mandible, and the edges of both mandibles at the base of the same colour. Edges of eyelids red, iris yellow. Feet flesh-coloured, claws yellowish. The head, neck, lower parts, rump, and tail, are pure white; the back and wings light greyish-blue; the edges of the wing, and a large portion toward the end of all the quills, white.

Length to end of tail 30 inches; bill along the ridge $2\frac{9}{12}$, along the edge $3\frac{1}{2}$; wing from flexure $19\frac{1}{2}$; tail $8\frac{3}{4}$; tarsus $2\frac{11}{12}$; hind toe $\frac{2\frac{1}{2}}{12}$, its claw $\frac{3}{12}$; second toe $\frac{10}{12}$, its claw $\frac{5\frac{1}{2}}{12}$; middle toe $2\frac{7}{12}$, its claw $\frac{6\frac{1}{2}}{12}$; outer toe $2\frac{1}{4}$, its claw $\frac{4}{12}$.

The Female, which is somewhat less, resembles the male.

Young in full plumage.

The bill is yellow to a little beyond the nostrils, black at the end; the feet flesh-coloured, the claws dusky. The iris brown. The general colour of the plumage is very pale yellowish-brown; the feathers of the back with a large dusky spot towards the end; the quills and tail-feathers barred with the same.

THE GREAT BLACK-BACKED GULL.

+*LARUS MARINUS*, Linn.

PLATE CCCCL.—MALE.

High in the thin keen air, far above the rugged crags of the desolate shores of Labrador, proudly sails the tyrant Gull, floating along on almost motionless wing, like an Eagle in his calm and majestic flight. On widely extended pinions, he moves in large circles, constantly eyeing the objects below. Harsh and loud are his cries, and with no pleasant feeling do they come on the winged multitudes below. Now onward he sweeps, passes over each rocky bay, visits the little islands, and shoots off towards the mossy heaths, attracted perhaps by the notes of the Grouse or some other birds. As he flies over each estuary, lake, or pool, the breeding birds prepare to defend their unfledged broods, or ensure their escape from the powerful beak of their remorseless spoiler. Even the shoals of the finny tribes sink deeper into the waters as he approaches; the young birds become silent in their

WELL

Great Black-backed Gull

Male

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

Lith. Printed & Col^d by J. T. Bowen, Philad^a

nests or seek for safety in the clefts of the rocks; the Guillemots and Gannets dread to look up, and the other Gulls, unable to cope with the destroyer, give way as he advances. Far off among the rolling billows, he spies the carcass of some monster of the deep, and, on steady wing, glides off towards it. Alighting on the huge whale, he throws upwards his head, opens his bill, and, louder and fiercer than ever, sends his cries through the air. Leisurely he walks over the putrid mass, and now, assured that all is safe, he tears, tugs, and swallows piece after piece, until he is crammed to the throat, when he lays himself down surfeited and exhausted, to rest for awhile in the feeble sheen of the northern sun. Great, however, are the powers of his stomach, and ere long the half-putrid food which, vulture-like, he has devoured, is digested. Like all gluttons, he loves variety, and away he flies to some well-known isle, where thousands of young birds or eggs are to be found. There, without remorse, he breaks the shells, swallows their contents, and begins leisurely to devour the helpless young. Neither the cries of the parents, nor all their attempts to drive the plunderer away, can induce him to desist until he has again satisfied his ever-craving appetite. But although tyrannical, the Great Gull is a coward, and meanly does he sneak off when he sees the Skua fly up, which, smaller as it is, yet evinces a thoughtless intrepidity, that strikes the ravenous and merciless bird with terror.

If we compare this species with some other of its tribe, and mark its great size, its powerful flight, and its robust constitution, we cannot but wonder to find its range so limited during the breeding season. Few individuals are to be found northward of the entrance into Baffin's Bay, and rarely are they met with beyond this, as no mention is made of them by Dr. RICHARDSON in the *Fauna Boreali-Americana*. Along our coast, none breed farther south than the eastern extremity of Maine. The western shores of Labrador, along an extent of about three hundred miles, afford the stations to which this species resorts during spring and summer; there it is abundant, and there it was that I studied its habits.

