

Will the mighty reforms now attempted be completed and made permanent? Can a nation appropriate the fruits of Christian civilization without its root? I believe not. I can not but think that, unless the modern enlightened ideas of government, law, society, and the rights of the individual be adopted to a far greater extent than they have been, the people be thoroughly educated, and a mightier spiritual force replace Shintō and Buddhism, little will be gained but a glittering veneer of material civilization and the corroding foreign vices, under which, in the presence of the superior aggressive nations of the West, Dai Nippon must fall like the doomed races of America. But a new sun is rising on Japan. In 1870 there were not ten native Protestant Christians in the empire; there were in May, 1876, ten churches, with a membership of eight hundred souls. Gently but irresistibly Christianity is leavening the nation. In the next century the native word *inaka* ('boor') will mean 'heathen.' With those forces that centre in pure Christianity, under that Almighty Providence who raises up one nation and casts down another, I cherish the firm hope that Japan will in time take and hold her equal place among the foremost nations of the world, and that in the onward march of civilization which follows the sun, the Sun-land may lead the nations of Asia that are now appearing in the theatre of universal history."

A SUMMER BIRD.

CECILIUS CALVERT, second Baron of Baltimore, has a hold upon the recollections of mankind far surpassing that secured by any monument in the noble city which he founded, in the fact that the most charming bird that makes its summer home in the parks of that city bears his name. That bird is the Baltimore oriole—*Icterus baltimore* of Linnæus. Its plumage is patterned in orange and black, the baronial colors of the noble lord's livery, and Linnæus only paid an appropriate compliment to the source to which he owed his specimen of the new species when, in 1766, he recognized the coincidence in the name.

Then as now the orioles were among the most beautiful and conspicuous of woodland birds. From their winter retreat under the tropics they return northward as the warm weather advances, arriving in Maryland during the latter part of April, and reaching Central New England by the middle of May. In these migrations, performed mostly by day, they fly continuously and in a straight line high overhead. About sunset they halt, and uttering a few low notes, dive into the thickets to feed, and afterward to rest. They do not go in flocks, but singly, or two or three together. The males come to us in advance, and instantly announce their presence by a loud and joyous song, in the execution of which they continually emulate one another during the week or more that elapses before the arrival of the females. But this emulation does not end with vy-

ing in song; they have many pitched battles, chasing each other from tree to tree and through the branches with angry notes. The coming of the females offers some diversion to these pugnacious cavaliers, or at least furnishes a new *casus belli*; for, while they devote themselves with great ardor to wooing and winning their coy mistresses, their jealousy is easily aroused, and their fighting is often resumed. Even the lady-loves sometimes forget themselves so far as to savagely attack their fancied rivals, or drive out of sight the chosen mate of some male bird whom they want for themselves. This is not all fancy, but lamentable fact.

Mademoiselle Oriole is not so showy as her gay beau. Persuade the pair to keep quiet a moment, and compare them. They are in size between a bluebird and a robin, but rather more slender than either. The plumage of the male is of a rich but varying orange upon all the lower parts, underneath the wings, upon the lower part of the back, and the outer edges of the tail; the throat, head, neck, the part between the shoulders, wing quills, and middle tail feathers are velvety black; the bill and feet are bluish; there is a white ring around the eye, and the lesser wing quills are edged with white. In the female the pattern of color is the same, but the tints are duller. The jet of the male's head and neck is rusty in his mate, and each feather is margined with olive. The orange part of the plumage is more like yellow in the female, and wing and tail quills are spotted and dirty. Three years are required for the orioles to receive their complete plumage, the gradual change of which is beautifully represented in one of Audubon's gigantic plates. "Sometimes the whole tail of a [young] male individual in spring is yellow, sometimes only the two middle feathers are black, and frequently the black on the back is skirted with orange, and the tail tipped with the same color." Much confusion arose among the earlier naturalists from this circumstance.

The singing of the males is at its height now that the females have come, and they are to be heard, not only from field and grove and country way-side, but in the streets of villages, and even in the parks of cities, where they are recognized by every school-boy, who calls them fire-birds, golden-robins, hang-nests, and Baltimore birds. The lineden avenues of Philadelphia, the elm-embowered precincts of New Haven, the sacred trees of Boston Common, the classic shades of Harvard Square, and the malls of Central Park all echo to their spring-time music.

