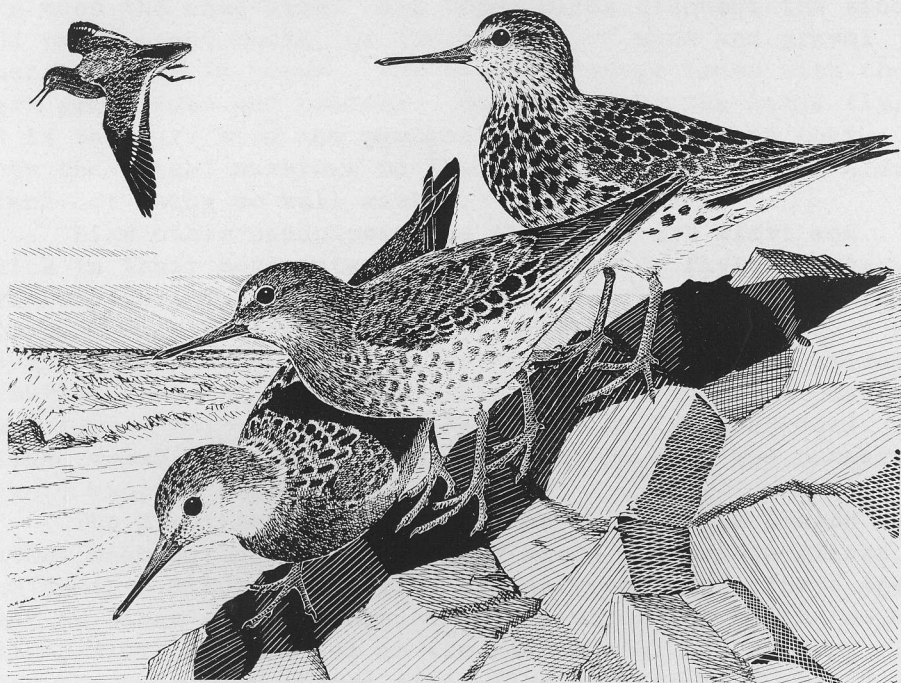


The
VICTORIA
NATURALIST

Vol. 13, No. 6

December, 1956



Aleutian sandpipers.

(F. L. Beebe.)

Published by the
VICTORIA NATURAL HISTORY SOCIETY
Victoria, B.C.

OUR COVER

Victoria waterfront is well supplied with ocean promontaries, bays and beaches. Situated as it is on the south east tip of Vancouver Island it affords an ideal winter resort for those hardy birds that come each autumn from far northern coasts. Aleutian sandpipers come to us during the latter half of October each year and stay until the beginning of April. With us they winter in little groups and consort with turnstones and surf birds, particularly the former and are much the same size. All these birds frequent the wind and water swept rocks, or the beaches of sand and gravel when the tide is lower. The winter plumage tones with the dark gray rocks and beaches. However, when the birds fly, it is the surf bird and particularly the turnstone that show the bright markings on their wings and back, the Aleutians not being so well marked.

Like other sandpipers the Aleutians are alert and quick in their movements whether feeding or flying. There are considerable rest periods during which an observer can approach to make comparison with other species. Their color is blue-gray above, while turnstones are dark and streaked. Aleutians have yellowish to olive legs while turnstones have dark legs. Both species are markedly smaller than surf birds, which are stocky with stout yellow legs and comparatively shorter beaks.

The Aleutian sandpiper's range is from the Oregon or rather Washington coast in winter north to Western Alaska and Eastern Siberia in spring and early summer. There they nest in bleak surroundings, in the wind or fog of the mountains, flats, hollows, or on the sea shores. At nesting time the male bird hovers pipit-like singing at 30 or 40 feet above ground. There is also a loud musical call from rock or hummock above the tundra. They are said to have a bleat vocally produced reminiscent of the sound of a snipe as it hurtles through the air in a courting dive. Nests are about three inches wide and two inches deep, set into the moss, lined with leaves, straws and feathers. Generally four eggs are laid. The food inland is of beetles, flies, etc., or on the sea beach sand fleas, molluscs and crustaceans.

J.O. Clay.

