The young female resembles the old one, but has less yellow on the rump and under parts.

I have carefully compared skins of the American bird with others of that found in Scotland, but have not succeeded in detecting any differences sufficient to indicate a specific distinction.

THE HEMLOCK SPRUCE.

PINUS CANADENSIS, *Mich.*, Arbor. Forest., vol. i. p. 137, pl. 13. *Pursch*, Fl. Amer. Sept., vol. ii. p. 640.—MONCEIA MONADELPHIA, *Linn.*—CONIFERE, *Juss.*

The *hemlock* or *Canadian spruce* is characterized by its solitary, flat, somewhat distichous leaves, and very small ovate terminal cones. It is one of the most majestic and beautiful trees of the forests of the Middle States, where it grows abundantly in certain parts, such as the Great Pine Forest, the Pocano Mountains, &c., extending from Carolina to the extremity of Maine. The wood is not considered equal to that of the true pines, and unless kept dry very soon decays, but the bark is excellent for tanning. The height sometimes reaches a hundred feet, and the diameter near the base is often six feet or more.

WHITE-WINGED CROSSBILL.

†LOXIA LEUCOPTERA, *Gmel.*

PLATE CCI.—MALE, FEMALE, AND YOUNG.

I found this species quite common on the islands near the entrance of the Bay of Fundy, which I visited early in May 1833. They were then journeying northwards, although many pass the whole year in the northern parts of the State of Maine, and the British provinces of New Brunswick and Nova Scotia, where, however, they seem to have been overlooked, or confounded with our Common American Crossbill. Those which I met with on the islands mentioned above were observed on their margins, some having alighted on the bare rocks, and all those which were alarmed

White-winged Crossbill.

1. Males 2. Females.

immediately took to wing, rose to a moderate height, and flew directly eastward. On my passage across the Gulf of St. Lawrence to Labrador, in the same month, about a dozen White-winged Crossbills, and as many Mealy Redpolls, one day alighted on the top-yards of the Ripley; but before we could bring our guns from below, they all left us, and flew ahead of the vessel, as if intent on pointing out to us the place to which we were bound. On the 30th of June, a beautiful male was shot, on a bunch of grass growing out of the fissure of a rock, on a small island a few miles from the coast of Labrador; and on the 23d of July, my young friend Dr. GEORGE SHATTUCK, procured a fine adult female on the Murre Islands, whilst she was feeding among the scanty herbage.

Within the limits of the United States, I have obtained some during winter along the hilly shores of the Schuylkill river in Pennsylvania; also in New Jersey, and in one instance in Maryland, a few miles from Baltimore, beyond which southward I have never met with this species, nor have I heard of any having been seen there. According to Mr. TOWNSEND, who resided about four years on the Columbia river, none are met with in that region. As it appears that individuals accidentally visit Europe, I am led to think that the true summer haunts of this species are as yet not better known than those of the Bohemian Chatterer and Common Crossbill. The latter has been shot in winter by my son JOHN WOODHOUSE, within a few miles of Charleston in South Carolina, where several were seen, and the specimen he procured there is now in the collection of my friend the Reverend JOHN BACHMAN.

The southward migration of this Crossbill, as well as of the other, is extremely irregular. Being evidently hardy birds, they appear to prefer northern to temperate climates, and to shift their station only during the most severe cold. The comparatively small number that spend the year in Maine and the British Provinces adjoining, may be forced to do so by wounds or other accidents, as in general I have found them moving toward the north as soon as the chill blasts of winter were tempered by the warmer rays of the vernal sun.

The habits of the White-winged Crossbill are in general similar to those of our common species. Its flight is well sustained and undulated; it is easily approached, is fond of saline substances, uses its bill and feet in the manner of Parrots, and procures its food from the cones of pines. Its song is at times mellow and agreeable, and in captivity it becomes gentle and familiar.

Mr. HUTCHINS says that this species reaches Hudson's Bay in the month of March, and breeds in May, forming a nest of grass, mud, and feathers, about midway up pine trees, and laying five white eggs, marked with yel-

lowish spots. The young are abroad in the end of June, and the species remains in that country until the latter part of November. Dr. RICHARDSON states that it "inhabits the dense white spruce forests of the Fur Countries, feeding principally on the seeds of cones. It ranges through the whole breadth of the continent, and probably up to the sixty-eighth parallel, where the woods terminate, though it was not observed by us higher than the sixty-second. It is mostly seen on the upper branches of the trees, and, when wounded, clings so fast, that it will remain suspended after death. In September it collects in small flocks, which fly from tree to tree, making a chattering noise; and in the depth of winter it retires from the coast to the thick woods of the interior."

Male, $6\frac{1}{2}$, $10\frac{5}{8}$. Female, $6\frac{1}{4}$, 10.

During winter, as far south as Maryland. Not uncommon in New Jersey and Pennsylvania, where a few breed. Common in Maine, Nova Scotia, Labrador, and the Fur Countries. Migratory.

WHITE-WINGED CROSSBILL, *Loxia leucoptera*, Wils. Amer. Orn., vol. iv. p. 48.

LOXIA LEUCOPTERA, Bonap. Syn., p. 117.

WHITE-WINGED CROSSBILL, *Loxia leucoptera*, Bonap. Amer. Orn., vol. ii. p.

LOXIA LEUCOPTERA, *White-winged Crossbill*, Swains. and Rich. F. Bor. Amer., vol. ii. p. 263.

WHITE-WINGED CROSSBILL, *Loxia leucoptera*, Nutt. Man., vol. i. p. 540.

WHITE-WINGED CROSSBILL, *Loxia leucoptera*, Aud. Orn. Biog., vol. iv. p. 467.

Adult Male.

