawk, and threatens it by actions well understood, when the latter, fearing perhaps that its life is in danger, drops its prey. In an instant, the Eagle, accurately estimating the rapid descent of the fish closes his wings, follows it with the swiftness of thought, and the next moment grasps it. The prize is carried off in silence to the woods, and assists in feeding the ever-hungry brood of the marauder. . . .

The nest, which in some instances is of great size, is usually placed on a very tall tree, destitute of branches to a considerable height, but by no means always a dead one. It is never seen on rocks. It is composed of sticks, from three to five feet in length, large pieces of turf, rank weeds, and Spanish moss in abundance, whenever that substance happens to be near. When finished, it measures from five to six feet in diameter, and so great is the accumulation of materials, that it sometimes measures the same in depth. It being occupied for a great number of years in succession, and receiving some augmentation each season. When placed

Silicon, Tin and Lead

Early moments in their history will
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THE NEXT CLASSIC OF SCIENCE

in a naked tree, between the forks of the branches, it is conspicuously seen at a great distance. The eggs, which are from two to four, more commonly two or three, are of a dull white colour, and equally rounded at both ends, some of them being occasionally granulated. Incubation lasts for more than three weeks, but I have not been able to ascertain its precise duration, as I have observed the female on different occasions sit for a few days in the nest, before laying the first egg. Of this I assured myself by climbing to the nest every day in succession during her temporary absence,—a rather perilous undertaking when the bird is sitting.

I have seen the young birds when not larger than middle-sized pullets. At this time they are covered with a soft cottony kind of down, their bill and legs appearing disproportionately large. Their first plumage is of a greyish colour, mixed with brown of different depths of tint, and before the parents drive them off from the nest they are full fledged. As a figure of the young White-headed Eagle will appear in the course of the publication of my illustrations, I shall not here trouble you with a description of its appearance. I once caught three young eagles of this species, when fully fledged, by having the tree, on which their nest was, cut down. It caused great trouble to secure them, as they could fly and scramble much faster than any of our party could run. They, however, gradually became fatigued, and at length were so exhausted as to offer no resistance, when we were securing them with cords. This happened on the border of Lake Ponchartrain, in the month of April. The parents did not think fit to come within gun-shot of the tree while the axe was at work.

The attachment of the parents to the young is very great, when the latter are yet of a small size; and to ascend to the nest at this time would be dangerous. But as the young advance, and, after being able to take wing and provide for themselves, are not disposed to fly off, the old birds turn them out, and beat them away from them. They return to the nest, however, to roost, or sleep on the branches immediately near it, for several weeks after. They are fed most abundantly while under the care of the parents, which procure for them ample supplies of fish, either accidentally cast ashore, or taken from the Fish-Hawk, together with rabbits, squirrels, young lambs, pigs, opossums, or racoons. Every thing that comes in the way is relished by the young family, as by the old birds.



THE AMERICAN EAGLE

Painted by Audubon and engraved for his great folio book: "The Birds of America, from original drawings by John James Audubon, published by the author. London 1827-38." The pictures and text, originally printed as separate books, were combined in later editions.

The young birds begin to breed the following spring, not always in pairs of the same age, as I have several times observed one of these birds in brown plumage mated with a full-coloured bird, which had the head and tail pure white. I once shot a pair of this kind, when the brown bird (the young one) proved to be the female.

This species requires at least four years before it attains the full beauty of its plumage when kept in confinement. I have known two instances in which the white of the head did not make its appearance until the sixth spring. It is impossible for me to say how much sooner this state of perfection is attained, when the bird is at full liberty, although I should suppose it to be at least one year, as the bird is capable of breeding the first spring after birth.

The weight of the Eagles of this species varies considerably. In the males, it is from six to eight pounds, and in the females from eight to twelve. These birds are so attached to particular districts, where they have first made their nest, that they seldom spend a night at any distance from the latter, and often resort to its immediate neighborhood. Whilst asleep, they emit a loud hissing sort of snore, which is heard at the distance of a hundred yards, when the weather is perfectly calm. Yet, so light is their sleep, that the cracking of a stick under the foot of a person immediately wakens them. When it is attempted to smoke them while thus roosted and asleep, they start up and sail off without uttering any sound, but return next evening to the same spot.