BY-THE-WIND SAILORS

G.Clifford Carl
Provincial Museum, Victoria, B.C.

Jelly fishes stranded on the beach above the tide line receive no more than a passing glance but unknown objects arouse interest which mounts as the numbers increase. Such was the case this spring when hundreds and thousands of most strange transparent objects appeared along the shore line of local beaches during mid-March. Though they were skeletons of a kind of jelly fish they were not usually recognized as such because of their most puzzling structure.

Each object consisted of two parts, an elliptical or oval base about $2\frac{1}{2}$ inches long and a roughly triangular fin set at right angles to the base but oblique to the longitudinal axis. The basal part enclosed a series of concentric tubes usually containing bubbles of air so that it acted as a float and the whole structure had the appearance and texture of cellophane.

To some of the specimens bits of purple-coloured tissue still hung giving a clue to their origin, the bright-hued jelly fish known as *Velella* or "By-the-wind Sailor". This creature frequents the open Pacific usually some miles off shore and extending from California northward to Alaska and west to Japan. The jelly fish is in reality a colony of individuals somewhat similar to the famous Portugese Man O'War of the south Atlantic. In such an assemblage division of labour or specialization is developed to a high degree. Some individuals are concerned only with capturing food, some provide locomotion, some form the float or sail, some are reproductive in function and some are defensive. Altogether, they form a compact and well organized group.

Velella occurs in immense numbers off our coast. Sometimes the ocean is coloured pansy-blue by their presence over many hundreds of square miles. During calm periods they float at the surface where the projecting sail catches the breeze to provide some movement. At other times they may sink to a depth of several feet where they drift with the current. Occasionally numbers of them are driven ashore where they are soon killed in the surf. Their skeletons persist long after the flesh has dropped away and it is these objects which attract attention when found. In 1946 and again this year, windrows of them collected on Victoria beaches where they soon came to public notice.

Velella were first reported this year on March 2 by Major G. Ross Davidson who found them at Becher Bay. Other

reports soon came in from Otter Point and other parts of Sooke waterfront and a few days later skeletons began to appear along Dallas Road beach and east at least to Willows Beach. They were not as numerous as in 1946 but still abundant enough to attract the attention and excite the interest of beach visitors for several weeks.

No others were reported until September 15 when thousands were found on the beaches at Hope Island near the north end of Vancouver Island according to Miss Helen L. O'Malia of the Radio Station at Bull Harbour who wrote at the time and sent specimens for identification.

Then in mid-October when the Museum party visited the Queen Charlotte Islands on board H.M.C.S. Brockville through the courtesy of the Royal Canadian Navy we saw large numbers of skeletons again. Scattered individuals were first sighted on the morning of October 18 some miles south of Cape St. James in Queen Charlotte Sound following a very heavy gale. Off Kunghit Island, the southernmost in the Queen Charlotte group, we saw many more, all dead but some with bits of purple flesh still clinging to the float and as we rowed ashore to Anthony Island we passed through several concentrations of these floating skeletons. On the beach too, we found many skeletons, some of which having probably been there for several weeks.

It is not surprising that a creature so abundant and widespread as *Velella* should appear in numbers along our beaches. If it were not for the skeleton which is extraordinary in appearance and relatively long lasting the presence of these animals would not attract more than a passing glance. Nevertheless, it would be interesting to know how far these remains are carried along our coast line during these periods of superabundance.

FUNGUS FORAY

Under the leadership of Prof. C. W. Lowe a party of seventeen (including two lively juniors) went to Thetis Lake Saturday, November 3, in search of fungi. The sky was overcast but no rain fell and the hunting was good - more than fifty species being found.

These ranged in size from the giant clitocybe (*Clitocybe gigantea*) whose cap-diameter may be ten inches or more, to that tiny species of reddish mycena (*Mycena haemotopa*) measuring less than three-quarters of an inch. Some of the other large-sized species were:- the russulas, especially *Russula alutacea* having a dark red cap and yellowish gills; the pine

destroyer (Fomes pinicola) which in spite of its name is a general feeder; and the varnished bracket (Ganoderma oregonensis) a handsome polished red-brown "shelf" growing on a Douglas fir stump. Near the point of its attachment to the stump a fine clump of tufted collybia (Collybia acervata) thrust out at least a dozen of its flesh-coloured caps.

