

swept away by the high water of spring, and only shapeless rafts of rubbish grounded here and there among the rushes were left to show how industriously these little water folk had builded but a few months ago. Their homes were now in burrows in the banks, the occupancy of which was seldom indicated in daytime but by the rolling of the watery entrance, or the sluggish underwater wake of a silent incomer or outgoer.

Great blue herons sentinelled the shallows, or fanned their slow way from one to another, and now and then a bittern made a startled ungainly flight from the densest beds of rushes, while kingfishers scolded and clattered along their jerky course, or hung over minnow-haunted shoals as if suspended by invisible threads, which presently were severed and let them fall into the brown water with a splashing upburst of spray. The scraggy tangles of button bushes were noisy and flashing with innumerable nesting redwings, sunfish and perch were incessantly snapping at the various insects resting on or hovering about the water plants, and great fish surged through the rushes in pursuit of prey or in swift retreat from the boat. The marshes were busy with the life of their thronging tenants in the happy summers of those days. Alas, that they are so silent and deserted now!

Over the tops of the rushes Sam caught occasional glimpses of Antoine stealing along the shore in his nefarious bullpout prodding, and mildly "dum'd him" in soliloquy "for a wus'n half Injin." In the afternoon he paddled to the mouth of the creek, and after looking at the dancing waves of the sunlit bay clasped in the arms of the green-clad June shores, and watching the majestic sweep of an eagle wheeling above the cliffs, he beached his canoe on the rushy shore of the landing and took his fare of fish to camp, whither his companions soon came. At nightfall they had their bountiful supper of fish, and then as they smoked their pipes about the dying embers, each told the story of his day's outing.

ROWLAND E. ROBINSON.

ON THE PATERA.

STARTING from the town of Santa Barbara, Cal., one morning early, I found myself spinning over the hard adobe behind two wiry mustangs. Approaching the desired goal, we heard the summons, "All out for the ducks!" and after tethering horses we got into boots and coats, and, with guns on shoulders and retrievers at heel, we started the day's shooting. Crouching in a small ravine by the lake, we waited. Whizzing by comes a flock of teal and the silence is broken by two reports, followed sharply by another from Grant, the native. Result, three teal. "Fetch 'em here, Brant," and the ducks are soon laid at our feet. The snn breaks through the mist and discloses at the far end of the lake a white and black mass of ducks. Grant starts after them, soon a puff of smoke stirs them up, and in a confused mass the ducks circle over with whistling wings and now and then a discordant quack. Ducks everywhere, over water, under water and in the air; and then with a last turn and quack they betake themselves to the waters of the Pacific, leaving behind five to my gun and eight to Grant's. One after another the fowl are laid at my feet by the spaniel, whose every nerve is quivering with excitement. Thirteen ducks, and plump ones too, conjure up before my eyes the inviting picture of a snowy table whose centerpiece is a savory redhead.

Ducks wheel by singly and in pairs. Plump little butterballs and spoonbills now and then beat the air with their whistling wings. Unaccountable misses afford me counteraction for brilliant shots; but nevertheless thirty-five ducks will make a man feel greater in importance than many another thing; and then comes the after pleasure of talking over the events of the day's sport, with my dog lying at my feet and occasionally looking up when he is called by name and praised for his obedience and skill in bringing a duck out of the tules (those banes of a retriever's life); amid the clouds of fragrant smoke arise the images of many a lusty dck who had beaten his last tattoo on the bosom of his mother water. B. E. B.

St. Louis, Mo.

Natural History.

UNUSUAL NESTING SITES.—II.

[A paper read Dec. 5, 1887, before the California Academy of Sciences, by Walter E. Bryant.]

THE entire material, with one exception, which comprises the present paper, has been received in brief notes or dictations from Messrs. W. Otto Emerson, A. M. Ingersoll and Chas. W. Knox, leaving the part taken by the author simply that of editor and compiler. The initials following the cases cited are those of the observers, to whom my thanks are due for communicating their interesting field observations.

Arkansas Flycatcher—*Tyrannus verticalis*.—A nest was found built upon a fence-post more than half a mile from the nearest tree. It was secured from observation on one side by a board nailed to the post and projecting above it. (A. M. I.)

