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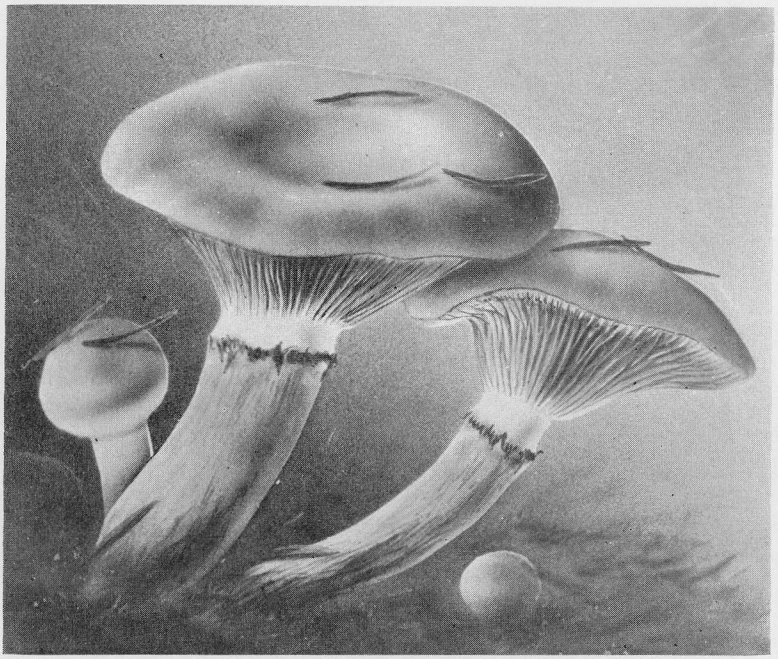

Peg-top.

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OUR COVER

PEG-TOP (GOMPHIDIUS GLUTINOSUS)-

The Peg-top is one of the commonest autumn mushrooms. It is to be found in grassy glades and dells in open woodlands, usually in small groups.

The cap is a livid flesh-colour, moist and shiny due to an adhesive exudation. The gills are dark grey while the spores are black.

A notable feature as a ready means of identification is the bright yellow at the base of the stem, especially when it is broken and the interior substance exposed.

While not poisonous it is not recommended as a particularly tasty morsel.

G.A.H.

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VANCOUVER N.H.S. CAMP AT SOOKE

The Vancouver Natural History Society carried out a very successful week of camping at Grouse Nest, Sooke, from July 7th to July 14th. Thirty members, including four juniors, were under the very able leadership of Stewart Bradley. Most of them were experienced campers and it was a joy to see the happy, disciplined manner of their living together under such conditions. Too much praise could not be given the leader, he really did a grand job. The four juniors were also an asset, always taking an active part. Tents were pitched on a sunny hillside. Breakfast and dinner were served in the Lodge dining-room. A "Take out" lunch was provided for each person each day. Hot drinks and cookies were served before bedtime.

Vancouver Island surely gave them "unusual" weather! Not a drop of rain from beginning to end! The only part of the programme that was changed on account of the weather was

the BONFIRE, scheduled for the last night in camp. A very strong westerly wind was blowing, so we had a CONCERT in the Hall instead.

Victoria Natural History Society cooperated with this camp especially in providing Leaders for some of the activities. Dr. and Mrs. Carl were over on Thursday evening, Dr. Carl showing some of his own movies in the lodge lounge to which all on the premises came. Mr. Marrion gave an excellent day of geology, starting from Mt. Douglas Park at 10 a.m. and ending with an exhibition of specimens and photographs in the Hall near the campsite along with an outdoor talk after dinner. Mr. G.A. Hardy was at the Breakwater to meet us when we arrived at 9:15 Monday morning for marine biology. A good low tide enabled us to collect specimens and Mr. Hardy gave us his identification talk on the beach from 11 - 12. After lunch in Beacon Hill Park we "did" the Museum in the afternoon. Mr. J. O. Clay and Miss Melburn came to the camp for ornithology and botany on Tuesday along with some other members of our Society and we all joined in both morning and afternoon sessions of these two subjects. Our good member, Miss Enid Lemon (formerly of Vancouver N. H.S.) did an excellent work helping to organize programme as well as the set-up and break-up of the camp.

