COMMON GANNET.

†SULA BASSANA, *Linn.*

PLATE CCCCXXV.—ADULT MALE AND YOUNG.

On the morning of the 14th of June, 1833, the white sails of the Ripley were spread before a propitious breeze, and onward she might be seen gaily wending her way toward the shores of Labrador. We had well explored the Magdalene Islands, and were anxious to visit the Great Gannet Rock, where, according to our pilot, the birds from which it derives its name breed. For several days I had observed numerous files proceeding northward, and marked their mode of flight while thus travelling. As our bark dashed through the heaving billows, my anxiety to reach the desired spot increased. At length, about ten o'clock, we discerned at a distance a white speck, which our pilot assured us was the celebrated rock of our wishes. After awhile I could distinctly see its top from the deck, and thought that it was still covered with snow several feet deep. As we approached it, I imagined that the atmosphere around was filled with flakes, but on my turning to the pilot, who smiled at my simplicity, I was assured that nothing was in sight but the Gannets and their island home. I rubbed my eyes, took up my glass, and saw that the strange dimness of the air before us was caused by the innumerable birds, whose white bodies and black-tipped pinions produced a blended tint of light grey. When we had advanced to within half a mile, this magnificent veil of floating Gannets was easily seen, now shooting upwards, as if intent on reaching the sky, then descending as if to join the feathered masses below, and again diverging toward either side and sweeping over the surface of the ocean. The Ripley now partially furled her sails, and lay to, when all on board were eager to scale the abrupt sides of the mountain isle, and satisfy their curiosity.

Judge, reader, of our disappointment. The weather, which hitherto had been beautiful, suddenly changed, and we were assailed by a fearful storm. However, the whale-boat was hoisted over, and manned by four sturdy "down-easters," along with THOMAS LINCOLN and my son. I remained on board the Ripley, and commenced my distant observations, which I shall relate in due time.

An hour has elapsed; the boat, which had been hid from our sight, is now

Common Loon.

1. Adult male, 2. Young

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

Published & Sold by J. T. Bowen, Philad^a

in view; the waves run high, and all around looks dismal. See what exertions the rowers make; it blows a hurricane, and each successive billow seems destined to overwhelm their fragile bark. My anxiety is intense, as you may imagine; in the midst of my friends and the crew I watch every movement of the boat, now balanced on the very crest of a rolling and foaming wave, now sunk far into the deep trough. We see how eagerly yet calmly they pull. My son stands erect, steering with a long oar, and LINCOLN is bailing the water which is gaining on him, for the spray ever and anon dashes over the bow. But they draw near, a rope is thrown and caught, the whale-boat is hauled close under our lee-board; in a moment more all are safe on deck, the helm round, the schooner to, and away under bare poles she scuds toward Labrador.

THOMAS LINCOLN and my son were much exhausted, and the sailors required a double allowance of grog. A quantity of eggs of various kinds, and several birds, had been procured, for wherever sufficient room for a Gannet's nest was not afforded on the rock, one or two Guillemots occupied the spot, and on the ledges below, the Kittiwakes lay thick like snow-flakes. The discharging of their guns produced no other effect than to cause the birds killed or severely wounded to fall into the water, for the cries of the countless multitudes drowned every other noise. The party had their clothes smeared with the nauseous excrements of hundreds of Gannets and other birds, which in shooting off from their nests caused numerous eggs to fall, of which some were procured entire. The confusion on and around the rock was represented as baffling all description; and as we gazed on the mass now gradually fading on our sight, we all judged it well worth the while to cross the ocean to see such a sight. But yet it was in some measure a painful sight to me, for I had not been able to land on this great breeding-place, of which, however, I here present a description given by our pilot Mr. GODWIN.

