breadth, toward the lower part enlarged to 4 twelfths, finally contracted to 3 twelfths. The rings are 252, with 4 terminal dimidiate rings. The right bronchus has 19, the left 20 half rings. The muscles are in all respects as in *Ardea occidentalis*.

GREAT AMERICAN WHITE EGRET.

+ARDEA EGRETTE, *Gmel.*

PLATE CCCLXX.—MALE.

The truly elegant Heron which now comes to be described, is a constant resident in the Floridas; it migrates eastward sometimes as far as the State of Massachusetts, and up the Mississippi to the city of Natchez, and is never seen far inland, by which I mean that its rambles into the interior seldom extend to more than fifty miles from the sea-shore, unless along the course of our great rivers. On my way to Texas, in the spring of 1837, I found these birds in several places along the coast of the Gulf of Mexico, and on several of the islands scattered around that named Galveston, where, as well as in the Floridas, I was told that they spend the winter.

The Great American Egret breeds along the shores of the Gulf of Mexico, and our Atlantic States, from Galveston Island in Texas to the borders of the State of New York, beyond which, although stragglers have been seen, none, in so far as I can ascertain, have been known to breed. In all low districts that are marshy and covered with large trees, on the margins of ponds or lakes, the sides of bayous, or gloomy swamps covered with water, are the places to which it generally resorts during the period of reproduction; although I have in a few instances met with their nests on low trees, and on sandy islands at a short distance from the mainland. As early as December I have observed vast numbers congregated, as if for the purpose of making choice of partners, when the addresses of the males were paid in a very curious and to me interesting manner. Near the plantation of JOHN BULOW, Esq. in East Florida, I had the pleasure of witnessing this sort of tournament or dress-ball from a place of concealment not more than a hundred yards distant. The males, in strutting round the females, swelled their

Great American White Egret.

Drawn from Nature by J. J. Audubon F. R. S. F. L. S.

1. Male, Spring Plumage. 2. Horned Grebe, Tropicbird of Hernandez.

With Printed & Coloured by J. T. Bowen, Phila.

throats, as Cormorants do at times, emitted gurgling sounds, and raising their long plumes almost erect, paced majestically before the fair ones of their choice. Although these snowy beaux were a good deal irritated by jealousy, and conflicts now and then took place, the whole time I remained, much less fighting was exhibited than I had expected from what I had already seen in the case of the Great Blue Heron, *Ardea Herodias*. These meetings took place about ten o'clock in the morning, or after they had all enjoyed a good breakfast, and continued until nearly three in the afternoon, when, separating into flocks of eight or ten individuals, they flew off to search for food. These manœuvres were continued nearly a week, and I could with ease, from a considerable distance, mark the spot, which was a clear sand-bar, by the descent of the separate small flocks previous to their alighting there.

The flight of this species is in strength intermediate between that of *Ardea Herodias* and *A. rufescens*, and is well sustained. On foot its movements are as graceful as those of the Louisiana Heron, its steps measured, its long neck gracefully retracted and curved, and its silky train reminded one of the flowing robes of the noble ladies of Europe. The train of this Egret, like that of other species, makes its appearance a few weeks previous to the love season, continues to grow and increase in beauty, until incubation has commenced, after which period it deteriorates, and at length disappears about the time when the young birds leave the nest, when, were it not for the difference in size, it would be difficult to distinguish them from their parents. Should you, however, closely examine the upper plumage of an old bird of either sex, for both possess the train, you will discover that its feathers still exist, although shortened and deprived of most of their filaments. Similar feathers are seen in all other Herons that have a largely developed train in the breeding season. Even the few plumes hanging from the hind part of the *Ardea Herodias*, *A. Nycticorax*, and *A. violacea*, are subject to the same rule; and it is curious to see these ornaments becoming more or less apparent, according to the latitude in which these birds breed, their growth being completed in the southern part of Florida two months sooner than in our Middle Districts.