The Vancouver Society members are all very "rugged" and, even after such strenuous days as outlined, would often pile into cars and go off to such places as Becher Bay, Whiffin Spit, etc. directly after dinner! We did a grand daytime trip to Muir Creek and saw the fossil beds there. After lunch we drove on to Point-no-Point for an hour and then to Jordan River where the "Birders" had a great time deciding about an Eagle on a tall tree! Friday was a day trip to Sooke River Pot Holes, our president, Dr. A. O. Hayes and Mrs. Hayes joining the party there and a very pleasant time was had examining these interesting geological formations in the bed of the river. A Concert in the evening really climaxed it all - a skit was presented in which Indians whom we suspected had been watching us all through the week, consented to come and give their impressions of our daily activities! They were well made up and in Indian costumes as taken from the ferns, sea (kelp) and camp equipment!

Grouse Nest was an excellent place for such a camp and Mr. and Mrs. Knight looked after us very well indeed. We were all very sorry to Break Camp on Saturday about noon and say "Au Revoir" to each other.

G.E.S.

WHY ARE THERE INSECTS ?

-by Dr. E.H. Strickland

(A lecture given the Victoria Natural History Society at their September General Meeting.)

The earliest written records show that man has for long puzzled over the problem as to why a beneficent Creator included such unpleasant things as insects in a world He was planning for the habitation of man. They found an explanation by postulating that they were the offspring of Adam's first wife, Lillith, who was removed from the Garden of Eden to make room for Eve, and her second husband Baal (hence Baal-zebub, "the lord of the flies") as a method of re-entering the domain of her successful rival and tormenting her progeny for all time to come.

Despite this satisfying explanation, everything points to the ancestors of insects having been marine worm-like creatures, somewhat akin to modern earthworms. And in the case of a modern marine worm, Nereis, which inhabits the shores of Vancouver Island, certain of these ancient worms developed lateral fleshy outgrowths on the sides of each of their body segments. These later evolved into rigid, though jointed, legs and became the prototypes of a numerous progeny known as "Arthropoda", or jointed-legged invertebrates. This includes Crustacea (shrimps, crabs, &c., all of which, with one exception, the wood-lice, have remained in the sea or in fresh water); Arachnida (spiders, mites and scorpions); centipedes; insects and a few less well-known creatures.

The actual insect ancestor had 21 segments. With the exception of the first and the last, these were identical in structure and were equipped with a horny plate above and one below, while a pair of fairly long jointed legs projected from the flexible membrane between these plates. A modern centipede, with its uneconomical waste of leg-power, is only a slight improvement on its distant marine ancestor which prowled the ocean floor without much knowledge as to where it was going and was condemned, as is the still more lowly earthworm, to a diet of such semi-liquid food as it could suck into its simple mouth.

The insect, however, was destined for a much more varied and interesting life by developing new uses for various segments of its body, particularly with regard to their legs. Of its 21 similar segments, the first six have become much shortened and solidly fused together to form a head, the

primary function of which is to find food, to cut this up when necessary and to get it into the mouth. The next three segments also fused together to form a fairly rigid thorax which, by retaining the use of their legs for walking, assumed the entire responsibility for locomotion. Wings on this region came much later in the evolution of insects. Unlike those of birds, they are not modified legs but, with their aquisition, insects attained an ascendancy over all other forms of life in the matter of rapid transportation. The remaining segments of the insect body retain much of their ancestral structure but, unlike the unenterprising centipede, this abdominal region has shed nearly all of its useless legs.

If you are willing to accept this brief evidence that the 3/4 million different kinds of insects already known to inhabit this earth all evolved from this simple ancestor that roamed the ocean floor, we can proceed to look a little more closely into the marvellous changes that have taken place during the last few millions of years to render them the dynamic force they have become in the world which we must, will-nilly, share with them.

We have not time to add many details to this general picture other than to describe some of the new uses to which the modern insect puts many of the all-too-numerous legs it inherited from its ancestor.