"The top of the main rock is a quarter of a mile wide, from north to south, but narrower in the other direction. Its elevation is estimated at about four hundred feet. It stands in lat. $47^{\circ} 52'$. The surf beats its base with great violence, unless after a long calm, and it is extremely difficult to land upon it, and still more so to ascend to the top or platform. The only point on which a boat may be landed lies on the south side, and the moment the boat strikes it must be hauled dry on the rocks. The whole surface of the upper platform is closely covered with nests, placed about two feet asunder, and in such regular order that a person may see between the lines, which run north and south, as if looking along the furrows of a deeply ploughed field. The Labrador fishermen and others who annually visit this extraordinary resort of the Gannets, for the purpose of procuring their flesh to bait

their cod-fish hooks, ascend armed with heavy short clubs, in parties of eight, ten, or more, and at once begin their work of destruction. At sight of these unwelcome intruders, the affrighted birds rise on wing with a noise like thunder, and fly off in such a hurried and confused manner as to impede each other's progress, by which thousands are forced downwards, and accumulate into a bank many feet high; the men beating and killing them with their clubs until fatigued, or satisfied with the number they have slain." Here Mr. GODWIN assured us that he had visited the Gannet Rock ten seasons in succession, for the purpose just mentioned, and added, that on one of these occasions, "six men had destroyed five hundred and forty Gannets in about an hour, after which the party rested awhile, and until most of the living birds had left their immediate neighbourhood, for all around them, beyond the distance of about a hundred yards, thousands of Gannets were yet sitting on their nests, and the air was filled with multitudes of others. The dead birds are now roughly skinned, and the flesh of the breast cut up in pieces of different sizes, which will keep good for bait about a fortnight or three weeks. So great is the destruction of these birds for the purpose mentioned, that the quantity of their flesh so procured supplies with bait upwards of forty boats, which lie fishing close to the Island of Brion each season. By the 20th of May the rock is covered with birds on their nests and eggs, and about a month afterwards the young are hatched. The earth is scratched by the birds for a few inches deep, and the edges surrounded by sea-weeds and other rubbish, to the height of eight or ten inches, tolerably well matted together. Each female Gannet lays a single egg, which is pure white, but not larger than a good-sized hen's egg. When the young are hatched, they are bluish-black, and for a fortnight or more their skin is not unlike that of the common dog-fish. They gradually become downy and white, and when five or six weeks old look like great lumps of carded wool."

I was well pleased with this plain statement of our pilot, as I had with my glass observed the regularity of the lines of nests, and seen many of the birds digging the earth with their strong bills, while hundreds of them were carrying quantities of that long sea-weed called *eel-grass*, which they seem to bring from towards the Magdalene Islands. While the Ripley lay to near the rock, thousands of the Gannets constantly flew over our heads; and although I shot at and brought several to the water, neither the reports nor the sight of their dead companions seemed to make any impression on them.

On weighing several of the Gannets brought on board, I found them to average rather more than seven pounds; but Mr. GODWIN assured me that when the young birds are almost ready to fly, they weigh eight and sometimes nine pounds. This I afterwards ascertained to be true, and I account for the difference exhibited at this period by the young birds, by the great

profusion of food with which their parents supply them, regardless in a great measure of their own wants. The pilot further told me that the stench on the summit of the rock was insupportable, covered as it is during the breeding season, and after the first visits of the fishermen, with the remains of carcasses of old and young birds, broken and rotten eggs, excrements, and multitudes of fishes. He added that the Gannets, although cowardly birds, at times stand and await the approach of a man, with open bill, and strike furious and dangerous blows. Let me now, reader, assure you that unless you had seen the sight witnessed by my party and myself that day, you could not form a correct idea of the impression it has to this moment left on my mind.

The extent of the southward migration of the Gannet, after it has reared its young, is far greater perhaps than has hitherto been supposed. I have frequently seen it on the Gulf of Mexico, in the latter part of autumn and in winter; and a few were met with, in the course of my last expedition, as far as the entrance of the Sabine river into the Gulf. Being entirely a maritime species, it never proceeds inland, unless forced by violent gales, which have produced a few such instances in Nova Scotia and the State of Maine, as well as the Floridas, where I saw one that had been found dead in the woods two days after a furious hurricane. The greater number of the birds of this species seen in these warm latitudes during winter are young of that or the preceding year. My friend JOHN BACHMAN has informed me that during one of his visits to the Sea Islands off the shores of South Carolina, on the 2nd of July, 1836, he observed a flock of Gannets of from fifty to a hundred, all of the colouring of the one in my plate, and which was a bird in its first winter plumage. They were seen during several days on and about Cole's Island, at times on the sands, at others among the rolling breakers. He also mentions having heard Mr. GILES, an acquaintance of his, who knows much about birds, say, that in the course of the preceding summer he had seen a pair of Gannets going to, and returning from, a nest in a tree! This is in accordance with the report of Captain NAPOLEON COSTE, who commanded the United States revenue cutter Campbell, placed at my disposal during my visit to Texas, and who was lieutenant as well as pilot of the Marion. He stated that he had found a breeding place on the coast of Georgia, occupied by a flock of old, and therefore White Gannets, the nests of all of which were placed upon trees. No one can be greatly surprised at these reports, who knows, as I do, that the Brown Gannet, *Sula fusca*, breeds both on trees and on dry elevated sand-bars. During winter months I have generally observed single birds at some considerable distance from the shore out at sea, sometimes indeed beyond what mariners call