The American Egrets leave the Floridas almost simultaneously about the 1st of March, and soon afterwards reach Georgia and South Carolina, but rarely the State of New Jersey, before the middle of May. In these parts the young are able to fly by the 1st of August. On the Mule Keys off the coast of Florida, I have found the young well grown by the 8th of May; but in South Carolina they are rarely hatched until toward the end of that month or the beginning of June. In these more southern parts two broods are often raised in a season, but in the Jerseys there is, I believe, never more than one. While travelling, early in spring, between Savannah in Georgia

and Charleston in South Carolina, I saw many of these Egrets on the large rice plantations, and felt some surprise at finding them much wilder at that period of their migrations than after they have settled in some locality for the purpose of breeding. I have supposed this to be caused by the change of their *thoughts* on such occasions, and am of opinion that birds of all kinds become more careless of themselves. As the strength of their attachment toward their mates or progeny increases through the process of time, as is the case with the better part of our own species, lovers and parents performing acts of heroism, which individuals having no such attachment to each other would never dare to contemplate. In these birds the impulse of affection is so great, that when they have young they allow themselves to be approached, so as often to fall victims to the rapacity of man, who, boasting of reason and benevolence, ought at such a time to respect their devotion.

The American Egrets are much attached to their roosting places, to which they remove from their feeding grounds regularly about an hour before the last glimpse of day; and I cannot help expressing my disbelief in the vulgar notion of birds of this family usually feeding by night, as I have never observed them so doing even in countries where they were most abundant. Before sunset the Egrets and other Herons (excepting perhaps the Bitterns and Night Herons) leave their feeding grounds in small flocks, often composed of only a single family, and proceed on wing in the most direct course, at a moderate height, to some secure retreat more or less distant, according to the danger they may have to guard against. Flock after flock may be seen repairing from all quarters to these places of repose, which one may readily discover by observing their course.

Approach and watch them. Some hundreds have reached the well-known rendezvous. After a few gratulations you see them lower their bodies on the stems of the trees or bushes on which they have alighted, fold their necks, place their heads beneath the scapular feathers, and adjust themselves for repose. Daylight returns, and they are all in motion. The arrangement of their attire is not more neglected by them than by the most fashionable fops, but they spend less time at the toilet. Their rough notes are uttered more loudly than in the evening, and after a very short lapse of time they spread their snowy pinions, and move in different directions, to search for fiddlers, fish, insects of all sorts, small quadrupeds or birds, snails, and reptiles, all of which form the food of this species.

The nest of the Great White Egret, whether placed in a cypress one hundred and thirty feet high, or on a mangrove not six feet above the water, whether in one of those dismal swamps swarming with loathsome reptiles, or by the margin of the clear blue waters that bathe the Keys of Florida, is large, flat, and composed of sticks, often so loosely put together as to make

you wonder how it can hold, besides itself, the three young ones which this species and all the larger Herons have at a brood. In a few instances only have I found it compactly built, it being the first nest formed by its owners. It almost always overhangs the water, and is resorted to and repaired year after year by the same pair. The eggs, which are never more than three, measure two inches and a quarter in length, an inch and five-eighths in breadth, and when newly laid are smooth, and of a pale blue colour, but afterwards become roughish and faded. When the nest is placed on a tall tree, the young remain in it, or on its borders, until they are able to fly; but when on a low tree or bush, they leave it much sooner, being capable of moving along the branches without fear of being injured by falling, and knowing that should they slip into the water they can easily extricate themselves by striking with their legs until they reach either the shore or the nearest bush, by clinging to the stem of which they soon ascend to the top.

This Egret is shy and vigilant at all times, seldom allowing a person to come near unless during the breeding season. If in a rice-field of some extent, and at some distance from its margins, where cover can be obtained, you need not attempt to approach it; but if you are intent on procuring it, make for some tree, and desire your friend to start the bird. If you are well concealed, you may almost depend on obtaining one in a few minutes, for the Egrets will perhaps alight within twenty yards or less of you. Once, when I was very desirous of making a new drawing of this bird, my friend JOHN BACHMAN followed this method, and between us we carried home several superb specimens.