The song of the oriole is indescribable, as to me are the tunes of most of the songsters. Nuttall's ingenious syllables are totally useless in expressing the pure and versatile fluting which floats down from the elm top.

Wilson catches its spirit when he says that "there is in it a certain wild plaintiveness and *naïveté* extremely interesting," and that it is uttered "with the pleasing tranquillity of a careless plowboy whistling for his own amusement." It is a joyous, contented song, standing out from the chorus that greets our half-awakened ears at daylight as brightly as its author shines against the dewy foliage. T. W. Higginson exclaims, "Yonder oriole fills with light and melody the thousand branches of a neighborhood." It is a song varying with the tune and circumstances, and, as among all birds, some orioles are better performers than others. Dr. Brewer thought that when they first arrived, and were awaiting the females, the voices of the males were loud and somewhat shrill, as though in lamentation, and that this song changed into a "richer, lower, and more pleasing refrain" when they were joined by their partners. The quality of their music is certainly different in different parts of the country, seeming, for example, to be more subdued toward the northern limit of their range.

A writer in an old number of *Putnam's Magazine* describes two orioles with which he had been acquainted for several summers. These birds had taken up their residences within about a quarter of a mile of each other, one in a public park, and the other in an orchard. "And often," says the narrator, "have I heard the chief musician of the orchard, on the topmost bough of an ancient apple-tree, sing,



to which the chorister of the park, from the summit of a maple, would respond, in the same key,



and, for the life of me, I never was able to tell whether their songs were those of rivalry or of greeting and friendly intercourse. And now if you will strike these notes on the piano, or, which is better, breathe them from the flute, you will know the song of the oriole, or rather obtain an idea of its general characteristics, for no two that I have ever heard sang the same melody."

The female also has a pretty song, which mingles with the brilliant tenor of the male during all the season of love-making; but as May merges into June, and the business of the summer begins, both cease their exalted strains, and only the mellow, ringing whistle is heard. Then, as family cares increase, they lay aside even this, and, except at dawn, are rarely heard at all.

But, after all, the chief interest about our

oriole is its wonderful home, which hangs upon the outmost branches of the elms along the street or in the grove, and is completed by June 10. The nest is never found in the deep woods. Its maker is a bird of the sunlight, and is sociable with man. The haunts of the orioles are those grand trees which the farmer leaves here and there in his field as shade for his cattle, that lean over the brier-tangled fence of the lane, or droop toward the dancing waters of some rural river. "There is," says Thomas Nuttall, "nothing more remarkable in the whole instinct of our golden-robin than the ingenuity displayed in the fabrication of its nest, which is, in fact, a pendulous, cylindrical pouch of five to seven inches in depth, usually suspended from near the extremities of the high drooping branches of trees (such as the elm, the pear, or apple tree, wild cherry, weeping-willow, tulip-tree, or button-wood)."

These words might in a general way apply to all the *Icteri*, most of which inhabit North or South America, have brilliant plumages, and build nests of matchless workmanship, woven and entwined in such a way as would defy the skill of the most expert seamstress, and unite dryness, safety, and warmth. They are mostly pendulous from the ends of branches, and form thus a security from snakes and other robbers, which could easily reach them if placed on a more solid foundation. They are formed of the different grasses, dry roots, lichens, long and slender mosses, and other advantageous materials often supplied by man's art. Among different species the structures vary in shape from resembling a compact ball to nearly every bottle-shaped gradation of form, until they exceed three or four feet in length. Many species being gregarious, they breed numerously in the same vicinity or on the same tree, resembling in this and other respects the weaver birds, to which they are closely allied. But for us our Baltimore's nest possesses the most attractions; and as I shall have much to say concerning this fine example of a bird's architecture, I can not begin better than by quoting Nuttall's description of it. It would be impossible for me to say any thing different and as well:

"It is begun by firmly fastening natural strings of the flax of the silk-weed, or swamp hollyhock, or stout artificial threads, around two or more forked twigs, corresponding to the intended width and depth of the nest. With the same materials, willow down, or any accidental ravelings, strings, thread, sewing silk, tow, or wool that may be lying near the neighboring houses or around grafts of trees, they interweave and fabricate a sort of coarse cloth into the form intended, toward the bottom of which they place the real nest, made chiefly of lint, wiry grass, horse and cow hair: sometimes, in defect of hair, lining the interior with a mixture of slender strips of smooth vine bark, and rarely with a few feathers; the whole being of a considerable thickness, and more or less attached to the external pouch. Over the top, the leaves, as they grow out, form a verdant and agreeable canopy, defending

the young from the sun and rain. There is sometimes a considerable difference in the manufacture of these nests, as well as in the materials which enter into their composition. Both sexes seem to be equally adepts at this sort of labor; and I have seen the female alone perform the whole without any assistance, and the male also complete this laborious task nearly without the aid of his consort, who, however, in general, is the principal worker."