Other smaller species included the fragile, translucent white marasmius (Marasmius candidus), the little-wheel (Marasmius rotula), the lovely brownish-maroon scotch bonnets (Marasmius bellipes) and Mycena pura whose cap and stem are of a very pale shade of purple. Bird's nest fungus (Crucibulum vulgare) and Collybia albopilata were there too, the latter a dainty little thing growing on nothing but Douglas fir cones. Two very sticky "customers" were flesh-coloured peg-top (Gomphidius glutinosus) and tawny-yellow smeared cortinari (Cortinarius mucifluus).

Due to the late date of the trip many species though abundant were past their best stages. For example, most of the delicious lactarias (Lactarius deliciosus) were showing plenty of green tones in their gills; elf's saddles (Helvella lacunosa) were completely blackened; most of the honey-armillarias (Armillaria mellea) were soft and shabby, while many of the puff-balls (Lycoperdon gemmatum and L. pyriforme) had "fired their ammunition". However, the brownie caps (Galera tenera) were numerous and so fresh it would appear they had just poked their heads through and stretched their stems that very day.

Two species of stereum (Stereum purpureum and S. hirsutum), ash-coloured clavaria (Clavaria cinerea) and plenty of witch's butter (Tremella mesenterica) along with two polypores (Polyporus versicolor and P. Schweinitzii) and two species of Boletus added variety to the collection.

Perhaps the "find" that attracted the most attention was a species of slime mould (Myxomycete) whose scarlet spore-cases were attached by their yellowish-white stalks to bright green moss plants. Slime moulds are considered to represent life at or near the bottom of the ladder; by their main structure and by their behavior they seem animal-like, but judged by their spore-forming parts they are plants. Hence it is not surprising that zoologists call them Mycetozoa while to the botanists they are known as Myxomycetes. This interesting group comprises more than two hundred and fifty species of great variety and beauty. Any one who has access to very old files of the National Geographic magazine will find an excellent account of these organisms, along with sixteen beautiful colour plates, in the April number of 1926.

M.C.M.

GUNNERS AS LAWMAKERS

by Morris Jackson, Fanny Bay, B.C.

The resolution started by the North Burnaby Fish and Game Club which says in part "That where lands are not posted the public will have access to hunt game," might not give cause for public concern were it confined to its sponsors. However, according to the outdoor editor of the Vancouver Sun, this resolution has received better than a 90 per cent affirmative reply from other fish and game organizations circularized.

Briefly, the resolution is to the effect that neither the owner nor any other person, shall hunt upon land posted with "no hunting", "no shooting", or "no trespassing" signs; and as stated above, where such signs do not exist, the hunters "will have access to hunt game". Grazing leases, grazing permits, timber leases, and crown lands (!) shall be classified as unoccupied crown lands and be for the purpose of "harvesting" game and access be granted thereof. The resolution makes no mention of the need to ask permission of the property owner nor does it restrict the gun goon in any manner once he makes 'lawful' entry on a formerly private property. If the owner "suffers loss" he shall be indemnified from funds now "channeled" to the Consolidated Revenue account. The shots fired beneath the sickroom window an hour (approximately) before sunrise, the startled and terrified livestock, the drop in egg production... these the owner must put up with in the interests of blood-sport. But why go on?

The conclusion to be drawn from the passing of such a resolution and its acceptance by 90 per cent of the organizations circularized is indeed shocking. For our wildlife is administered largely by recommendations from "sportsmen's" clubs, such as that of North Burnaby. These organizations bring continuous and often effective pressure upon the Game Commission, their view being that the picayune fees they pay for hunting licences entitle them to be the sole arbiters as to the treatment of wildlife. It is high time that wildlife conservation be taken out of the hands of the Game Commission and its gunner 'advisers', and a new body formed that will have the interests of wildlife at heart rather than those of the gunners who are merely a noisy minority of the public of British Columbia.

Morris Jackson.