The farthest limits of the winter migrations of the young, so far as I have observed, are the middle portions of the eastern coast of the Floridas. While at St. Augustine, in the winter of 1831, I saw several pairs keeping company with the young Brown Pelican, more as a matter of interest than of friendship, as they frequently chased them as if to force them to disgorge a portion of their earnings, acting much in the same manner as the Lestris does toward the smaller Gulls, but without any effect. They were extremely shy, alighted only on the outer edges of the outer sand-bars, and could not be approached, as they regularly walked off before my party the moment any of us moved towards them, until reaching the last projecting point, they flew off, and never stopped while in sight. At what period they left that

coast I am unable to say. Some are seen scattered along our sea-shores, from the Floridas to the Middle States, there being but few old birds among them; but the species does not become abundant until beyond the eastern extremities of the Connecticut and Long Island, when their number greatly increases the farther you proceed. On the whole of that extensive range, these birds are very shy and wary, and those which are procured are merely "chance shots." They seldom advance far up the bays, unless forced to do so by severe weather or heavy gales; and although I have seen this bird on our great lakes, I do not remember having ever observed an individual on any of our eastern rivers, at a distance from the sea, whereas the *Larus argentatus* is frequently found in such places.

Towards the commencement of summer, these wandering birds are seen abandoning the waters of the ocean to tarry for awhile on the wild shores of Labrador, dreary and desolate to man, but to them delightful as affording all that they can desire. One by one they arrive, the older individuals first. As they view from afar the land of their birth, that moment they emit their loud cries, with all the joy a traveller feels when approaching his loved home. The males sooner or later fall in with the females of their choice, and together they proceed to some secluded sand-bar, where they fill the air with their furious laughs until the rocks echo again. Should the student of nature happen to be a distant spectator of these meetings, he too must have much enjoyment. Each male bows, moves around his mate, and no doubt discloses to her the ardour of his love. Matters are managed to the satisfaction of all parties, yet day after day for awhile, at the retreat of the waters, they meet as if by mutual agreement. Now you see them dressing their plumage, now partially expanding their wings to the sun; some lay themselves comfortably down on the sand, while others, supported by one foot, stand side by side. The waters again advance, and the Gulls all move off in search of food. At length the time has arrived; small parties of a few pairs fly towards the desert isles. Some remain in the nearest to prepare their nests, the rest proceed, until each pair has found a suitable retreat, and before a fortnight has elapsed, incubation has commenced.

The nest of this species is usually placed on the bare rock of some low island, sometimes beneath a projecting shelf, sometimes in a wide fissure. In Labrador it is formed of moss and sea-weeds carefully arranged, and has a diameter of about two feet, being raised on the edges to the height of five or six inches, but seldom more than two inches thick in the centre, where feathers, dry grass, and other materials are added. The eggs are three, and in no instance have I found more. They are two inches and seven-eighths in length, by two inches and one-eighth in breadth, broadly ovate, rough but not granulated, of a pale earthy greenish-grey colour, irregularly blotched