Many persons believe that there is a constant tendency in birds to vary their architecture to suit their surroundings, in accordance with climate, greater or less readiness of certain materials, and security. The Baltimore oriole affords a good illustration of this tendency. Like the swallows, robin, bluebird, pewit, and others, the oriole has abandoned the wilds for the proximity to man's settlements, doing it chiefly for two reasons—the greater abundance of insect food, and protection from hawks, owls, and crows, which are fewer in number and less bold in the clearings.

In the swamps of the Gulf States, the Baltimore, finding no necessity for great warmth or shelter from chilling winds, fabricates an airy nest of Spanish moss (*Tillandsia usneoides*). Audubon described and figured such a one, but the exact truth of Audubon's description was rather doubted until the Boston Society of Natural History received other similar nests from Florida. In these cases the bird chose material perfectly suited to the temperature, in preference to the flax and felt which it would have used in the North. This is a modification due to difference of latitude and accompanying difference of climate; but I venture to say that the Baltimore's nests in general built during an unusually hot season in any latitude will be much lighter than those built during a cool or backward year.

We may suppose that the oriole, having learned that the place for its home safest from all marauding animals and reptiles was out upon the tips of the swaying twigs, which would not bear the marauder's weight, would also have learned the shape best adapted to that situation; and that if it knew enough to choose the lesser danger from man in order to escape a greater one from hawks when it came out of the deep woods, it would also have reason enough to alter its style of building in such a way as should best hide the sitting bird from the prying eyes of its winged enemies, and at the same time afford dryness and warmth to the interior. Both of these were secured in the thick branches of the primeval forest by the leaves overhead and around. It is hence found that in the same climate the more exposed a nest is the denser its composition, the deeper the pouch, and the smaller its mouth. Pennant and others of the earlier writers on American birds described the orioles' nests as having only a hole near the top for entrance and exit, like those of

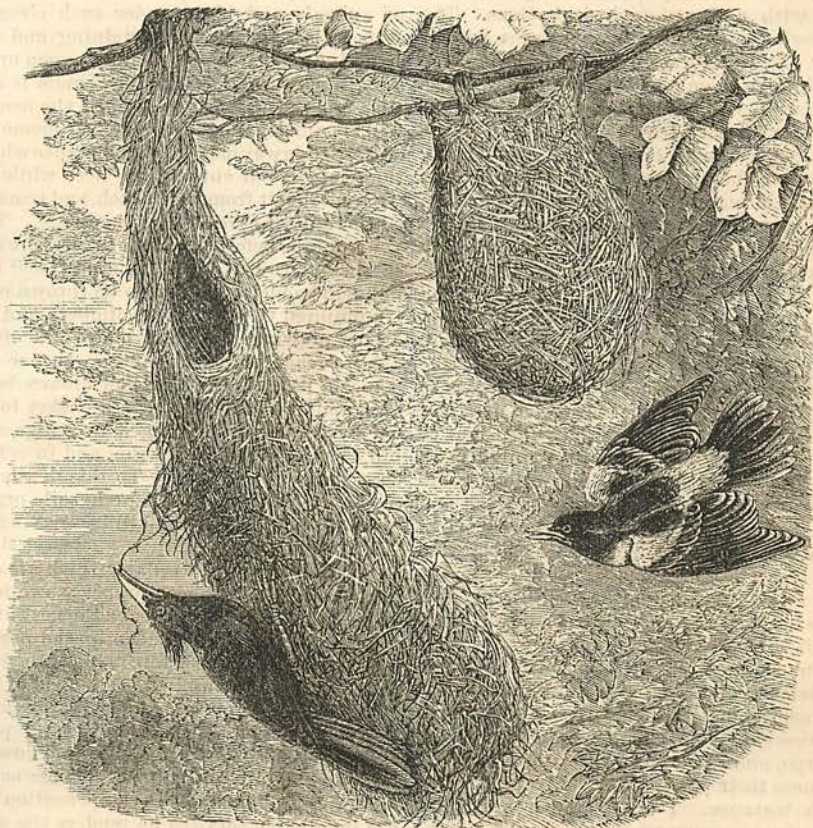
some of the South American species. Wilson, who was the first real critic of our ornithology, said this was certainly an error, adding, "I have never met with any thing of the kind." Both authors seem to have made too sweeping assertions, and, as usual, there is a golden mean of fact. Our hang-nest has enough discernment to select the safest and best site for a nest ever chosen by a tree-building bird. He has discretion enough to inhabit those trees where his young will be least exposed to birds of prey; he has sense and skill enough to build a warm or cool house to suit the climate—a deep and tight one where the sun shines brightly, and sharp eyes might see the orange coat of himself or his mate within, and a loose and (in labor) less expensive one where deep shadows hide it. Surely, then, this consummate workman has ingenuity enough to put a roof over his dwelling to shed the rain and the hawk's glances, leaving only a little door in the side. Both of these things the hang-nest actually does. I myself have seen a nest of his making, over the open top of which a broad leaf had been bent down and tied by glutinous threads in such a way as to make a good portico. Mr. Thomas Gentry found a much more complete example at Germantown (Philadelphia), Pennsylvania, where the orioles "were constrained to erect a permanent roof to their dwelling by interwoven strings through their deprivation of the verdant and agreeable canopy which the leaves would naturally afford..... So nicely is the roof adjusted that even the most critical investigation can not discern the union. The entrance is a circular opening situated in the superior third of the nest, facing southwardly." Mr. Gentry considers this the latest improvement upon a nest which in the beginning was simply a hammock in the fork of a tree, like a vireo's, but which has been made more and more pendulous, until what was at first the whole nest is now only the lining at the bottom of a deep inclosing bag.