soundings, but rarely young ones, they generally keeping much nearer to the shores, and procuring their food in shallower water.

The flight of the Gannet is powerful, well sustained, and at times extremely elegant. While travelling, whether in fine or foul weather, they fly low over the surface of the water, flapping their wings thirty or forty times in succession, in the manner of the Ibis and the Brown Pelican, and then sailing about an equal distance, with the wings at right angles to the body, and the neck extended forwards. But, reader, to judge of the elegance of this bird while on wing, I would advise you to gaze on it from the deck of any of our packet ships, when her commander has first communicated the joyful news that you are less than three hundred miles from the nearest shore, whether it be that of merry England or of my own beloved country. You would then see the powerful fisher, on well-spread pinions, and high over the water, glide silently along, surveying each swelling wave below, and coursing with so much ease and buoyancy as to tempt you to think that had you been furnished with equal powers of flight, you might perform a journey of eighty or ninety miles without the slightest fatigue in a single hour. But perhaps at the very moment when these thoughts have crossed your mind, as they many times have crossed mine on such occasions, they are suddenly checked by the action of the bird, which, intent on filling its empty stomach, and heedless of your fancies, plunges headlong through the air, with the speed of a meteor, and instantaneously snatches the fish which its keen sight had discovered from on high. Now perchance you may see the snow-white bird sit buoyantly for awhile on the bosom of its beloved element, either munching its prey, or swallowing it at once. Or perhaps, if disappointed in its attempt, you will see it rise by continued flappings, shaking its tail sideways the while, and snugly covering its broad webbed feet among the under coverts of that useful rudder, after which it proceeds in a straight course, until its wings being well supplied by the flowing air, it gradually ascends to its former height, and commences its search anew.

In severe windy weather, I have seen the Gannet propelling itself against the gale by sweeps of considerable extent, placing its body almost sideways or obliquely, and thus alternately, in the manner of Petrels and Guillemots; and I have thought that the bird then moved with more velocity than at any other time, except when plunging after its prey. Persons who have seen it while engaged in procuring food, must, like myself, have been surprised when they have read in books that Gannets "are never known to dive," and yet are assured that they "have been taken by a fish fastened to a board sunk to the depth of two fathoms, in which case the neck has either been found dislocated, or the bill firmly fixed in the wood." With such statements

before him, one might think that his own vision had been defective, had he not been careful to note down at once the result of his observations. And as this is a matter of habit with me, I will offer you mine, good reader, not caring one jot for what has been said to you before on the subject.

I have seen the Gannet plunge, and afterwards remain under the surface of the water for at least one minute at a time. On one occasion of this kind, I shot one just as it emerged, and which held a fish firmly in its bill, and had two others half-way down its throat. This has induced me to believe that it sometimes follows its prey in the water, and seizes several fishes in succession. At other times I have observed the Gannet plunge amidst a shoal of launces so as scarcely to enter the water, and afterwards follow them, swimming, or as it were running, on the water, with its wings extended upwards, and striking to the right and left until it was satiated. While on the Gulf of Mexico, I wounded a Gannet, which, on falling to the water, swam so fast before the boat, that we rowed about a quarter of a mile before we reached it, when it suddenly turned towards us, opened its bill, as if intent on defending itself, but was killed with the stroke of an oar by one of the sailors. When shot at without even being touched, these birds often disgorge their food in the manner of Vultures; and this they always do when wounded, if their stomach and gullet happen to be full. Sometimes, after being wounded in the wings, they will float and allow you to take them, without making any attempt to escape. Nay, my young friend, GEORGE C. SHATTUCK, M. D., of Boston, while with me at Labrador, caught one which he found walking amongst a great number of Guillemots, on a low and rocky island.