and spotted with brownish-black, dark umber, and dull purple. Like those of most other Gulls, they afford good eating. This species lays from the middle of May to that of June, and raises only one brood in the season. The birds never leave their eggs for any length of time, until the young make their appearance. Both sexes incubate, the sitting bird being supplied with food by the other. During the first week, the young are fed by having their supplies disgorged into their bill, but when they have attained some size, the food is dropped beside or before them. When they are approached by man, they walk with considerable speed towards some hiding place, or to the nearest projecting ledge, beneath which they squat. When five or six weeks old, they take to the water, to ensure their escape, and swim with great buoyancy. If caught, they cry in the manner of their parents. On the 18th of June, several small ones were procured and placed on the deck of the Ripley, where they walked with ease and picked up the food thrown to them. As soon as one was about to swallow its portion, another would run up, seize it, tug at it, and if stronger, carry it off and devour it. On the 23d of that month, two individuals, several weeks old, and partly fledged, were also brought on board. Their notes, although feeble, perfectly resembled those of their parents. They ate greedily of every thing that was offered to them. When fatigued they sat with their tarsi placed on the ground and extended forward, in the manner of all the Herons, which gave them a very ludicrous appearance. Ere a month had elapsed, they appeared to have formed a complete acquaintance with the cook and several of the sailors, had become quite fat, and conducted themselves much like Vultures, for if a dead Duck, or even a Gull of their own species, were thrown to them, they would tear it in pieces, drink the blood, and swallow the flesh in large morsels, each trying to rob the others of what they had torn from the carcass. They never drank water, but not unfrequently washed the blood and filth from their bills, by immersing them and then shaking the head violently. These birds were fed until they were nearly able to fly. Now and then, the sailors would throw them overboard while we were in harbour. This seemed to gratify the birds as well as the sailors, for they would swim about, wash themselves, and dress their plumage, after which they would make for the sides, and would be taken on board. During a violent gale, one night, while we were at anchor in the harbour of Bras d'Or, our bark rolled heavily, and one of our pets went over the side and swam to the shore, where, after considerable search next day, it was found shivering by the lee of a rock. On being brought to its brothers, it was pleasant to see their mutual congratulations, which were extremely animated. Before we left the coast, they would sometimes fly of their own accord into the water to bathe, but could not return to the deck without assistance, although they

endeavoured to do so. I had become much attached to them, and now and then thought they looked highly interesting, as they lay panting on their sides on the deck, although the thermometer did not rise above 55°. Their enmity to my son's pointer was quite remarkable, and as that animal was of a gentle and kindly disposition, they would tease him, bite him, and drive him fairly from the deck into the cabin. A few days after leaving St. George's Bay in Newfoundland, we were assailed by a violent gale, and obliged to lie-to. Next day one of the Gulls was washed overboard. It tried to reach the vessel again, but in vain; the gale continued; the sailors told me the bird was swimming towards the shore, which was not so far off as we could have wished, and which it probably reached in safety. The other was given to my friend Lieutenant GREEN of the United States army, at Eastport in Maine. In one of his letters to me the following winter, he said that the young *Larus marinus* was quite a pet in the garrison, and doing very well, but that no perceptible change had taken place in its plumage.

On referring to my journal again, I find that while we were at anchor at the head of St. George's Bay, the sailors caught many codlings, of which each of our young Gulls swallowed daily two, measuring from eight to ten inches in length. It was curious to see them after such a meal: the form of the fish could be traced along the neck, which for awhile they were obliged to keep stretched out; they gaped and were evidently suffering; yet they would not throw up the fish. About the time the young of this species are nearly able to fly, they are killed in considerable numbers on their breeding-grounds, skinned and salted for the settlers and resident fishermen of Labrador and Newfoundland, at which latter place I saw piles of them. When they are able to shift for themselves, their parents completely abandon them, and old and young go separately in search of food.

The flight of the Great Black-backed Gull is firm, steady, at times elegant, rather swift, and long protracted. While travelling, it usually flies at the height of fifty or sixty yards, and proceeds in a direct course, with easy, regulated flappings. Should the weather prove tempestuous, this Gull, like most others, skims over the surface of the waters or the land within a few yards or even feet, meeting the gale, but not yielding to it, and forcing its way against the strongest wind. In calm weather and sunshine, at all seasons of the year, it is fond of soaring to a great height, where it flies about leisurely and with considerable elegance for half an hour or so, in the manner of Eagles, Vultures, and Ravens. Now and then, while pursuing a bird of its own species, or trying to escape from an enemy, it passes through the air with rapid boundings, which, however, do not continue long, and as soon as they are over it rises and slowly sails in circles. When man encroaches

on its domains, it keeps over him at a safe distance, not sailing so much as moving to either side with continued flappings. To secure the fishes on which it more usually preys, it sweeps downwards with velocity, and as it glides over the spot, picks up its prey with its bill. If the fish be small, the Gull swallows it on wing, but if large, it either alights on the water, or flies to the nearest shore to devour it.