The long plumes of this bird being in request for ornamental purposes, they are shot in great numbers while sitting on their eggs, or soon after the appearance of the young. I know a person who, on offering a double-barrelled gun to a gentleman near Charleston, for one hundred White Herons fresh killed, received that number and more the next day.

The Great Egret breeds in company with the Anhinga, the Great Blue Heron, and other birds of this family. The Turkey Buzzards and the Crows commit dreadful havoc among its young, as well as those of the other species. My friend JOHN BACHMAN gives me the following account of his visit to one of its breeding places, at the "Round O," a plantation about forty miles from Charleston: "Our company was composed of BENJAMIN LOGAN, S. LEE, and Dr. MARTIN. We were desirous of obtaining some of the Herons as specimens for stuffing, and the ladies were anxious to procure many of their primary feathers for the purpose of making fans. The trees were high, from a hundred to a hundred and thirty feet, and our shot was not of the right size; but we commenced firing at the birds, and soon discovered that we had a prospect of success. Each man took his tree, and

loaded and fired as fast as he could. Many of the birds lodged on the highest branches of the cypresses, others fell into the nest, and, in most cases, when shot from a limb, where they had been sitting, they clung to it for some time before they would let go. One thing surprised me: it was the length of time it took for a bird to fall from the place where it was shot, and it fell with a loud noise into the water. Many wounded birds fell some distance off, and we could not conveniently follow them on account of the heavy wading through the place. We brought home with us forty-six of the large White Herons, and three of the Great Blue. Many more might have been killed, but we became tired of shooting them."

ARDEA EGRETTE, Gmel. Syst. Nat., vol. i. p. 629.

GREAT WHITE HERON, *Ardea Egretta*, Wils. Amer. Orn., vol. vii. p. 106.

ARDEA ALBA, Bonap. Syn., p. 304.

ARDEA EGRETTE, Wagler, Syst. Av.

GREAT WHITE HERON, Nutt. Man., vol. ii. p. 47.

GREAT AMERICAN EGRET, *Ardea Egretta*, Aud. Orn. Biog., vol. iv. p. 600.

Male, 37, 57.

Resident in Florida, and Galveston Bay in Texas. Migrates in spring sometimes as far as Massachusetts; up the Mississippi to Natchez. Breeds in all intermediate districts. Returns south before winter. Very abundant.

Adult Male in summer.

Bill much longer than the head, straight, compressed, tapering to a point, the mandibles nearly equal. Upper mandible with the dorsal line nearly straight, the ridge broad and slightly convex at the base, narrowed and becoming rather acute towards the end, a groove from the base to two-thirds of the length, beneath which the sides are convex, the edges thin and sharp, with a notch close to the acute tip. Nostrils basal, linear, longitudinal, with a membrane above and behind. Lower mandible with the angle extremely narrow and elongated, the dorsal line beyond it ascending and almost straight, the edges sharp and direct, the tip acuminate.

Head small, oblong, compressed. Neck very long and slender. Body slender and compressed. Feet very long, tibia elongated, its lower half bare, slender, covered anteriorly and laterally with hexagonal scales, posteriorly with scutella; tarsus elongated, compressed, covered anteriorly with numerous scutella, some of which are divided laterally and posteriorly with angular scales. Toes of moderate length, rather slender, scutellate above, granulate beneath; third toe considerably longer than the fourth, which exceeds the second; the first large; the claws of moderate length, rather strong, arched, compressed, rather acute, that of the hind toe much larger, the inner edge of that of the third regularly pectinated.

Space between the bill and eye, and around the latter, bare. Plumage soft, blended; the feathers oblong, with their filaments generally disunited, unless on the wings and tail. There is no crest on the head, but the feathers on its upper and hind part are slightly elongated; those on the lower part of the neck anteriorly are elongated; and from between the scapulæ arises a tuft of extremely long, slightly decurved feathers, which extend about ten inches beyond the end of the tail, and have the shaft slightly undulated, the filaments long and distant. The wing is of moderate length; the primaries tapering but rounded, the second and third longest, the first slightly shorter than the fourth; the secondaries broad and rounded, some of the inner as long as the longest primaries, when the wing is closed. Tail very short, small, slightly rounded, of twelve rather weak feathers.

