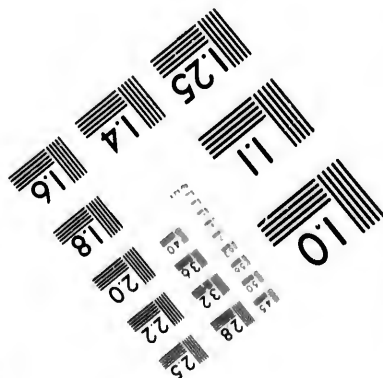
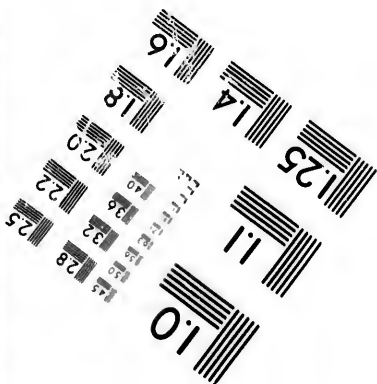
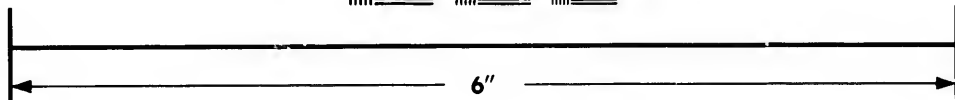
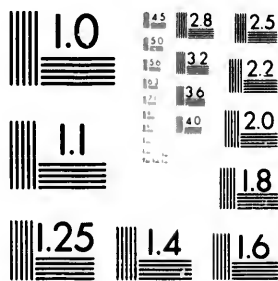


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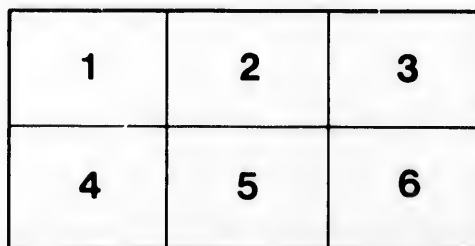
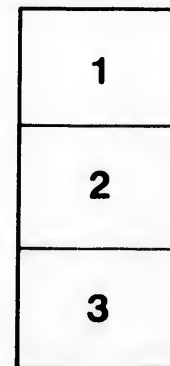
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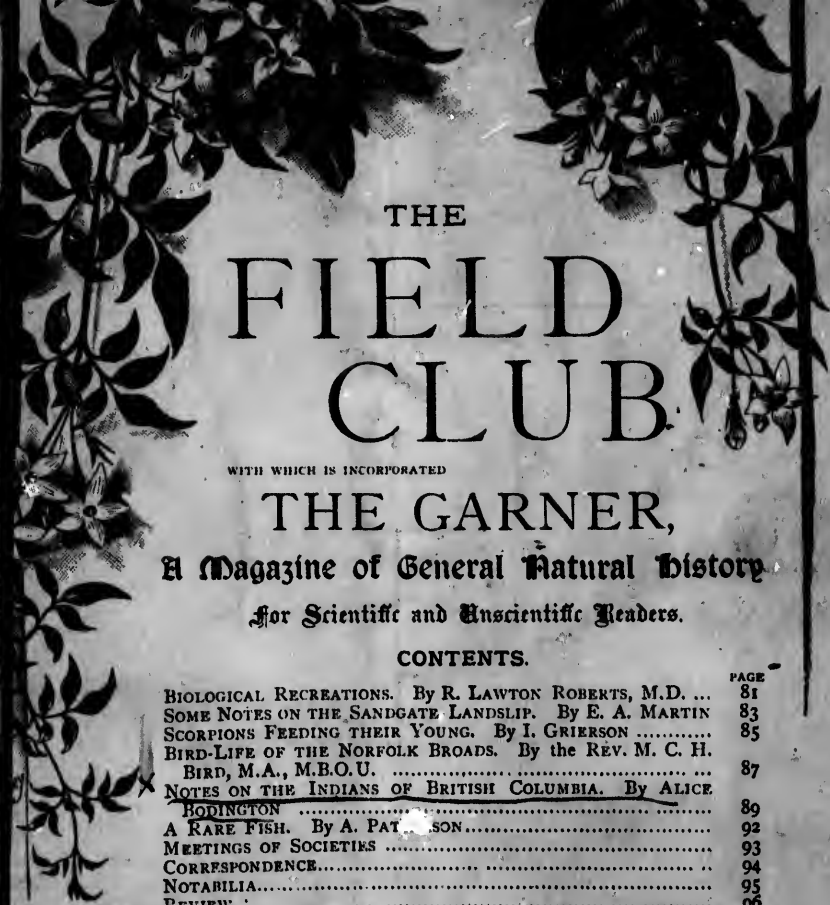
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tuted a glass egg in its place. But the old bird noticed the difference and refused to be imposed upon.