Before steam navigation commenced on our western rivers, these Eagles were extremely abundant there, particularly in the lower parts of the Ohio, the Mississippi, and the adjoining streams. I have seen hundreds while going down from the north of the Ohio to New Orleans, when it was not at all difficult to shoot them. Now, however, their number is considerably diminished, the game on which they were in the habit of feeding, having been forced to seek refuge from the persecution of man farther in the wilderness. Many, however, are still observed on these rivers, particularly along the shores of the Mississippi.

In concluding this account of the Whiteheaded Eagle, suffer me, kind reader, to say how much I grieve that it should have been selected as the emblem of my country. The opinion of our great Franklin on this subject, as it perfectly coincides with my own, I shall here present to you. "For my part," says he, in one of his letters, "I wish the Bald Eagle had not been chosen as the representative of our country. He is a bird of bad moral character; he does not get his living honestly; you may have seen him perched on some dead tree, where, too lazy to fish for himself, he watches the labour of the Fishing-Hawk; and when that diligent bird has at length taken a fish, and is bearing it to his nest for the support of his mate and young ones, the Bald Eagle pursues him, and takes it from him. With all this injustice, he is never in good case, but, like those among men who live by sharpening and robbing, he is generally poor, and often very lousy. Besides, he is a rank (Please turn Page)

coward; the little King Bird, not bigger than a Sparrow, attacks him boldly, and drives him out of the district. He is therefore, by no means a proper emblem for the brave and honest Cincinnati of America, who have driven all the King Birds from our country; though exactly fit for that order of knights which the French call Chevaliers d'Industrie."

Science News Letter, June 25, 1932

In the buildings of ancient Rome, nine different kinds of colored marbles were widely used, and many other rarer kinds were occasionally introduced.

Some of the rarest tulips that brought fabulous prices during the Dutch tulip mania, in 1637, owed their peculiar featherings of color to a mosaic disease.

ARCHAEOLOGY

Tepe Gawra Becomes Holder "World's Oldest Town" Title

"THE OLDEST Town in the World." This title of honor has suddenly been taken from other claimants and conferred upon the ruins of Tepe Gawra, in northern Mesopotamia.

The archaeologists who by their excavations have pushed back the history of cities to 3700 B. C. are with a joint expedition of the University of Pennsylvania Museum and the American Schools of Oriental Research. Dr. E. A. Speiser reported the discovery.

This oldest town ever found on earth

is far from being a bungling experiment that "just grew." The city fathers followed a carefully thought out planning scheme, Dr. Speiser reports. The heart of the settlement was an imposing forum. To the north were two shrines, connected by such buildings as bath houses and storage rooms. A citadel was near the center of town. The southern part of town was a residential section. The streets were well laid out, and on one street was a bazaar or market.

The planners gave thought to emergencies. They provided a capacious reservoir almost 100 feet deep, for a water supply in time of siege.

Dr. Speiser has high praise for the architectural talents of Tepe Gawra's early builders. They showed excellent taste, he states, in the restraint with which they checked their enthusiasm for elaborate ornament. They knew how to construct the true arch, and used their knowledge to build vaulted ante-chambers in the houses. This is pronounced the first time in history that the true arch appears. The discoveries at Tepe Gawra add a new and important chapter to the history of architecture.

The ruins which rank as the oldest town are buried eight layers deep. Ruins of the sixth layer are as old as the royal tombs of Ur. The eighth layer is pronounced 500 years older.

Ur of the Chaldees was hailed as the oldest town known, only a few years ago. Then, excavations at Susa revealed a town of greater age than Ur, only to be replaced now by the older settlement of Tepe Gawra. All these towns are in the Near East.

Science News Letter, June 25, 1932

DIETETICS

Pasteurized Milk Good For Children, Survey Shows

HEATING milk in the process of pasteurizing it to make it free from germs does not affect its nutritive qualities for children of from two to six years, Leslie C. Frank, sanitary engineer in charge of milk investigations of the U. S. Public Health Service, reported to the Conference of State and Territorial Health Officers with the

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