Black Phoebe—*Sayornis nigricans*.—A pair built for two consecutive years in a well four feet below the surface. The first year a second nest was built after the first had been taken. (W. O. E.)

Baird's Flycatcher—*Epidonax diffeilis*.—A nest was built at the bottom of a hole five inches deep, made by a red-shafted flicker in a live oak. (A. M. I.)

Blue-fronted Jay—*Cyanocitta stelleri frontalis*.—A strange departure from the usual habits of jays was noticed in Placer county, Cal., where they had persisted in building within the snowsheds in spite of the noise and smoke of passing trains. The destruction of their nests by the men employed on the water train, which makes two trips a week through the sheds during the summer, sprinkling the woodwork and tearing down the nests of jays and robins with a hook attached to a pole, seemed not to discourage them. So accustomed do the jays become to the passing of trains, that they will often remain on their nests undisturbed.

In one season more than two hundred nests of jays and robins were destroyed, so the trainmen say, between Cisco and Summit, a distance of thirteen miles. Some of the nests were but partially built, others contained eggs; these latter ones having probably been overlooked on previous trips.

The nesting of the jays within the snowsheds is, so Mr.

Ingersoll supposes, to avoid the persecution of squirrels. None, he thinks, however, succeed in rearing a brood, for of more than thirty nests which he found, nearly all were uncompleted. (A. M. I.)

American Goldfinch—*Spinus tristis*.—In 1884 a grove of young willows that had been occupied the previous season by a colony of tricolored blackbirds was found deserted by them. Many of the blackbirds' nests still remained in forks of the willows from four to ten feet above the marsh. Six of these old nests were in possession of American goldfinches. The present tenants had loosely filled the nest about half full of cat-tail down and had for aed only a slight hollow for the nest proper. Some were found with eggs and in others there were "birds in last year's nests." (A. M. I.)

Samuel's Song Sparrow—*Melospiza fasciata samuelis*.—A nest containing three eggs was found in a round oyster can which had lodged sideways among some driftwood in a willow tree. (W. O. E.)

California Towhee—*Pipilo fuscus crissalis*.—A pair constructed a nest in a five-gallon kerosene oil-can that lay on its side in a shallow ditch. Part of one end of the can had been cut open, giving access to the birds. (W. O. E.)

Barn Swallow—*Helidon erythrogaster*.—A kind-hearted postmaster in the country nailed a shelf-like board against the porch above the entrance to his office, intending to give the crimson house finches a place to build. A pair of barn swallows took possession of this arrangement and built on top of it a nest composed of straw and feathers. This is the only instance I have known where this species used no mud in the composition of its nest. The position of this nest was less remarkable than the peculiarity of its structure. (A. M. I.)

A barn swallow's nest was built a few feet below the surface of a well which was in daily use, water being raised by means of a windlass and bucket. The weight of the growing young became so great that it broke the nest from the moist ground, and the young were drowned. A second nest was speedily begun upon a shelf of rock, nearly thirty feet below the surface, and not high above the water. Unfortunately, the result of this second attempt was not learned, for it would be exceedingly interesting to know how, if at all, the young were brought to the surface from so great a depth. (C. W. K.)

The nesting of another pair of these swallows was illustrative as much of persistency in nest building as it was of the unusual site which they eventually chose, prompted by repeated molestation. Three nests were built in succession; the first, containing five eggs, was taken from a partially abandoned mining tunnel, ten feet from the entrance; later, a second nest and five eggs was found, and taken nearly twenty feet from the entrance of the same tunnel, but the third nest was happily not discovered until the eggs had hatched. This nest was about fifty feet from the entrance, and under cover of partial darkness the persevering pair had built and reared a brood. The finding of the last nest happened by chance. Mr. Knox had descended a shaft connected with the tunnel and was passing along the level with a lighted candle when he saw a bird fly from close before him, and aided by the light which he carried, the nest, with four large young, was found, but left undisturbed. (C. W. K.)

Tree Swallow—*Tachycineta bicolor*.—A few years ago I found a nest with young in a crevice under the projecting and decayed deck of a lumber lighter, moored in Oakland Harbor.