Although a comparatively silent bird for three-fourths of the year, the Great Black-backed Gull becomes very noisy at the approach of the breeding season, and continues so until the young are well fledged, after which it resumes its silence. Its common notes, when it is interrupted or surprised, sound like *cack, cack, cack*. While courting, they are softer and more lengthened, and resemble the syllables *cawah*, which are often repeated as it sails in circles or otherwise, within view of its mate or its place of abode.

This species walks well, moving firmly and with an air of importance. On the water it swims lightly but slowly, and may soon be overtaken by a boat. It has no power of diving, although at times, when searching for food along the shores, it will enter the water on seeing a crab or a lobster, to seize it, in which it at times succeeds. I saw one at Labrador plunge after a large crab in about two feet of water, when, after a tug, it hauled it ashore, where it devoured it in my sight. I watched its movements with a glass, and could easily observe how it tore the crab to pieces, swallowed its body, leaving the shell and the claws, after which it flew off to its young and disgorged before them.

It is extremely voracious, and devours all sorts of food excepting vegetables, even the most putrid carrion, but prefers fresh fish, young birds, or small quadrupeds, whenever they can be procured. It sucks the eggs of every bird it can find, thus destroying great numbers of them, as well as the parents, if weak or helpless. I have frequently seen these Gulls attack a flock of young Ducks while swimming beside their mother, when the latter, if small, would have to take to wing, and the former would all dive, but were often caught on rising to the surface, unless they happened to be among rushes. The Eider Duck is the only one of the tribe that risks her life, on such occasions, to save that of her young. She will frequently rise from the water, as her brood disappear beneath, and keep the Gull at bay, or harass it until her little ones are safe under some shelving rocks, when she flies off in another direction, leaving the enemy to digest his disappointment. But while the poor Duck is sitting on her eggs in any open situation, the marauder assails her, and forces her off, when he sucks the eggs in her very sight. Young Grouse are also the prey of this Gull, which chases them over the moss-covered rocks, and devours them before their parents. It follows the shoals of fishes for hours at a time, and usually with great success.

On the coast of Labrador, I frequently saw these birds seize flounders on the edges of the shallows; they often attempted to swallow them whole, but, finding this impracticable, removed to some rock, beat them, and tore them to pieces. They appear to digest feathers, bones, and other hard substances with ease, seldom disgorging their food, unless for the purpose of feeding their young or mates, or when wounded and approached by man, or when pursued by some bird of greater power. While at Boston in Massachusetts, one cold winter morning, I saw one of these Gulls take up an eel, about fifteen or eighteen inches in length, from a mud bank. The Gull rose with difficulty, and after some trouble managed to gulp the head of the fish, and flew towards the shore with it, when a White-headed Eagle made its appearance, and soon overtook the Gull, which reluctantly gave up the eel, on which the Eagle glided towards it, and, seizing it with its talons, before it reached the water, carried it off.

This Gull is excessively shy and vigilant, so that even at Labrador we found it difficult to procure it, nor did we succeed in obtaining more than about a dozen old birds, and that only by stratagem. They watched our movements with so much care as never to fly past a rock behind which one of the party might be likely to lie concealed. None were shot near the nests when they were sitting on their eggs, and only one female attempted to rescue her young, and was shot as she accidentally flew within distance. The time to surprise them was during violent gales, for then they flew close to the tops of the highest rocks, where we took care to conceal ourselves for the purpose. When we approached the rocky islets on which they bred, they left the place as soon as they became aware of our intentions, cackled and barked loudly, and when we returned, followed us at a distance more than a mile.