With the idea of testing Wallace's theory that birds of bright colors, easily detected by birds of prey, are always found to occupy concealing nests, Dr. C. C. Abbott, of Trenton, New Jersey, made extensive notes upon the nests of our subject. In every instance those nests which fully concealed the sitting bird were at a considerable distance from any house in uncultivated parts. In all such localities sparrow-hawks were seen frequently, as compared with the neighborhoods selected for building the shallower open-topped nests, all of which were in willow or elm trees in the yards of farm-houses. The conclusion drawn was that the orioles knew where danger from hawks was to be apprehended, and constructed accordingly—the less elaborate nest in the farmer's yard answering every purpose for incubation.

Dr. Abbott says, however, that of the nests that did conceal the sitting bird, every one was really open at the top, and the bird entered from above. Its weight, when in the nest, appeared to draw the edges of the rim together sufficiently to shut out all view of the occupant. It is his opinion, however, that years ago, when its enemies were more numerous, the nest of this oriole was perfectly closed at the top, and with a side opening; but he finds none so now.

The question why this species alone among our birds is supposed to have learned by dear experience to take such precau-

self only in collecting materials for his mate. They labor very steadily, but a week's work is necessary for the completion of their home. It seems strange that domiciles constructed with so much pains should not be occupied successive seasons, but this seems never to be the case. It sometimes happens, however, that orioles will pick to pieces an old nest to get materials for a new one, just as the Indians of Peru often construct their huts of the cut-stone blocks of the ancient palaces of the Incas. These birds are very knowing in gathering stuff for the framework of their nests, and perceive the adapt-



NESTS OF THE CRESTED AND BALTIMORE ORIOLES.

tions against its foes has already been answered: it is because the Baltimore oriole is almost the only species in which the female is not protected from observation by her neutral and dull colors, and in which the brightly plumaged male also sits upon the eggs. Mother Necessity has prompted its marvelous invention.

Nuttall thought both sexes equally expert at nest-building, although the labor principally devolved upon the female. The latter clause in particular Mr. Gentry has confirmed, and tells us that the male occupies him-

ability of the housewife's yarn and laces, hung out to dry, to their needs much sooner than they perceive the immorality of stealing it. White cotton strings are rarely absent from their nests, which are sometimes almost entirely composed of them. Some curious anecdotes have been related of this economical propensity and its results. Nuttall tells the following:

"A female (oriole), which I observed attentively, carried off to her nest a piece of lamp-wick ten or twelve feet long. This long string and many other shorter ones

were left hanging out for about a week before both ends were wattled into the sides of the nest. Some other little birds, making use of similar materials, at times twitched these flowing ends, and generally brought out the busy Baltimore from her occupation in great anger."