Upon an average of some twenty years' observations, I should say that egg-laying is general by April 10. In 1888 there were none at Winterton before April 19. The young flock fly by July 12, and foreign or more northern migrants begin to arrive here during the last week of September.

The average weight of birds that I have killed during the winter has been just 10 oz., and the longest crest I ever measured was just over 4 inches.

Their time of evening flight is regular to a moment, as two quotations from my note-book will show: "January 2, 1878, 4.24;" "December 2, 1888, 4.20 p.m." Both observations were taken at the same spot.

Sometimes these birds are easy enough to shoot; at other times they twist and topple about in a most unaccountable manner. Use No. 8 shot, hold just in front, and pull directly the gun touches your shoulder; for if you stop fiddling about to look along the barrels, shut your eye, and aim, the two big eyes of the plover will twig you to a certainty, and his eccentric gyrations immediately practised will, in the uncertain twilight, defy your best endeavours to double him up.

I know it is very unorthodox, but, nevertheless, I prefer a black to a golden plover on toast. True, I have not tasted anything like an equal number of the two species; but all I can say is that the majority of those of the latter that have been partly discussed by me must have been feeding upon the sea-coast, which is proverbially supposed to impart a superfluous richness to the flesh.

(To be continued.)



NOTES ON THE INDIANS OF BRITISH COLUMBIA.

BY ALICE BODINGTON.



THE Indians of the northern frontier of the Pacific coast had excited little interest in my mind till, in reading Dr. Isaac Taylor's "Origin of the Aryans," the thought occurred to me: "Here we are living in the midst of a people who thirty years ago had not emerged from the Stone Age. Will not their manners and customs, their imple-

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ments and weapons, their ideas of property and mode of trading, help to give one a living idea of Neolithic Man?"

I had the good fortune to meet with two gentlemen, occupying positions under Government in the province, who were eye-witnesses of what they described to me. So recently has British Columbia been colonized, that the very settlers who originally gave names to places are still living, in many instances, at those places.

Well, the Indians in this province some thirty years ago were still living much as the primitive "Kitchen-midden" people of Europe seem to have done; and, in districts removed from white influence, they are still little removed from primitive ways. Enormous deposits of shells are found at the mouth of every little creek and along the shores and harbours, representing the remains of many hundred years of savage feasting. I have seen the rings counted on a pine-tree which had been growing on one of these mounds giving a life of two hundred years. But I have read of many trees rooted on shell mounds in the forest between Vancouver and New Westminster which showed a growth of treble that time. At Hammond a flourishing nursery garden and orchard have been established by the river bank, on the site of an extensive shell mound, which has served as an Indian battle and burying ground as well. Only the skulls are found belonging to different tribes—coast and river Indians respectively; the latter with heads of natural shape, and the former artificially flattened. Besides the skulls, all sorts of weapons are found; *those which were likely to be preserved in carefully polished stone*, and those more likely to be lost left in the rough state. Flint arrow-heads, for instance, are unpolished. But the great stone mallets, stone mortars, pestles, knives, and short swords* are very carefully polished.

Mr. Anderson† informs me that the great "clam bakes" which led to the accumulation of these mounds were managed thus.

An excavation some five or six feet deep was made, stones were made red-hot and rolled into the hole; on these were placed leaves, then the clams or other shell-fish, more leaves, and earth to cover the whole. Wild roots and vegetables were treated in a similar manner, only they were left to their subterranean cooking for a much longer period. Food thus prepared keeps all its aroma in an unrivalled manner.

* The weapon I call a "sword" is about twelve to fourteen inches long, shaped so as to form a handle in the one piece, often with the rude representation of a face.

† J. R. Anderson, Esq., Statistician to the Ministry of Agriculture, Victoria, B.C.

Like all primitive men—at least, all I ever heard of—the Indians of British Columbia depended chiefly on animal food for subsistence. Those along the coast and river deltas had an unlimited supply of fish, which they were most skilful in catching by all sorts of ingenious contrivances. Great lines fifteen to twenty-five fathoms long were made for deep-sea fishing from a giant kelp (order *Laminariacea*). In the "Upper Country"—that is, amongst the four great mountain ranges of British Columbia—the people lived on the flesh of wild animals, and, the supply of these latter often running short, a system of barter was set up with the coast Indians, furs being exchanged for dried fish and oil.