They begin to moult early in July. In the beginning of August the young were seen searching for food by themselves, and even far apart. By the 12th of that month they had all left Labrador. We saw them afterwards along the coast of Newfoundland, and while crossing the Gulf of St. Lawrence, and found them over the bays of Nova Scotia, as we proceeded southward. When old, their flesh is tough and unfit for food. Their feathers are elastic, and good for pillows and such purposes, but can rarely be procured in sufficient quantity.

The most remarkable circumstance relative to these birds is, that they either associate with another species, giving rise to a hybrid brood, or that when very old they lose the dark colour of the back, which is then of the same tint as that of the *Larus argentatus*, or even lighter. This curious fact was also remarked by the young gentlemen who accompanied me to Labrador; and although it is impossible for me to clear up the doubts that

may be naturally entertained on this subject, whichever of the two suppositions is adopted, the fact may yet be established and accounted for by persons who may have better opportunities of watching them and studying their habits. No individuals of *Larus argentatus* were, to my knowledge, seen on that coast during the three months which I passed there, and the fishermen told us that the "saddle-backs were the only large Gulls that ever breed there."

This bird must be of extraordinary longevity, as I have seen one that was kept in a state of captivity more than thirty years. The following very interesting account of the habits of a partially domesticated individual I owe to my esteemed and learned friend Dr. NEILL of Edinburgh.

"In the course of the summer of 1818, a "big scorie" was brought to me by a Newhaven fisher-boy, who mentioned that it had been picked up at sea, about the mouth of the Frith of Forth. The bird was not then fully fledged: it was quite uninjured: it quickly learned to feed on potatoes and kitchen refuse, along with some Ducks; and it soon became more familiar than they, often peeping in at the kitchen window in hopes of getting a bit of fat meat, which it relished highly. It used to follow my servant PEGGY OLIVER about the doors, expanding its wings and vociferating for food. After two moults I was agreeably surprised to find it assuming the dark plumage of the back, and the shape and colour of the bill of the *Larus marinus*, or Great Black-backed Gull; for I had hitherto regarded it as merely a large specimen of the Lesser Black-backed (*L. fuscus*), a pair of which I then possessed, but which had never allowed the new comer to associate with them. The bird being perfectly tame, we did not take the precaution of keeping the quills of one wing cut short, so as to prevent flight; indeed, as it was often praised as a remarkably large and noble looking Sea-maw, we did not like to disfigure it. In the winter of 1821-2, it got a companion in a cock-heron, which had been wounded in Coldinghame Muir, brought to Edinburgh alive, and kept for some weeks in a cellar in the old college, and then presented to me by the late Mr. JOHN WILSON, the janitor,—a person remarkably distinguished for his attachment to natural history pursuits. This Heron we succeeded in taming completely, and it still (1835) remains with me, having the whole garden to range in, the trees to roost upon, and access to the loch at pleasure, the loch being the boundary of my garden. Some time in the spring of 1822, the large Gull was missing; and we ascertained (in some way that has now escaped my memory) that it had not been stolen, nor killed, as we at first supposed, but had taken flight, passing northwards over the village, and had probably therefore gone to sea. Of course I gave up all expectation of ever hearing more of it. It was not without surprise, therefore, that on going home one day in the end of October of that year, I