When they are on their favourite breeding rocks, and about to fly, they elevate their head, throw it backward, open the bill, and emit a loud prolonged cry, before launching themselves into the air, in doing which they waddle a few paces with their wings partially extended. After starting, their first motion is greatly inclined downwards, but they presently recover, and seem to support themselves with ease. When they are twenty or thirty yards off, you observe them shaking the tail sideways, and then hiding their feet among the under coverts of the tail. At other times they suddenly open their feet, moving them as if for the purpose of grasping some object below, in the same manner as some Hawks, but only for a few moments, when again the tail is shaken, and the feet hidden as before. They beat their wings and sail alternately, even when flying around their breeding places.

On the ground the movements of the Gannet are exceedingly awkward, and it marches with hampered steps, assisting itself with the wings, or keeping them partially open, to prevent its falling. Their walk, indeed, is

merely a hobble. When the sun shines, they are fond of opening their wings and beating them in the manner of Cormorants, shaking the head meanwhile rather violently, and emitting their usual uncouth guttural notes of *cara, karew, karow*. You may well imagine the effect of a concert performed by all the Gannets congregated for the purpose of breeding on such a rock as that in the Gulf of St. Lawrence, where, amidst the uproar produced by the repetition of these notes, you now and then distinguish the loud and continued wolfish howling-like sounds of those about to fly off.

The newly-finished nest of this bird is fully two feet high, and quite as broad externally. It is composed of seaweeds and maritime grasses, the former being at times brought from considerable distances. Thus, the Gannets breeding on the rocks in the Gulf of St. Lawrence, carry weeds from the Magdalene Islands, which are about thirty miles distant. The grasses are pulled or dug up from the surface of the breeding place itself, often in great clods consisting of roots and earth, and leaving holes not unlike the entrances to the burrows of the Puffin. The nests, like those of Cormorants, are enlarged or repaired annually. The single egg, of a rather elongated oval form, averages three inches and one-twelfth in length, by two inches in its greatest breadth, and is covered with an irregular roughish coating of white calcareous matter, which on being scraped off, leaves exposed the pale greenish-blue tint of the under layer.

The birds usually reach the rock when already paired, in files often of hundreds, and are soon seen billing in the manner of Cormorants, and copulating on the rocks, but never, like the birds just mentioned, on the water, as some have supposed. The period of their arrival at their breeding grounds appears to depend much on the latitude of the place; for, on the Bass Rock, in the Firth of Forth, which I had the pleasure of visiting in the agreeable company of my learned friend WILLIAM MACGILLIVRAY and his son, on the 19th of August, 1835, the Gannets are first seen in February, whereas in the Gulf of St. Lawrence they rarely reach the Great Rock until the middle of April or beginning of May; and at Chateau Beau in the Straits of Belle Isle, not until a fortnight or three weeks later. Like the members of most large communities, the Gannets, though so truly gregarious at this season, shew a considerable degree of animosity towards their more immediate neighbours as soon as incubation commences. A lazy bird perhaps, finding it easier to rob the nest of its friend of weeds and sods, than to convey them from some distant place, seizes some, on which the other resents the injury, and some well-directed thrusts of their strong bills are made, in open day and in full view of the assembled sitters, who rarely fail to look on with interest, and pass the news from one to another, until all are apprized of the quarrel. The time however passes on. The patient mother, to lend more