Hutton's Vireo—*Vireo huttoni*.—A pair of vireos built this year in the outer branches of a live oak, only a few feet above the exhaust pipe from a steam pump, where at times they were compelled to suspend work, owing to the dense vapor which enveloped them. Four eggs were laid in this nest. (C. W. K.)

Long-Billed Marsh Wren—*Cistothorus palustris*.—A conspicuous nest, containing eggs, was woven among the almost leafless branches of a young willow, five feet above a fresh water marsh. The false nests were built as usual, but in the coarse grass near by. (A. M. I.)

GROUSE AND MALLARD PLUMAGE.

Editor Forest and Stream:

I have been much interested in the articles in the last and preceding numbers of FOREST AND STREAM on the sex markings of grouse and plumage of the mallard drake, subjects to which I have myself paid considerable attention, and a few additional remarks may be not unacceptable to your readers.

The examination of a very large number of specimens of ruffed grouse from almost every part of North America (as far north as Labrador and the Yukon Valley in Alaska, south to Georgia and California) has shown me that while females are decidedly smaller than males, with the ruff much less developed, the markings somewhat less sharply defined and the colors not so strongly contrasted, specimens not infrequently occur which it would be impossible to determine the sex of without dissection, there being considerable variation in both sexes, i.e., some females (perhaps only very old or well fed birds) being larger, etc., than certain males (possibly younger or "runty" individuals). For example, I once examined, in the flesh, a very fine bird, killed at Laurel, Maryland, which I was sure was a male until dissection showed it to be a female.

As to the dark band across the tail, it is quite certain that no dependence whatever can be put in its continuity or interruption on the middle feathers as a sexual character. I cannot say that I have observed a perfectly continuous band in any female, but I have seen many fully adult and in every respect well developed males in which it was either more or less broken or else wholly interrupted on the middle feathers. This variation, I would remark, applies to all the local or geographical races into which the species is divided.*

Coming to the subject of the summer plumage of the mallard drake, it has long been known, in Europe at least, that the male not only of this species but of others also, assumed during a portion of the summer a plumage hardly to be distinguished from that of the female. The only question has been as to whether the changed plumage was "nuptial" or "post-nuptial;" that is, whether the male assumed it at the beginning of the breeding season or not until after the female had commenced incubating or the young had appeared. This summer plumage of the mallard drake, as well as of the

* I make this observation for the reason that, some years ago, when these races were considered distinct species, this feature was mentioned as a specific character.

male gadwall, pintail and old squaw, are described in the "Water Birds of North America" ("B. B. and R.," pp. 492, 506 and 512 of Vol. I., and 58 of Vol. II. respectively), although, except in case of the last, on account of not having specimens at hand, the descriptions are quoted from Dresser's "Birds of Europe." In my recently published "Manual of North American Birds" the summer plumage of the male of the following additional species is described (on pages 92, 93, 95, 102 and 107 respectively), mostly from specimens in the National Museum collection: Blue-winged teal, cinnamon teal, widgeon, blackhead and harlequin.

I am not prepared at present to state how nearly universal this change of plumage in the male may be among the ducks of North America, but I think it will be found universal among the river ducks, in which the plumage of the sexes differs at any time, and I also have strong reasons for suspecting it in certain others, as the broad-billed Fuligula, the golden-eyes, eiders and mergansers; but as to these the information which I have is simply suggestive. ROBERT RIDGWAY.

WASHINGTON, D. C., Dec. 26, 1887.

A FAMILIAR GROUSE.