heard my servant calling out with great exultation, "Sir, Big Gull is come back!" I accordingly found him walking about in his old haunts in the garden, in company with, and recognising (as I am firmly persuaded) his old friend the Heron. He disappeared in the evening, and returned in the morning, for several days; when PEGGY OLIVER thought it best to secure him. He evidently did not like confinement, and it was concerted that he should be allowed his liberty, although he ran much risk of being shot on the mill-pond by youthful sportsmen from Edinburgh. After this temporary captivity, he was more cautious and shy than formerly; but still he made almost daily visits to the garden, and picked up herrings or other food laid down for him. In the beginning of March 1823 his visits ceased; and we saw no more of him till late in the autumn of that year. These winter visits to Canonmills, and summer excursions to the unknown breeding-place, were continued for years with great uniformity: only I remarked that after the Gull lost his protectress, who died in 1826,* he became more distant in his manners. In my note-book, under date of 26th October, 1829, I find this entry: 'Old PEGGY's Great Black-backed Gull arrived at the pond this morning, the seventh (or eighth) winter he has regularly returned. He had a scorie with him, which was soon shot on the loch, by some cockney sportsman.' The young bird, doubtless one of his offspring, had its wing shattered, and continued alive in the middle of the pond, occasionally screaming piteously, for two or three days, till relieved by death. The old Gull immediately abandoned the place for that winter, as if reproaching us for cruelty. By next autumn, however, he seemed to have forgotten the injury; for, according to my record, '30th October, 1830. The Great Black-backed Gull once more arrived at Canonmills garden.' The periods of arrival, residence, and departure were nearly similar in the following year. But in 1832, not only October, but the months of November and December passed away without Gull's making his appearance, and I of course despaired of again seeing him. He did, however, at length arrive. The following is the entry in my common-place book: 'Sunday, 6th January, 1833. This day the Great Black-back returned to the mill-pond, for (I think) the eleventh season. He used to re-appear in October in former years, and I concluded him dead or shot. He recognised my voice, and hovered over my head.' He disappeared early in March as usual, and reappeared at

* "PEGGY OLIVER was remarkable for the zeal and taste she displayed in the domesticating of uncommon animals, as well as in the culture of plants: her expertness in the latter department is noticed and praised by Mr. LOUDON in his *Gardener's Magazine*. Her funeral was attended by some of the most distinguished naturalists here, and, among others, by your friend Dr. MACCULLOCH of Pictou, who happened to be in Edinburgh at the time, and whose friendship I have also the happiness to enjoy."

Canonmills on 23d December, 1833, being a fortnight earlier than the date of his arrival in the preceding season, but six weeks later than the original period of reappearance. He left in the beginning of March as usual, and I find from my notes that he 'reappeared on 30th December, 1834, for the season, first hovering around and then alighting on the pond as in former years.' The latest entry is, '11th March, 1835. The Black-backed Gull was here yesterday, but has not been seen to-day; nor do I expect to see him till November.'

"This Gull has often attracted the attention of persons passing the village of Canonmills, by reason of its sweeping along so low or near the ground, and on account of the wide expanse of wing which it thus displays. It is well known to the boys of the village as "NEILL'S Gull," and has, I am aware, owed its safety more than once to their interference, in informing passing sportsmen of its history. When it first arrives in the autumn, it is in the regular habit of making many circular sweeps around the pond and garden, at a considerable elevation, as if reconnoitring; it then gradually lowers its flight, and gently alights about the centre of the pond. Upon the gardener's mounting the garden-wall with a fish in his hand, the Gull moves towards the overhanging spray of some large willow-trees, so as to catch what may be thrown to him, before it sinks in the water. There can be no doubt whatever of the identity of the bird. Indeed, he unequivocally shews that he recognises my voice when I call aloud 'Gull, Gull;' for whether he be on wing or afloat, he immediately approaches me.

"A few pairs of the Great Black-backed Gull breed at the Bass Rock yearly, and it seems highly probable that my specimen had originally been hatched there. If I may be allowed a conjecture, I would suppose that, after attaining maturity, he for some years resorted to the same spot for the purpose of breeding; but that of late years, having lost his mate or encountered some other disaster, he has extended his migration for that purpose to some very distant locality, which has rendered his return to winter quarters six weeks later than formerly."

LARUS MARINUS, Linn. Syst. Nat., vol. i. p. 225.