warmth to her only egg, plucks a few of the feathers from some distance beneath her breast. In sunny weather, she expands those of her upper parts, and passing her bill along their roots, destroys the vile insects that lurk there. Should a boisterous gale or a thick cold fog mar the beauty of the day, she gathers her apparel around her, and shrinks deeper into her bed; and should it rain, she places her body so as to prevent the inundation of her household. How happy, reader, must she be when now and then her keen eyes distinguish in the crowd her affectionate mate, as he returns from the chase, with loaded bill, and has already marked her among the thousand beauties all equally anxious for the arrival of their lords! Now by her side he alights as gently as is in his nature, presents her with a welcome repast, talks perhaps cheerfully to her, and again opening his broad wings departs in search of a shoal of herrings. At length, the oval chest opens, and out crawls the tender young; but lo! the little thing is black. What a strange contrast to the almost pure white of the parent! Yet the mother loves it, with all the tenderness of other mothers. She has anxiously expected its appearance, and at once she nurses it with care; but so tender is it that she prefers waiting awhile before she feeds it. The time however soon comes, and with exceeding care she provides some well macerated morsels which she drops into its open mouth; so well prepared are they that there is no instance on record of a Gannet, even of that tender age, having suffered from dyspepsia or indigestion.

The male Gannet assists in incubating, though he sits less assiduously than the female; and, on such occasions, the free bird supplies the other with food. The sight of the young Gannet just after birth might not please the eye of many, for it is then quite naked, and of a deep bluish-black, much resembling a young Cormorant. Its abdomen is extremely large, its neck thin, its head large, its eyes as yet sightless, its wings but slightly developed. When you look at it three weeks afterwards, it has grown much, and almost entirely changed its colour, for, now, with the exception of certain parts of the neck, the short thighs, and the belly, it is covered with yellowish soft and thick down. In this state it looks perhaps as uncouth as at first, but it grows so rapidly that at the end of three weeks more, you find its downy coat patched with feathers in the most picturesque manner imaginable. Looking around you, you observe that all the young are not of the same growth; for all the Gannets do not lay on the same day, and probably all the young are not equally supplied with food. At this period, the great eyrie looks as if all its parts had become common property; the nests, which were once well fashioned are trampled down; the young birds stand everywhere or anywhere; lazy-looking creatures they are, and with an appearance of nonchalance which I have never observed in any other species of bird, and

which would lead you to think that they care as little about the present as the future. Now the old birds are freed of part of their cares, they drop such fish as they have obtained by the side of their young, and, like Cormorants, Pelicans, or Herons, seldom bring a supply oftener than once a-day. Strange to say, the young birds at this period do not appear to pay the least attention to the old ones, which occasionally alight near them, and drop fish for them to feed upon.

Gannets do not feed, as some have supposed, and as many have believed, on herring only; for I have found in their stomachs codlings eight inches in length, as well as very large American mackerels, which, by the way, are quite different from those so abundantly met with on the coasts of Europe.

The young never leave the spot on which they have been reared until they are well able to fly, when they separate from the old birds, and do not rejoin them until at least a year after. Although I have in a few instances found individuals yet patched with dark grey spots, and with most of their primary quills still black, I am confident that it is not until the end of two years that they acquire their full plumage. I have seen some with one wing almost pure black, and the tail of that colour also; others with the tail only black; and several with pure black feathers interspersed among the general white plumage.

I know of no other bird that has so few formidable enemies as the Gannet. Not one of the species of *Lestris* with which I am acquainted ever attempts to molest it; and, although I have seen the Frigate Pelican in quest of food within a short distance of it, I never saw it offer injury. The insular rocks on which it breeds are of course inaccessible to quadrupeds. The only animals, so far as I know, that feed on the eggs or young, are the *Larus marinus* and *Larus glaucus*. It is said that the Skua, *Lestris Catarractes*, sometimes pursues the Gannets, but that species does not exist in North America; and I am inclined to doubt the truth of this statement, for I have never seen a *Lestris* of any kind attack a bird equal to itself in size and strength.

Soon after the young Gannets are able to fly, all the birds of the species leave the breeding place, and absent themselves until the following season. While at Newfoundland, I was told that the English and French fishermen who inhabit that country salt young Gannets for winter provision, as is done in Scotland; but I saw none there. In my estimation, the flesh of this bird is so bad that, as long as any other can be procured, it ought to be rejected.

It is a curious fact, that the Gannets often procure mackerels or herrings four or five weeks before the fishermen fall in with them on our coast; but this is easily explained by their extensive wanderings. Although this bird is easily kept in captivity, it is far from being a pleasant pet. Its ordure is

abundant, disagreeable to the eye as well as the nose; its gait is awkward; and even its pale owl-like eyes glare on you with an unpleasant expression. Add to this, the expense of its food, and I can easily conceive that you will not give it a place in your aviary, unless for the mere amusement of seeing it catch the food thrown to it, which it does like a dog.