BIRD GROUP FIELD MEETINGS

The first autumn field meeting of the bird group was held on September 22nd. The day was sunny and calm, and it was pleasant to be out again with the members of this group, all interested in the birds.

Esquimalt Lagoon was the main objective, as this is always a good place to locate many varieties of sea birds. Gulls were present in considerable numbers, four species of them, Bonaparte, California, short-billed and glaucous-winged. A small belated flock of western sandpipers was seen with the many black turnstones and killdeer, and two spotted sandpipers flew away as the party approached the water. Seen also on the lagoon were pied-billed grebe, mallard, baldpate and pintail. On the seaward side were white-winged and surf scoters, a large flock of western grebe and the ever-present Baird cormorant.

Horned larks had been reported being here since last fall, and after a search four of these birds were seen, together with pipits and savannah sparrows. After lunch on the beach the party moved on to the Little Lagoon, a few miles further on, and here were found white-crowned and golden-crowned sparrows, song sparrows, and a small migration of lutescent and Audubon warblers, included in which were western flycatchers, cedar waxwings, juncos and one evening grosbeak. Two rather unusual birds were also seen in the lagoon, one northern phalarope, which stayed all the time the party were there, paddling in the water, walking on the beach and ever and again rising in flight, but never going far from where it was first seen. The other bird was a marsh wren, its distinctive chattering note being heard more often than the bird was seen. On the sea side of the lagoon here was one American scoter, a bird much less common here than the other scoters.

Twenty-seven members attended this field meeting.

A total of fifty species were identified.

The next field meeting covered the Sidney area, and was held on Saturday, October 20th. The day was unexpectedly fine and mild, as gales and heavy rain had continued until the previous evening. Nineteen members were present, meeting on the wharf at Sidney at 10:30 a.m. The party covered the water front, and then proceeded to Roberts Point, where black oyster catchers and seven greater yellowlegs were seen. Their next objective was the area centered by Resthaven Hospital, these being shallow waters with extensive mud flats at low tide, but, other than

killdeer, no shore birds were seen, though ducks were there in considerable numbers, including pintail, green-winged teal, ruddy ducks, scaup, buffleheads and hundreds of widgeon. Also present were western, horned, eared and Holboell grebe red-breasted and hooded mergansers, common loons, scoters and cormorants.

The party then drove to the home of Mr. and Mrs. W. L. Taylor at Towner Park, where they had lunch. The members were very appreciative of the kindness of Mr. and Mrs. Taylor. Their hospitality added much to the pleasure of this meeting. Around the point of land here which extends into Saanich Inlet, a large flock of Pacific Loons, composed of eighty or more birds, were seen. In all 51 species were seen, among them being an immense flock of mixed Brewer and red-winged blackbirds, containing not less than one thousand birds.

A.R.D.

A VARIED THRUSH REMEMBERS

Last winter, I wrote to the "Naturalist" of a varied thrush that had learned to eat peanuts. This bird has now returned from wherever he spent the summer (which, I suspect, was nearby) and has come to me several times for peanuts which, of course, he has received. He places the half-peanut on the ground and hammers at it with the tip of his closed beak until the nut is broken into fragments. It is a heartwarming sensation to see this beautiful yet very wary creature approach me within a few yards, confident he will be fed and not harmed. His return shows, if demonstration were needed, that birds -- like elephants -- do not forget.

Morris Jackson.

F O S S I L S

by J.H. Whitehouse

(continued from the November issue)

The former dropped soon into an insignificant place, but the plesiosaurs attained their highest development during the period. Some of the latter exceeded 40 feet in length, about

half of which was in the elongated neck. The Aquatic branch of the scaled saurians, snakes, lizards, (Squamata) attained great importance as veritable sea serpents. The long necked lizardlike reptiles of the Comanchean were the forerunners and perhaps the direct ancestors of the Mosasaurus, a family which flourished in the Cretaceous and ranged from North and South America to Europe and New Zealand. The mosasaurus were highly specialized for their life in the sea, but on different lines from the ichthyosaurs and plesiosaurs. Their short career seems to have ended with the period and no direct descendents are known.