BLACK-BACKED GULL or COBB, Nutt. Man., vol. ii. p. 308.

GREAT BLACKED-BILLED GULL, *Larus marinus*, Aud. Orn. Biog., vol. iii. p. 305; vol. v. p. 636.

Male, $29\frac{1}{2}$, 67.

Not uncommon during winter as far south as Florida, the young especially. Common from New York to Labrador, where it breeds. Lake Erie, Ontario, the St. Lawrence, Ohio, and Mississippi rivers. Columbia river.

Adult Male in summer.

Bill shorter than the head, robust, compressed, higher near the end than at the base. Upper mandible with the dorsal line nearly straight at the base, declinate and arched towards the end, the ridge convex, the sides slightly convex, the edges sharp, inflected, arcuate-declinate towards the end, the tip rather obtuse. Nasal groove rather long and narrow; nostril in its fore part, lateral, longitudinal, linear, wider anteriorly, pervious. Lower mandible with the angle long and narrow, the outline of the crura rather concave, as is that of the remaining part of the mandible, a prominent angle being formed at their meeting, the sides nearly flat, the edges sharp and inflected.

Head rather large, oblong, narrowed anteriorly. Neck of moderate length, strong. Body full. Wings long. Feet of moderate length, rather slender; tibia bare below; tarsus somewhat compressed, covered anteriorly with numerous scutella, laterally with angular scales, behind with numerous small oblong scales; hind toe very small and elevated, the fore toes of moderate length, rather slender, the fourth longer than the second, the third longest, all scutellate above, and connected by reticulated entire membranes, the lateral toes margined externally with a narrow membrane. Claws small, slightly arched, depressed, rounded, that of middle toe with an expanded inner margin.

The plumage in general is close, full, elastic, very soft and blended, on the back rather compact. Wings very long, broad, acute, the first quill longest, the second scarcely shorter, the rest of the primaries rather rapidly graduated; secondaries broad and rounded, the inner narrower. Tail of moderate length, even, of twelve rounded feathers.

Bill gamboge-yellow, the lower mandible bright carmine towards the end. Edges of eyelids bright carmine, iris silvery. Feet yellow, claws black. The head, neck, and all the lower parts, pure white; back and wings deep blackish-grey tinged with purple, or dark slate-colour; the rump and tail white, as are the edges of the wing, and a large portion of the extremities of all the quills; the second, third, fourth, and fifth primaries have a broad band of black across their ends, the inner web only of the second being so marked, in some specimens however both webs. The œsophagus is very large, the gizzard small, the intestine four feet long, and about the thickness of a goose quill.

Length to end of tail $29\frac{3}{4}$ inches, to end of wings $31\frac{1}{2}$, to end of claws $29\frac{1}{4}$; extent of wings 67; wing from flexure 20; tail 9; bill along the ridge $2\frac{1}{2}$, along the edge of lower mandible $3\frac{9}{12}$; its depth at the angle 1, at the base $\frac{1}{12}$; tarsus $3\frac{2}{12}$; middle toe $2\frac{1}{2}$, its claw $\frac{1}{2}$. Weight 3 lbs.

The Female is similar to the male, but considerably less.

The Young, when fledged, have the bill brownish-black, the iris dark

brown, the feet as in the adult. The head and neck are greyish-white, streaked with pale brownish-grey; the upper parts mottled with brownish-black, brownish-grey, and dull white, the rump paler. The primary quills blackish-brown, slightly tipped with brownish-white; the tail-feathers white, with a large brownish-black patch towards the end, larger on the middle feathers, which are also barred towards the base with dusky. The lower parts are greyish-white, the sides and lower tail-coverts obscurely mottled with greyish-brown.