The feathers of the lower parts of the Gannet differ from those of most other birds, in being extremely convex externally, which gives the bird the appearance of being covered beneath with light shell-work, exceedingly difficult to be represented in a drawing.

SULA BASSANA, Bonap. Syn., p. 403.

GANNET, *Sula bassana*, Nutt. Man., vol. ii. p. 495.

COMMON GANNET, *Sula bassana*, Aud. Orn. Biog., vol. iv. p. 222.

Adult, $40\frac{1}{2}$, 75. Young fledged, 38, 72.

Ranges southward off the coast at all seasons as far as the Gulf of Mexico. Breeds on rocks on the Gulf of St. Lawrence, and off the coast of Labrador. Abundant. Migratory.

Adult Male.

Bill longer than the head, opening beyond the eyes, straight, elongated-conical, moderately compressed. Upper mandible with the dorsal line straight and declinate, at the end convex and a little decurved; ridge very broad, convex, with a slight median carina, and separated on each side, from the sides, which are nearly perpendicular, slightly convex, and have an additional narrow jointed piece below the eye; edges sharp, direct, irregularly serrate, with numerous slender cuts directed backwards; tip compressed, a little decurved, rather acute. No external nostrils. Lower mandible with the angle very long and narrow, the dorsal line straight, ascending, the sides erect, convex, the edges sharp and serrated, the tip compressed and sharp.

Head large; neck of moderate length and very thick, body of moderate bulk, rather elongated; wings long. Feet short, strong, placed rather far behind; tibiae concealed; tarsus very short, rounded before, sharp behind, at its upper part anteriorly with rather large roundish-flat scales, in the rest of its extent with very small oblong tubercles; anteriorly there are three lines of small transversely oblong scutella, which run down the toes. The latter are long and slender, all united by membranes, which are reticularly granulated, and have their margins straight; first toe rather small, directed inwards and forwards, middle toe longest, the outer almost equal. Claws of moderate size, slightly arched, those of the first and middle toes depressed, the latter with its inner edge thin and pectinated.

Plumage generally close, rather compact, the feathers small and rounded; those on the head and neck blended and slightly glossed. A bare space

between the bill and the eye, surrounding the latter, and extending an inch behind the angle of the mouth. The gular membrane also bare for a small breadth, extending two inches beyond the base of the mandible. About a quarter of an inch of the tibia bare. Wings very long, narrow, acute; primaries strong, narrow, tapering rapidly to a rounded point; first longest, second about a quarter of an inch shorter, the rest rapidly graduated; secondaries short, rather broad, rounded, with a minute acumen. Tail rather long, cuneate, of twelve narrow tapering feathers.

Bill pale bluish-grey, tinged with green towards the base; the lines on the upper mandible blackish-blue; the bare space about the eye, and that on the throat, blackish-blue. Iris white. Tarsi, toes, and webs, brownish-black, the bands of narrow scutella on the tarsus and toes light greenish-blue; claws greyish-white. The general colour of the plumage is white; the upper part of the head and the hind neck of a fine buff-colour. Primary quills brownish-black, their shafts white toward the base.

Length to end of tail $40\frac{1}{2}$ inches, to end of wings $38\frac{1}{4}$, to end of claws 41; extent of wings 75; wing from flexure $20\frac{3}{4}$; tail 10; bill along the ridge 4, along the edge of lower mandible 6; tarsus $2\frac{2}{12}$; first toe and claw $1\frac{1}{4}$; middle toe $3\frac{8}{12}$, its claw $\frac{7}{12}$; outer toe $3\frac{8\frac{1}{2}}{12}$; its claw $\frac{4}{12}$. Weight 7 lbs.

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

Young fully fledged.