The system of barter which must have existed in primitive Europe has often been commented on—the process by which the amber of the Baltic travelled for many hundreds of miles from its native home; and Atlantic shells and horns of the Polish Saiga antelope were found amongst the cave-dwellers of Périgord in the Reindeer period.

Perhaps the most remarkable article of inter-Indian barter was the oil of the onlachen, a most delicious and delicately flavoured little fish. This oil was sent in wooden boxes, ingeniously put together with wooden wedges (for iron nails were unknown), and it traversed the whole breadth of the Rocky Mountains, and was found beyond them on the banks of the Arctic Mackenzie. I asked how the trade was carried on where so many different languages had to be dealt with. Mr. Anderson told me that every tribe through which the onlachen oil was sent possessed interpreters who understood the language on each side; much as if English goods going to Russia required interpreters speaking English and German in France, and others speaking French and Russian in Germany. Trade debts were always scrupulously paid; a point of ethics probably due to the necessity of having to rely on an unfailing supply of fish and oil from the coast in the severe winters of the Upper Country.

No domesticated animals but the dog and horse were known. The horses were in a semi-wild condition, and poor specimens of their kind: the dog was not the veritable "friend of man" that he is with us. He was generally a skulking, snarling cur, living on the refuse of human habitations, hunting sometimes with man and sometimes on his own account. The relationship was one of some profit, but no affection on either side.

Wild animals were skilfully shot with arrows, or snared, or caught in pitfalls studded with sharp stakes. The disused pitfalls, concealed amongst long grass, are still a source of danger in the woods. Regular battues were organized to drive the larger game, some of which, as

is well known, count amongst their numbers the noblest specimens of sheep and deer; the cariboo, or American reindeer; the mountain sheep and snow-white mountain goat; and, far north, the musk-ox.

(To be continued.)



A RARE FISH.

BY A. PATTERSON.



HAD a very fine specimen of the little-known Pearlsides (*Maurolicus Pennantii*) of Yarrell brought me on March 5th, which had been picked up on the beach four miles north of Yarmouth on the day previous, after a strong north-easterly gale, which had thrown up a great quantity of marine algæ, and licked off huge slices of the marram-covered sandhills. Under the name of Argentine, Buckland ("British Fishes") gives us an excellent representation of this fish, rightly enough informing us that it is "generally found in the cold months of the year, thrown ashore entangled by seaweed in stormy weather."

The specimen above alluded to was *minus* most of its delicate scales, having been brought home by my friend in his *waistcoat pocket*, for want of a better conveyance. It would be well if field naturalists whose strolls lead them by the seaside would make it a practice to carry in the waistcoat pocket not only a strong lens, but a small wide-mouthed phial half-filled with pure spirits of wine; for who can tell what may be met with? Most unexpectedly have I fallen in with Pearlsides myself, and having on that occasion but a small brass matchbox, which I carried for the selfsame reason, although I carefully padded the pretty creature with the softest seaweeds, it lost much of its beauty, which might have been saved had I been properly prepared. On no account should methylated spirits be used, as it hardens specimens into leathery consistency, and shrinks them. Strangely enough that specimen, which I found on April 1st, 1889, came ashore alive in glorious weather, in the seaweeds enclosed by a seine or draw net. Three were found, shrivelled and dried, on a very bare beach after high winds, on February 3rd, 1890.

Pearlsides, in the present instance, measures one and three-quarter inches in length; my first—and the first recorded for the east coast—was nearly half an inch longer. The sides are silvery, the head and body being somewhat herring-like in appearance, a

Island, on which some Chinese oyster-shells had been thrown. Of these shells I have seen an entire wall of a garden made, on the other side of the river, near Canton. The shells were in substance like ours, but larger, longer, and narrower at one end. The Chinese call them *O-a* or *O-ha*." I may remark that *Hó* is the Cantonese and *Hau* the Mandarin pronunciation of the character for oyster, which is composed of the radical for reptiles, joined to a second character for phonetic purposes, showing us by the combination that some kind of animal is intended whose name must be pronounced like that of the phonetic, viz., *Ho* (a porcupine).

On Christmas-Day of the same year the writer remarks: "Oysters, which the Chinese call *Hao*, were sold quite fresh to us. It was a different species from that whose shells have been afore-mentioned; they were rounder, five or six or more of them grew together, and are extremely difficult to open. For the purpose of opening, the Chinese always have a proper piece of iron about them when they sell oysters. Some of them were fastened to great stones, and it was plainly visible that they came out of a clayey bottom. They were very like our oysters, but larger, in particular the animal in them, which the Chinese take out, put into water, and thus sell them to their countrymen without the shell." Such a cluster of oysters as is here referred to, or oyster-spat, as it is called in its early stages, is known in Canton as *Hó shán*, or an oyster mountain.