Editor Forest and Stream:

"Nor'east's" account of the "Queer Dick of a Woodcock" in FOREST AND STREAM of Dec. 15, calls to mind the capture, in a similar way, of a young grouse, about three-fourths grown, in September last. While walking along a wood road my spaniel flushed several grouse, one of which flew swiftly past within reach of my cane. It alighted near the path in some bushes, and endeavored to hide in a small pile of brush. Reaching through the dry twigs I drew it out, as perfect, apparently, as ever bird was. Holding it in my hand stroking its head and neck, it exhibited no fear except at the lively actions of the cocker, at whose behavior it showed considerable uneasiness, craning its neck to look over my arm at the excited dog. I sent the latter off into the woods, and then the bird became quiet enough, making no effort to regain its liberty, and seemed in no hurry to take its flight. Upon being gently urged it took wing, but immediately settled down again a few rods away, and quietly submitted to recapture and further caressing. I was strongly inclined to take the bird home and see what would become of it in confinement, but finally decided to release it to regain its companions. Placing it on the limb of a small tree, it flew thence to the ground, elevated its ruff, and, with head turning from side to side, it daintily lifted its feet high over the leaves and went its way, a veritable prince of the woods.

When a boy I occasionally caught grouse chicks in New Hampshire, trying, always unsuccessfully, to raise them in confinement, but never before have I caught, in my hands, a vigorous, nearly full-grown grouse, nor have I ever known of a like incident occurring elsewhere. The bird seemed little shyer than ordinary domestic fowls, and was a fair match for "Nor'east's" strange woodcock. NORTH CHELMSFORD, Mass. L. H. S.

A SWIMMING RUFFED GROUSE.—Albany, N. Y., Dec. 18.—Editor Forest and Stream: A few weeks since at dusk, as I was passing through a railroad cut, accompanied by a collie, the familiar "whir-r" of a ruffed grouse attracted my attention. Quickly looking ahead, I saw the bird flutter along the ground. A word, and the dog had it under his paws. Examining it as well as the uncertain light would permit, no marks of a gun could be found. As a barbed wire fence is above the cut, and the telegraph lines are still higher, it is possible that in flying for a piece of woods across the track, the bird struck one of these. It being unhurt, save by the absence of feathers from the tail and wings, which hindered its flying, I carried it into the woods and set it down; with a peculiar cry it hid beneath the leaves. The next morning I returned to the woods and was entering a little gully preceded by the dog, when the grouse, with extended neck and wings, ran past, followed by the dog. Calling the dog I headed the bird off, and keeping a short distance behind, observed closely its movements. Running along the track a few yards it turned down the embankment, at the base of which runs a large creek. Pausing an instant, the bird deliberately jumped into the water and swam about six feet from shore; but, apparently finding the water too cold, or doubting its ability to reach the opposite bank, returned. Its swimming seemed not at all labored, and was quite as rapid as that of a duck. Catching it, I brought it deeper into the woods and freed it, when its actions of the previous evening were repeated.—NATURA.

THE WOODDUCK IN WINTER.—Cold Spring Harbor, N. Y., Dec. 28.—Editor Forest and Stream: In September a drake woodduck came among my flock of woodducks, teal, etc., and remains there yet. We can easily distinguish him by his flying from one pond to another, something that the pinioned birds cannot do. He is as tame as the rest of the flock, coming up to the grain box to feed with the others within 30ft. of where a gang of carpenters are at work on the new fish hatchery. At times the pond has been partly frozen over, and it is exposed to the cold storms coming across Long Island Sound. I had expected to miss the bird long before this, as I never knew of a "summer duck" remaining here through the winter, voluntarily. One peculiarity of these birds is their seeking shade on the coldest day. Often my flock can be seen under the south bank of the pond when a cold north wind is blowing, sitting in the shade. On cloudy days they will play on the water, diving and chasing each other, but on bright days they are seldom out in the sunshine. The probability is that this wild bird will now remain with the flock all winter.—FRED MATHER.

THE MUSKRAT IN DELAWARE.—The muskrat is naturally a wary animal, but when pressed by hunger it is quite venturesome and often vicious when disturbed. They seldom exceed 5lbs. in weight, in this State. They live in burrows or hollow logs, on the margin of streams, seldom venturing out for food until nightfall. On the marshes their towns resemble the famous "dog towns" of the western prairie. They are found both near salt and fresh water. They subsist chiefly on water mollusks. They are most numerous in Kent county. Many persons living near the marshes bordering on the Delaware Bay, buy large quantities of marsh land and devote their time solely to muskrat farming. The sale of the hides when cured is quite remunerative, while the flesh finds a ready sale in the local markets.—DEL. A. WARE.