Bill bright yellow, as is the bare space between it and the eye; iris pale yellow; feet and claws black. The plumage is pure white.

Length to end of tail 37 inches, to end of claws 49, to end of wings $57\frac{1}{4}$, to carpus $23\frac{1}{2}$, to end of dorsal plumes 57; bill along the ridge $4\frac{7}{12}$, along the edge of lower mandible $5\frac{5}{12}$; wing from flexure $16\frac{1}{2}$; tail $6\frac{1}{4}$; extent of wings 55; bare part of tibia $3\frac{1}{2}$; tarsus $6\frac{1}{12}$; hind toe $1\frac{1}{2}$, its claw $1\frac{2}{12}$; second toe $2\frac{8}{12}$, its claw $\frac{7}{12}$; third toe $3\frac{11}{12}$, its claw $\frac{9}{12}$; fourth toe $3\frac{2}{12}$, its claw $\frac{7}{12}$. Weight $2\frac{1}{4}$ lbs.

The Female is similar to the male, but somewhat smaller.

The roof of the mouth is slightly concave, with a median and two lateral longitudinal ridges, the palate convex, the posterior aperture of the nares linear, without an anterior slit. The mouth is rather narrow, measuring only 8 twelfths across, but is dilatable to $1\frac{1}{2}$ inches, the branches of the lower mandible being very elastic. The aperture of the ear is very small, being 2 twelfths in diameter, and roundish. The œsophagus is 2 feet 2 inches long, 1 inch and 4 twelfths in diameter, extremely thin, the longitudinal fibres within the transverse, the inner coat raised into numerous longitudinal ridges. The œsophagus continues of uniform diameter, and passes as it were directly into the stomach, there being no enlargement at its termination indicative of the proventriculus, which however exists, but in a modified form, there being at the termination of the gullet eight longitudinal series of large mucous crypts, about half an inch long, and immediately afterwards a continuous belt, $1\frac{1}{2}$ inches in breadth, of small cylindrical mucous crypts with minute apertures. Beyond this the stomach forms a hemispherical sac $1\frac{1}{2}$ inches in diameter, of a membranous structure, having externally beneath the cellular coat a layer of slender muscular fibres, convex towards two roundish tendons, and internally a soft, thin, smooth lining, perforated by innumerable minute apertures of glandules. The

intestine is very long and extremely slender, measuring 6 feet 7 inches in length, its average diameter 2 twelfths. The rectum, *b d f*, is 3 inches long; the cloaca, *d e f*, globular, $1\frac{1}{2}$ inches in diameter; the cœcum, *c*, single, as in the other Herons, 3 twelfths long, and nearly 2 twelfths in diameter.

The trachea is 1 foot $9\frac{1}{4}$ inches long, of nearly uniform diameter, flattened a little for about half its length, its greatest breadth $3\frac{1}{2}$ twelfths; the rings 285, the last four rings divided and arched. The contractor muscles are extremely thin, the sterno-tracheal moderate, and coming off at the distance of 1 inch from the lower extremity, from which place also there proceeds to the two last rings a pair of slender inferior laryngeal muscles. The bronchi are very short, of about two half rings.

TAPAYAXIN.

The animal represented on the plate is the *Tapayaxin* of HERNANDEZ, *Phrynosoma orbicularis* of WIEGMANN, *Tapaya orbicularis* of CUVIER. The specimen from which it was drawn was entrusted to my care by my friend RICHARD HARLAN, M. D., to whom it was presented by Mr. NUTTALL, who found it in California. A notice respecting this species by Dr. HARLAN will be found in the American Journal of Science and Arts, vol. xxxi.

Great American White Egret.

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1. Male, Spring Plumage. 2. Horned Grebe, Tropicbird of Hernandez.

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