Bill light greyish-brown; the bare space around the eye pale greyish-blue. Iris green. Feet dusky, the narrow bands of scutella pale greyish-blue; claws greyish-white. The head, neck, and upper parts are chocolate-brown, each feather with a terminal narrow triangular white spot; the lower parts greyish-white, spotted with greyish-brown; each feather having a broad terminal margin of that colour. The quills and tail-feathers are brownish-black. An individual shot in October measured as follows:—

Length to end of tail 38 inches, to end of claws $32\frac{1}{2}$; extent of wings 72. Weight 3 lbs. 4 oz. This individual, however, was very poor.

Three individuals shot in the neighbourhood of Boston, Massachusetts, presented the following dimensions, which are here given as indicative of the difference of size frequently observed:—

Length to end of tail,	$38\frac{3}{4}$	$38\frac{3}{4}$	37
. wings,	$37\frac{1}{2}$	$37\frac{1}{2}$	35
. claws,	$34\frac{1}{4}$	$34\frac{1}{2}$	33
Extent of wings,	$73\frac{1}{2}$	72	$68\frac{1}{2}$
Wing from flexure,	$19\frac{1}{2}$	$17\frac{1}{2}$	$19\frac{1}{2}$

An adult Male killed near Boston. The cellular tissue of the back exhibits vacuities of very large size, intervening between the skin and the muscles: one, at the lower part of the neck behind, being 5 inches in length;

another $5\frac{1}{2}$ inches long, extending from the furcula down the humerus; and behind the wings four others, extending to the last rib. Branches from these pass between the muscles, which present the appearance of having been as it were dissected. A cell of enormous size covers the side of the abdomen, and another pair run down the middle of it, separated by a partition in the median line. That part of the cellular tissue which adheres to the bases of the feathers is also remarkably loose; and, close to each of them, is a roundish aperture of large size, communicating with the great cavities mentioned above. Between the pectoralis major and the subjacent muscles is a large interspace formed by a great cell. The internal thoracic and abdominal cells are also very large.

On the roof of the mouth are five sharp ridges. The nasal aperture is 1 inch and 5 twelfths long, linear, with a soft longitudinal flap on each side. The tongue is extremely small, being only 7 twelfths long, 1 twelfth broad, blunt at the extremity, and with two papillæ at the base. The bare skin between the crura of the mandibles is of the same structure as that of the Pelicans and Cormorants, but of small extent, its posterior acute extremity not extending farther than that at the base of the bill. The aperture of the glottis is $7\frac{1}{2}$ twelfths long. The thyroid bone has an anterior curved prolongation, which projects forwards, and from the extremity of which comes the elastic ligament by which it is connected with the hyoid bone. The œsophagus, *a, b*, is 15 inches long, measured to the commencement of the proventriculus, extremely dilated, its diameter $2\frac{1}{2}$ inches at the top, contracting to 2 inches as it enters the thorax, its narrowest part 1 inch 4 twelfths; its transverse muscular fibres moderately strong. The proventriculus, *c, d*, is excessively large, $3\frac{1}{2}$ inches long, its greatest diameter $2\frac{1}{4}$ inches. The glandules are cylindrical, 3 twelfths long, forming a very broad belt, separated however at its narrowest part by a longitudinal interval of 5 twelfths of an inch, and having three partial divisions on its lower edge. The greatest length of the proventriculus, or breadth of the belt of glandules, is $2\frac{1}{2}$ inches. The mucous coat of the œsophagus is smooth, but thrown into longitudinal plicæ when contracted; that of the proventriculus is continuous, and of the same nature, being marked with extremely minute reticulated lines, of which the more prominent have a longitudinal direction. The stomach, properly so called, *d e*, is extremely small, being only 1 inch 9 twelfths long, and about the same breadth. Its inner coat is similar to that of the œsophagus and proventriculus, being destitute of epithelium; several large mucous crypts are scattered over its surface. The pylorus is small, having a diameter of nearly 3 twelfths, and a marginal flap or valve on one side. The intestine, *f, g, h*, is of moderate length, measuring 53 inches. The duodenum *at first passes upwards* in the direction of the liver for 2

inches, *f g*, is then recurved for 3 inches, *g, h*, ascends for 4 inches, *h, i*, and receives the biliary ducts, then passes toward the spine and forms a curvature. The average diameter of the intestine is 5 twelfths at the upper part, and it gradually contracts to 3 twelfths. The rectum, *k*, measured to the anus, is $5\frac{1}{4}$ inches. It gradually enlarges from 4 to $6\frac{1}{2}$ twelfths. The cloaca, *m*, is globular, 9 twelfths long, 8 twelfths broad. The cœca are 3 twelfths long, $1\frac{1}{2}$ twelfths broad.