Next to the oyster for economic purposes come the cockles, whelks, and mussels, all of which abound in the Pearly River. I have notes and records of a dozen or more species, and several varieties of these shells, the animals of which are largely employed by the Chinese as food; while the calcareous dwelling is also of value for other purposes. On this subject I endorse the following remarks of my lamented friend, the late Archdeacon Gray, who says: "In the Canton River there are many extensive cockle-beds. These are restocked twice annually, that is, in the first and again in the twelfth month. At these periods large quantities of young cockles are brought from the district of Tung-kún and other places to Canton. Upon being cast into the beds especially set apart for them they soon increase in size; and in the seventh month of the year they are removed and sold in large quantities as a great delicacy. The beds are strictly preserved, watchmen being at hand by day and night, not only to drive away poachers, but all kinds of water-fowl. The cockles, however, are often washed away in vast numbers by the strong tides (currents), for which the Canton River is famous. Cockles, as well as oysters, are preserved by the Chinese

by means of salt. As a rule, however, cockles are boiled and eaten when fresh. As the water in which they are boiled is supposed by the Cantonese to possess certain medicinal properties, it is used as a wash for the body by persons suffering from cutaneous diseases, and by those in particular who are recovering from small-pox. At the celebration of the New Year festivities cockles are in great demand, being regarded as lucky food. Lime is also made of cockle-shells, and when mingled with oil it constitutes a most excellent putty, used for cementing coffins, and in forming a surface for the frescoes with which the gables of temples and private residences are ornamented."

(*To be continued.*)



NOTES ON THE INDIANS OF BRITISH COLUMBIA.

BY ALICE BODINGTON.

(*Continued from p. 92.*)



ALTHOUGH no cereals or vegetables of any kind were planted, thus again paralleling the early conditions of primitive European life, advantage was taken of the native resources of the country. Berries were dried for winter use. But the most useful vegetable food was afforded by a bulbous plant (*Camassa esculenta*), bearing a hyacinth-like spike of beautiful blue blossoms, much prized by florists. It flourishes best in a rich black loam. In the absence of anything like a spade, the bulbs were dug up with long, sharp, slightly curved sticks. Wild onion and wild sunflower roots were also eaten, and all such food was cooked in the kilns before mentioned. The country is rich in berries: wild currants, gooseberries, and two kinds of raspberry unknown to us in England, etc.

One is reminded of the acorns and water chestnuts of prehistoric Europe.

It is curious and interesting to see the ingenious contrivances resorted to in the absence of a knowledge of metals: the onlanchan oil boxes with their wooden wedges; the curved sticks for digging roots; the canoes, many of very large size, hollowed and shaped by fires built without and within, and finished off with stone mallets; the arrows with barbs of stone or bone; the fishing spear, sometimes twenty feet long, with its bone point strengthened by flat pieces of

wood; the bone awls and needles; and the strong traps, where steel was replaced by toughened sinews. Baskets were so closely and carefully plaited as to become water-tight, and serve as buckets. Some progress had been made in the textile arts, for blankets were woven which Mr. Anderson speaks of as "veritable works of art," those of the more northern tribes having a pattern closely resembling one familiar in ancient Egypt. The colours were usually red and black. The art of dressing skins was particularly well understood. The men had gone far beyond the stage of fastening skins with thorns; the softly dressed leather was fashioned into tunics, trousers, caps, and mocassins, sewn together with bone needles, with sinews for thread. The women rejoiced in a kind of petticoat I never heard of elsewhere. They kept a breed of dogs with long silky hair. Long fringes were made of this hair, and twisted round and round the body and limbs, reaching as far as the knee. With the introduction of English woollen goods, this breed of dogs has been allowed to die out.

The people were by no means without amusements. Dancing of an amazingly vigorous kind took a leading place. There were horse-racing and canoe-racing; feasts amongst the men, and foot races between the boys; long yarns of story-telling over camp-fires, and not a little gambling. So one may hope the cave-dwellers in Europe may also have had their amusements, and that their life was not necessarily so dismal as we are apt to imagine it.