A lady once told John Burroughs that one of these birds snatched a skein of yarn from her window-sill, and made off with it to her half-finished nest. But the perverse yarn caught fast in the branches, and, in the bird's efforts to extricate it, got hopelessly tangled. She tugged away at it all day, but was finally obliged to content herself with a few detached portions. The fluttering strings were an eyesore to her ever after, and passing and repassing she would give them a spiteful jerk, as much as to say, "There is that confounded yarn that gave me so much trouble!"

A gentleman in Pennsylvania, observing an oriole beginning to build, hung out "skeins of many-colored zephyr yarn, which the eager artist readily appropriated. He managed it so that the bird used nearly equal quantities of various high, bright colors. The nest was made unusually deep and capacious, and it may be questioned if such a thing of beauty was ever before woven by the cunning of a bird."

The nest being done, the female begins to deposit her eggs on the successive day, and continues laying one each day until four or five are laid. The eggs are pointed oval, 0.90 by 0.60 of an inch in dimensions, grayish-white, with a roseate tinge in fresh and transparent specimens, and variously marked with blotches and irregular lines, like pen scratches, of purplish-brown. On the day following, incubation begins, and the eggs hatch at the end of fifteen days, bringing it to the middle of June.

The courage and devotion of the parents in defense of their nests are known to every ornithologist. They expose themselves fearlessly to danger rather than desert their charge, and call upon heaven and earth to witness their persecution. I remember one such instance. I discovered a nest with eggs in a sycamore on the banks of the Yantic River, in Connecticut. In trying to examine it I roused the ire of the owners, who showed the most intense anger and dismay. Enjoying this little exhibition, I did all I could to terrify the fond parents without harming them at all, and then quietly watched the result. The birds flew close about the nest, screaming and uttering a loud rolling cry like a policeman's rattle, which very soon brought plenty of sympathetic and curious friends. A cat-bird ventured too near, and was pounced upon by the Baltimore with a fierceness not to be resisted. But when the cat-bird found he was not pursued beyond the shade of the

tree, he perched upon a neighboring post, and by hissing, strutting up and down, and every provoking gesture known to birds, challenged the oriole, who paid no attention to his empty braggadocio. Then Mrs. Oriole did something distasteful to her lord, and received prompt chastisement. A confident kingbird dashed up, and was beautifully whipped in half a minute. Vireos, pewits, warblers, were attracted to the scene, but kept at a safe distance. There was no appeasing the anxiety of the parents until I left, and probably they spent the whole afternoon in recovering their equanimity.

The study of the expressions and dialects of animals and birds under such circumstances is extremely entertaining and instructive. Though you should happen upon a Baltimore's nest when the female is sitting, and the male is out of sight, the female will sit quietly until the very last moment; and Mr. Ridgway mentions an instance where the female even entered her nest while he was severing it from the branch, and remained there until carried into the house. The young birds, before they can fly, Dr. Brewer says, climb to the edge of the nest, and are liable in sudden tempests to be thrown out. If uninjured they are good climbers, and by means of wings, bill, and claws are often able to reach places of safety. In one instance a fledgeling which had broken both legs, and had been placed in a basket to be fed by its parents, managed by wings and bill to raise itself to the rim, and in a few days took its departure. To this dexterity in the use of the bill as a prehensile organ the birds may owe their skill in weaving.

The young are fed upon an insect diet, and mainly upon caterpillars, which are disgorged after having been properly swallowed by the parents. They leave the nest after a fortnight, but are attended by the parent birds ten days longer before being turned off to take care of themselves. The food of the Baltimore oriole, old and young, is almost entirely insectivorous, succulent young peas and the stamens of cherry and plum flowers forming the only exceptions. These small robberies are but a slight compensation for the invaluable services he renders the gardener in the destruction of hosts of noxious insects. At first beetles and hymenopterous insects form his diet, and he seeks them with restless agility among the opening buds. As the season progresses, and the caterpillars begin to appear, he forsakes the tough beetle, and rejoices in their juicy bodies. Even the hairy kinds he does not refuse, and is almost the only bird that will eat the disgusting tent caterpillar of the apple-trees.

About the middle of September the Baltimore orioles begin to disappear, and by the last of the month all have left the Northern States for their winter-quarters in Mexico, Central America, and the West Indies.