Birds

In the long interval between the first known appearance of birds in the Jurassic, and the late Cretaceous when they are again found, important changes had taken place, among which was the loss of the elongate, bilaterally, feathered tail. Again, the Jurassic birds were terrestrial while the known Cretaceous were mostly aquatic. The Cretaceous birds include about 30 species belonging to two widely divergent types represented by Hesperornis and Ichthyornis. The former were large flightless highly specialized divers with aborted wings and remarkable legs. This implies that following the evolution which had produced the wings, there had been a degenerative history long enough for them to dwindle to the point of extinction. Concurrent with this and doubtless its cause was an extraordinary development of the legs. The legs were not only very powerful but the bones of the feet were so joined to the legs as to allow the feet to turn edgewise in the water when brought forward thus increasing their efficiency as paddles. Furthermore, the legs were so joined to the body frame as to stand nearly at right angles to it, like a pair of oars, instead of standing under the body like ordinary walking legs. Apparently, walking as well as flying had been abandoned and the organism was specialized for swimming and diving only. For this purpose the head, neck and body were admirably adapted. The jaws were armed with teeth set in a groove in primitive saurian fashion, and like the jaws of snakes, were separable so as to admit large prey. As these strange birds attained a length of six feet in some cases they must have been formidable enemies to sea-life on which they fed. Their remains have been found in several parts of America and also in England. They probably frequented the epicontinental seas somewhat widely and belong more to the sea life than the land life from which they sprang.

The second type, Ichthyornis, was scarcely larger than

a pigeon, endowed with great power of flight, as indicated by the strong development of wings and keel. At the same time their legs were slender and they had teeth in sockets. The general contour suggests reptilian ancestry. Their habitat was the same as Hesperornis and yet the two were further apart, structurally, according to Marsh, than any two types of birds now living.

Fish

The most important change in the fish of the sea, was in the transfer of dominance from the older types to the teleosts. This change set in during the Lower Cretaceous and was complete by the middle of the Upper Cretaceous.

Foraminifera have an important place in the Cretaceous record. They made large contributions to the chalk of the period, and they were concerned in the formation of the greensand, scarcely less characteristic of the period than the chalk. They were also probably of considerable importance in furnishing organic material as a source for petroleum generation. While some of these minute organisms live on shallow bottoms, on fixed algae and in abysmal water, they are chiefly found inhabiting the surface waters of the open sea.

Sea urchins were quite abundant and gave to the fauna one of its characteristic aspects, but corals and crinoids so long associated with clear seas were not abundant.

Pelecypods and gastropods were plentiful and had already assumed a modern appearance.

Cephalopods were still the largest and most important of the Cretaceous invertebrates, though the ammonites were in their decline and were showing erratic divergences of form, with attendant excessive ornamentation, comparable to that which marked corresponding stages of the trilobites and certain groups of crinoids. Degeneration was manifest in odd forms of partial uncoiling, or of spiral and other unusual forms of coiling. An interesting form to be classed here, was Baculites, which in its later stages of development, resumed the straight of the primitive Orthoceras, while retaining the very complicated sutures of the ammonite. These erraticisms were followed by a swift decline and extinction of the whole ammonite race at the close of the period.

What caused the extinction of the great dinosaurs? Many spicy suggestions have been offered seriously or jocosely, but the dinosaurs are only the most ponderous members of the horde of animals whose careers came to an end in the waning stages of the Cretaceous. Along with the dinosaurs on land, the flying dragons of the air, and the spectacular serpents of the seas likewise passed from the scene. Among the reptiles, only the familiar snakes, turtles, crocodiles and lizards lived on.

Toothed birds died out, leaving the stage for modern developments. Ammonites, belemnites and other stocks disappeared. Like the closing stages of the Paleozoic, the end of the Mesozoic was a time of death for many of the leading races of the era. Even during the favorable times of the Cretaceous many of the types were showing over specialization and various other old age characteristics which foreshowed their doom. Some died out then while the life courses of others were nearly run. Finally, the Laramide revolution, which closed the Cretaceous period, so greatly modified living conditions in many different ways, that the senescent forms, set in their ways, were unable to adjust themselves to the changed environment and so died out. New enemies, such as the placental mammals, which appeared at this time both in Europe and North America, may also have hastened the disappearance of the land reptiles. The disappearance of the great marine reptiles is less easily explained, but whatever the cause, medieval animals came to an end leaving the world to modern animals who advanced rapidly during the next era. Walther has picturesquely called it:- "The time of great dying."