Courtship and marriage were simply managed affairs. The enamoured swain merely went to the lodge of the object of his affections, and stared at her in speechless admiration for a day or two. He would then make an offer of some object of value, a horse or a canoe, to the girl's father, and, the offer being accepted, led his bride without further ado to his own tent, and they were considered man and wife. Conjugal infidelity seems to have been rare before the coming of the whites. I have seen a rustic courtship in Suffolk carried on with much the same commendable silence as in British Columbia. Indeed, one Suffolk wooer, after some hours of silence in the company of his beloved, was surprised into articulate expression, and uttered these remarkable words (on the *lucus a non lucendo* principle): "How fast the time *du* pass when folks is a-laughin' and talkin'!"

One or two customs remind one of Central Europe and Asia at this day. MacGahan, in his "Campaigning on the Oxus," speaks of his surprise at seeing smoke coming apparently out of the depths of the earth on the snow-covered steppes, whose inhabitants were thus

protecting themselves from the fierce blasts of winter in underground dwellings. So, too, did the Indians of British Columbia, especially in the upper country, descend into what were known as *keekwillies*, great holes in the earth capable of containing several families and their dogs. A hole was made at the top, through which passed a pole arranged on the principle of the bear's pole at the Zoo, up and down which the people climbed. In the summer permanent houses were inhabited, each containing several families, much as one reads was the case in the early Welsh houses. Each family had its own share of the dwelling. But in the fishing season the houses were abandoned, as they still are, for tent life. You see a family of Indians going from place to place on the river bank to fish, and taking all their earthly possessions with them—their tent cover and poles, blankets, iron cooking pot, and fishing hooks and lines; but everything bought, nothing made by themselves any longer, with the exception of a few baskets and mats. The bath hut, in which steam was generated by throwing water on hot stones till an almost intolerable temperature was reached, resembled the celebrated "Russian" bath. Fire was procured in the usual savage fashion by twirling a stick rapidly round; but was carried about wherever practicable, as even the Indians dreaded the long and tedious process of procuring it.

Of the Indians as they appear after their contact with civilization there is little interesting to relate. Though they are protected by Government in every possible way, they are rapidly dying out. A few days of lazy fishing will procure the coast and river Indians enough for their simple wants; they have forgotten their ingenious arts and manufactures with the influx of English and American goods. They need not even plant the potatoes for which they have acquired a liking. "Why me plant potato?" they will say; "white man plant potato for me." They can buy all they require with the price the numerous canneries will pay for their fish. There are exceptions, survivals of the fittest. Some of the Indians work steadily at the saw-mills and canneries; some even claim their rights of full citizenship, cultivate their land, and—I have been told with bated breath—grow rich enough to have white men working for them! An Indian can always claim his right to citizenship when he has shown his fitness for it. He then gives up all share in the well-meant but demoralizing "reservations," all right to pauperizing independence; he can assume a surname, vote, and own land by sale or pre-emption.*

* By pre-emption, a settler lives on land, and making certain improvements, becomes its owner on paying a dollar per acre.

These cases, rare as they are, are very satisfactory. Nor can it be wondered at that few members of a race hardly emerging from its Stone Age should be able to take advantage of the complex civilization of the Europe of to-day.



RED AND WHITE BUTTERFLIES, AND "PROTECTIVE COLOURING."

BY M. R. EWOR.



THE following note may be interesting, as it seems to illustrate the theory of Protective Colouring, so much in vogue nowadays.

All through the sunny months of March and April of this present year of grace the writer has been much struck by the unusual number of butterflies, fluttering over a certain sunny herbaceous border in his garden. White ones there have been galore, the handsome sulphur-coloured ones, and that dear old friend of our childhood, the Red Admiral, by fours and fives at a time. The border thus favoured slopes south, and is always warm and sunny, being protected from the cold winds by a high laurel hedge to the north and east. The soil is a yellowish clayey loam, baked nearly white by the long-continued drought. But through this whitish earth a reddish brick-coloured clay crops up in patches here and there, about a foot or so square. And on these patches of reddish clay, cropping up through the whitish loam around it, some of the Red Admirals might always be found, resting in the sunshine as though half asleep, sometimes with their wings outstretched, sometimes with them tightly furled, or lazily opening and shutting them at intervals. When they were upon the ground, unless the eye caught the movement of their wings as the insect folded or opened them, it was almost impossible to distinguish the butterfly from the ground on which it rested, so exactly did the red colouring of its extended wings, with the sunshine upon them, match the brick hue of the soil. When the wings were folded so that no red was visible, the dark brown underpart was just the shape and colour of the little points of dark shadow cast by the small rough lumps of clay on the bed.

The white or yellow butterflies I never saw resting thus upon the ground of this herbaceous border. They were to be found generally on the clumps of white allison, or on the patches of bright yellow or purple allison which succeeded it, and presented