The lobes of the liver are extremely unequal, as is always the case when the stomach or the proventriculus is excessively large, the right lobe being $2\frac{3}{4}$ inches long, the left 1 inch and 8 twelfths. The gall-bladder, *n*, is very large, of an oblong form, rounded at both ends, 1 inch and 8 twelfths long.

The trachea is 12 inches long, moderately ossified, round, its diameter at the top 7 twelfths, gradually narrowing to 4 twelfths; the rings

124, the lower 4 united. The bronchi are large, their diameter greater than that of the lower part of the trachea; of 25 cartilaginous half-rings. The lateral or contractor muscles of the trachea are of moderate strength; the sterno-tracheals strong; a pair of inferior laryngeal muscles attached to the glandular-looking, yellowish-white bodies inserted upon the membrane between the first and second rings of the bronchi.

The olfactory nerve comes off from the extreme anterior point of the cerebrum, enters a canal in the spongy tissue of the bone, and runs in it close to the septum between the eyes for 10 twelfths of an inch, with a slight curve. It then enters the nasal cavity, which is of an irregular triangular form, $1\frac{1}{2}$ inches long at the external or palatal aperture, 10 twelfths in height. The supramaxillary branch of the fifth pair runs along the upper edge of the orbit, and by a canal in the spongy tissue of the bones, enters the great cavity of the upper mandible, keeping nearer its lower surface, and there branching. This cavity appears to have no communication with the nasal; nor has the latter any passage towards the obliterated external nostrils.

The lachrymal duct passes obliquely inwards from the anterior corner of the eye, and enters the nasal cavity by an aperture $\frac{1}{2}$ twelfth in diameter, near its anterior margin.

In the cloaca was found a solid calculus, half an inch in diameter, of an irregular form, white within, externally pale yellowish-brown, and marked with grooves impressed by the action of the sphincter ani.

The digestive and respiratory organs of the American Gannet are thus precisely similar to those of the European. In external form, proportions, and colours, there are no appreciable differences. The young in all stages are similar. The flight, voice, general habits, and all other circumstances, are the same. What, then, shall we say to those who have pretended that the American bird differs from the European? Merely this, compare the two, outside and inside, shew us differences, and then we shall judge if they be sufficient to indicate different species; but until you have done this, do not imagine that a mere "*Sula Americana* Nob.," is enough to satisfy the world on this or any similar point.

THE BOOBY GANNET.

+*SULA FUSCA*, Linn.

PLATE CCCCXXVI.—MALE.

As the Marion was nearing the curious islets of the Tortugas, one of the birds that more particularly attracted my notice was of this species. The nearer we approached the land, the more numerous did they become, and I felt delighted with the hope that ere many days should elapse, I should have an opportunity of studying their habits. As night drew her sombre curtain over the face of nature, some of these birds alighted on the top-yard of our bark, and I observed ever afterwards that they manifested a propensity to roost at as great a height as possible above the surrounding objects, making choice of the tops of bushes, or even upright poles, and disputing with each other the privilege. The first that was shot at, was approached with considerable difficulty: it had alighted on the prong of a tree which had floated and been fastened to the bottom of a rocky shallow at some distance from

Common Loon.

7. Adult male, young

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

Published & sold by J. T. Bowen, Philad.

Audubon, John James. 1844. "Common Gannet, *Sula bassana*, Linn. [Pl. 425]."
The birds of America : from drawings made in the United States and their territories 7, 44–57. <https://doi.org/10.5962/p.319537>.

View This Item Online: <https://www.biodiversitylibrary.org/item/124981>

DOI: <https://doi.org/10.5962/p.319537>

Permalink: <https://www.biodiversitylibrary.org/partpdf/319537>

Holding Institution

Smithsonian Libraries

Sponsored by

Biodiversity Heritage Library

Copyright & Reuse

Copyright Status: NOT_IN_COPYRIGHT

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.