BIRD NOTES

While bird watching at Esquimalt Lagoon on Oct. 28, two members of the society saw two snow buntings. They were able to get quite close to them, as they wanted to make their identification positive, this being, as far as we are aware, the first record of these birds having been seen in the Victoria area.

A fair number of northwestern shrike have been seen during the last few weeks at various places in the vicinity of Victoria. A whistling swan was seen flying over Martindale Road in Saanich on Nov. 17. This Martindale Road area is a favourite place of ours for birding. At the present time there are upwards of a thousand blackbirds, mixed red-winged and Brewers round about there, also many snipe, killdeer and skylarks.

A hummingbird was seen by Mrs. Monckton in her garden on Lafayette St., Oak Bay, on November 8th.

The shore between Windsor Rd. and Bowker Ave. in Oak Bay at this time of year presents a very interesting picture of our wintering shore and sea birds. Here can be seen at close quarters (when the tide is right) black turnstones, Aleutian and red-backed sandpipers, surf birds, black-bellied plover and killdeer, and occasionally a sanderling. Here too are hundreds of widgeon feeding; also mallards,

(continued on page 76)

JUNIOR NATURAL HISTORY PAGE

Bruce Crawford - - - Editor

THE SIAMESE FIGHTING FISH (Concluded)

Eventually she will stop under the nest as if she knows what is expected of her. The male quickly wraps his body around her and a few eggs are expelled and instantly fertilized as they leave the female. The eggs drop to the bottom of the tank where the male picks them up in his mouth and blows them into the bubble nest.

When the spawning is completed it is important that you be there as the male is liable to kill the female if she is not removed. He should be left in the tank with the eggs for he keeps the eggs from falling from the nest and suffocating.

In about three days the nest disintegrates and is no longer needed by the fry which by this time are free swimming. The male's usefulness is now over and he should be removed to prevent the temptation of cannibalism.

In about three weeks comes a very critical period in a Labyrinth fishes life, for it is at this time the labyrinth begins to develop. It is important that the tanks be covered as the air at the surface of the water must be the same temperature as the water, otherwise the labyrinth will not develop properly and result in the death of the fry.

From birth the fry should be fed dust-fine foods for about one week, after which time they should be large enough to handle newly hatched brine shrimp or sifted daphnia. When they are about one quarter inch long they are large enough to eat daphnia and medium ground foods.

By Waldon Davis
Vice-Chairman, JNHS.

FIELD OBSERVATION: Continued from last month.

Last year when I went to school at Doncaster a boy brought a lot of frogs to school. He gave one to me. We had to hide them from the teacher so we washed out our ink wells and put some grass and water in it. After school I took my Frog home and I let him go. He is still around; I just heard him the other day.

By Russell Porter.

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NOTICES OF MEETINGS1956

Tuesday

GENERAL MEETING:

December 11: Provincial Library at 8 p.m.

Subject: "Development in our knowledge
of the North Pacific Ocean."Speaker: Dr. R. E. Foerster,
Principal Scientist,
Pacific Biological Station
at Departure Bay,
Nanaimo, B.C.

The Christmas Bird Count will be taken toward the end of December. Will anyone interested in participating please phone Mr. J. O. Clay.

* * * * *

Tuesday

Dec.11: JUNIOR NATURALISTS last meeting this year.

Tuesday

Jan.8,

1957 : JUNIOR NATURALISTS first meeting in 1957.

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BIRD NOTES: (continued from page 74)

shovellers, surf and white-winged scoters, scaup, red-breasted mergansers, old squaw, American goldeneye, buffleheads, horned, eared and western grebe, harlequin ducks, Baird cormorants and common loons. The two Hudsonian curlew, generally to be seen in front of the Old Charming Inn, must also be mentioned. It seems probable they will again winter here.

A.R.D.

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