Male, from Dr. T. M. BREWER. The mouth is of moderate width, its breadth being 1 inch 9 twelfths; the palate flat, with two very prominent papillate ridges, and four series of intervening papillæ; on the upper mandible beneath are five ridges, and the horny edges are prominent and thin, but very strong; the posterior aperture of the nares linear, 1 inch 9 twelfths long. The tongue is 2 inches 2 twelfths in length, fleshy above, horny beneath, rather narrow, deeply channelled, the base emarginate and finely papillate, the tip narrowly rounded.

The left lobe of the liver is larger than the right, which, however, is more elongated, being 4 inches in length, the other 3 inches; the gall-bladder oblong, 1 inch 2 twelfths by 7 twelfths. There is a large accumulation of fat under the parietes of the abdomen, and appended to the stomach.

The œsophagus is 14 inches long; at the commencement its width is $2\frac{1}{2}$ inches, it then contracts to 1 inch 9 twelfths, at the lower part of the neck enlarges to 2 inches, and towards the proventriculus to $2\frac{1}{2}$ inches; it then suddenly contracts at the commencement of the stomach. This organ is rather small, and of an oblong form, $2\frac{1}{2}$ inches long, 1 inch 9 twelfths broad; the lateral muscles of moderate size, the inferior prominent, the tendons large and radiated; the epithelium extremely dense, thick, with strong longitudinal ridges, and of a bright red colour. It contains remains of crabs. The proventricular glands, which are very small, being $1\frac{1}{2}$ twelfths in length, and $\frac{1}{4}$ twelfth broad, form a belt $1\frac{1}{4}$ inches in breadth, traversed by very prominent rugæ, continuous with those of the stomach. The inner membrane of the œsophagus is strongly plaited, and that part is capable of being distended to 3 inches. The intestine is 50 inches long, its greatest width $4\frac{1}{2}$ twelfths; the cœca $\frac{1}{2}$ inch long, $\frac{1}{4}$ inch wide, their distance from the extremity 5 inches; the rectum is 8 twelfths in width, and the cloaca forms a globular dilatation $1\frac{1}{2}$ inches in diameter.

The trachea is 12 inches long; at the top $7\frac{1}{2}$ twelfths wide, gradually contracting to $4\frac{1}{2}$ twelfths, considerably flattened, its rings slightly ossified, 148 in number, of moderate breadth, very thin, contracted in the middle line before and behind; the last half ring is large, moderately arched. In this, as in all the other Gulls, there is a pair of slender muscles arising from the

sides of the thyroid bone in front, separating from the trachea, attaching themselves to the subcutaneous cellular tissue, and inserted into the furcula. Another pair arise from the same bone in front, spreading over the whole anterior surface of the trachea, then become collected on the sides, send off a slip to the costal process of the sternum, and continue narrow, to be inserted into the last arched half-ring of the trachea; thus forming what is called a single pair of inferior laryngeal muscles. Bronchi wide, each with 28 half rings.

FAMILY XLIII.—PROCELLARINÆ. FULMARS.

Bill generally shorter than the head, moderately stout, compressed; upper mandible with the ridge formed of two generally united plates, at the anterior part of which, usually about half the length of the bill, are the nostrils; the sides separated by a groove, the tip a decurved, compressed, pointed unguis; lower mandible with the angle very long and narrow, the tip more or less decurved. Head of moderate size, ovate; neck of moderate length; body compact. Feet of ordinary length, rather slender; tibia bare below for a short space; tarsus a little compressed, anteriorly scutellate; toes four, the first extremely small and elevated, with a conical deflected claw; anterior toes webbed; the third and fourth nearly equal. Claws arched, compressed, acute. Plumage full, soft, rather compact above. Wings long, rather broad, pointed, the first quill generally longest. Tail short, of from twelve to sixteen feathers. Œsophagus very wide, often enormously dilated, especially at its lower part, stomach small, moderately muscular; intestine of moderate length; cœca rather long; cloaca oblong or globular. Trachea simple, with a single pair of inferior laryngeal muscles.

WELL

Great Black-backed Gull

Male

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

Lith. Printed & Col^d by J. T. Bowen, Philad^a

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