Bill rather long, stout at the base, where it is higher than broad, extremely compressed toward the end, the mandibles towards their extremity deflected to opposite sides, so as to cross each other. Upper mandible with the dorsal line convex and deflected, the sides slightly convex, the edges sharp, and towards the end united, as in *Rhynchops nigra*, the tip excessively compressed, decurved, and extending far beyond that of the other. Lower mandible with its angle very short and broad, the dorsal outline ascending and convex, the edges sharp, inflected, and approximated at the tip, which is extremely acute. Nostrils small, basal, round, covered by short bristly feathers.

Head large, broadly ovate; eyes small; neck short; body compact. Feet rather short, strong; tarsus short, compressed, with seven anterior scutella, and two posterior plates meeting so as to form a thin edge; toes of moderate size, the outer united at the base, the first strong, the lateral toes nearly equal, the third much longer; the pads and papillæ of the soles very large. Claws long, arched, very slender, much compressed, tapering to a fine point.

Plumage blended. Wings of ordinary length, pointed, the outer three primaries longest (in one specimen the first longest, in three the second); secondaries slightly emarginate. Tail of moderate length, deeply emarginate, the feathers curved outwards at the point.

Bill dusky, tinged with greyish-blue, especially on the edges. Iris hazel. Feet dark reddish-brown. The general colour of the plumage is rich carmine, inclining to crimson; the feathers on the fore part and middle of the back dusky, excepting the tips; the scapulars, wings, upper tail-coverts, and tail black; two broad bands of white on the wing, the anterior formed by the first row of small coverts and several of those adjoining, the other by the secondary coverts, of which the basal half only is black; the inner secondaries are tipped with white, as are the tail-coverts, and the quills and tail-feathers are very slightly margined with whitish. Bristly feathers at the base of the bill yellowish-white; sides brownish, and streaked with dusky, axillar feathers whitish; lower tail-coverts brownish-black, broadly margined with reddish-white.

Length to end of tail $6\frac{1}{2}$ inches, to end of wings $5\frac{1}{4}$, to end of claws 5; extent of wings $10\frac{5}{8}$; bill along the ridge $\frac{8\frac{3}{4}}{12}$, along the edge of lower mandible $\frac{7}{12}$; wing from flexure $3\frac{7}{12}$; tail $2\frac{7}{12}$; tarsus $\frac{7\frac{1}{2}}{12}$; hind toe $\frac{3\frac{1}{2}}{12}$, its claw $\frac{5}{12}$; middle toe $\frac{5}{12}$, its claw $\frac{5}{12}$.

Female.

The female has the upper parts dusky, the feathers margined with greyish-yellow, the rump wax-yellow; the lower parts are yellowish-grey, streaked with dusky, the fore part of the breast wax-yellow; the wings and tail are as in the male, but paler, and with the white bands on the former of less breadth. Bill and feet darker than those of the male.

Length to end of tail $6\frac{1}{4}$ inches, to end of wings 5, to end of claws $5\frac{1}{4}$; extent of wings 10.

Young.

The young resemble the female, but the lower parts are dull yellowish-grey, spotted and streaked with dark brown.

After the first moult the male still resembles the female, but is more yellow. At the next moult it acquires the red colour, which becomes richer and purer the older the bird.

In this species there are three longitudinal ridges on the roof of the mouth, and the palate is bent in the same manner as in Buntings. The tongue is of the same general form as that of the Pine Grosbeak, $3\frac{1}{2}$ twelfths long, compressed and slender at the base, with the basihyoid bone of a similar form, concave above, dilated and rounded at the end, so as to resemble a scoop or spoon. The œsophagus, *b c d e*, is 2 inches and 8 twelfths long, when

dilated forms a crop of vast size, *c d*, which lies chiefly on the right side of the neck, but also passes behind so as to appear on the left side. This form occurs equally in the Common Crossbill, and seems to be peculiar to this genus. The greatest breadth of the crop is 10 twelfths. On entering the thorax, the œsophagus contracts to 2 twelfths. The proventriculus, *e*, is bulbiform, with a diameter of 3 twelfths. The stomach, *f*, is a strong gizzard of rather small size, somewhat bent in the same manner as that of the Pine Grosbeak, $4\frac{3}{4}$ twelfths long, 6 twelfths broad; its muscles distinct; the cuticular lining very firm but thin, longitudinally rugous, and of a light red colour. The intestine, *g h i j k*, is $10\frac{1}{2}$ inches long, its greatest diameter 2 twelfths, its least $1\frac{1}{2}$ twelfths. The rectum, *j k*, is 1 inch 2 twelfths long, including the cloaca. The cœca, *j*, are $1\frac{1}{4}$ twelfths long, and $\frac{1}{4}$ twelfth broad.

The trachea is 1 inch 9 twelfths long, $1\frac{1}{2}$ twelfths broad at the upper part, gradually diminishing to 1 twelfth; its rings firm, and about 75 in number. The inferior laryngeal muscles are large. The bronchi are formed of about 15 half-rings.

The twigs represented in the plate are those of a species of *alder* common in Newfoundland.

GENUS XIV.—CORYDALINA, *Aud.* LARK-FINCH.

Bill of the same form as in the *Guiraca*, but smaller, and approaching to that of *Dolichonyx*, being short, robust, conical, a little compressed; upper mandible a little narrower, with the dorsal line very slightly convex, the ridge indistinct, the nasal sinus very broad and short, the sides convex, the edges ascending for a third of their length, then direct, the notches almost obsolete, the tip narrow; lower mandible with the angle short and very

White-winged Crossbill.

1. Males 2. Females.

Audubon, John James. 1841. "White-Winged Crossbill, *Loxia leucoptera*, Gmel. [Pl. 201]." *The birds of America : from drawings made in the United States and their territories* 3, 190–194. <https://doi.org/10.5962/p.319314>.

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