Though this ancestor did have eyes of a kind, these ocelli, on which many worms, snails and spiders still depend, are miserably inefficient for their purpose. They probably do little more than record whether the surroundings are light or dark. Why not, then, put the front pair of legs to use in obtaining a bit more information? This the insect ancestor proceeded to do by stretching them out straight in front of itself. Gradually they changed shape and became the familiar "feelers" or antennae of the modern insect head. In addition to the sense of touch, many of these have now acquired a sense of smell and occasionally that of hearing.

Most of the original legs of the head region, however, concerned themselves with the task of getting food into the insect's mouth. First of all, the mouth developed a pair of flap-like lips somewhat reminiscent of central African beauties who insert discs into both lips to transform them into platypus-like beaks.

If we carefully raise the upper lip of a grasshopper we are confronted with a bewildering array of teeth, large

and small, of flap-like structures and hanging jointed appendages. Why such a muddle of structures in comparison with our own unadorned mouths? The answer is that we are looking at three pairs of legs which, though originally employed solely for walking, have now become wonderfully modified in order that they may push food into the mouth and, rather surprisingly, also to assure that saliva will be mixed with the food.

Two pairs of legs have squeezed together to lie between the lips and on either side of the mouth. The first are reduced to a pair of very hard plates which have developed powerful teeth and opposing surfaces along their inner sides so that, when they are brought together in front of the mouth, they can cut off and crush pieces of food. When these open for a second bite, the severed food simply drops to the lower lip. It is not yet IN the mouth. To get it there is the job of the second pair of legs which lie between the lips. These operate much as would our own arms if they arose from the same location. By bending at the elbows the toothed hands come together, grip the food and push it into the mouth. Surely, then, there is no purpose to be served by a third pair of legs.

But nature was not kind to insects in assuring that a supply of all-important saliva could be mixed with their food before it was swallowed. Saliva pours into our own mouths through various ducts placed well inside our lips. This is not so with insects. All of their saliva escapes through two holes on the UNDER side of the lower lip! Thus when they feed, their saliva, so-to-speak dribbles down their chins where it could hardly be expected to aid in digestion.

In order to overcome such poor planning, a third pair of legs has been pressed into service. In a grasshopper, for instance, we find these legs, much flattened and fused together, lying under the lower lip where they form a very efficient bowl in which the lip hangs. The bowl fills with saliva and soaks any food which is on the top of the lip. This unfortunate necessity to mix saliva with food outside of the body may have tragic repercussions for us. When mosquitoes and other insects acquired the unpleasant habit of drinking human blood they were still forced to mix saliva with it BEFORE taking it into their mouths. Their first task, when feeding, is to pump saliva into our blood-stream. It stings. Though they attempt to suck all of it up again they never succeed in so doing. Still worse, this saliva sometimes carries the disease germs of malaria or of yellow fever and

some of these, also, are left in the blood of the victim.

So much for the new uses to which insects now put the original walking legs of their head region. Those of the thorax are still employed chiefly for walking though, in some, the hind pair serve largely for jumping. As we have seen all unnecessary legs have been discarded from the abdominal region but, in the female, the retention of three pairs around the egg-laying opening is so valuable in placing the eggs in the most favourable locations for the requirements of her offspring that these still persist as an ovipositor. The female grasshopper digs deep holes in the ground with hers for the reception of her eggs, the sawfly cuts slits in leaves while parasitic insects drill holes in the bodies of their caterpillar victims and pump their minute eggs into them. Honey-bee and wasp workers, though all are females, never lay eggs since they leave this task entirely to the queen of the colony. They can, therefore, now use their ovipositors solely for stinging. I imagine that all of you have experienced their efficiency in this new role.

It is largely because insects have found so many new uses for their super-abundant inheritance of legs that they have become such successful rivals of man unlike their unenterprising relatives, the centipedes, which still can find no better use for most of them than to try to keep them from becoming entangled with each other as they scurry around during their monotonously uneventful subterranean lives.

TAMENESS IN WILDLIFE

One of the more interesting aspects in the study of animals is the confidence they can show toward man under happier circumstances than generally prevail.

On our trip through Alberta we saw Canada jays that showed little fear, even of speeding motorists. A mantled ground squirrel close to a well known falls, with cheek pouches already bulging with puffed rice, preferred to take food from one's fingers rather than bend to pick up from the path. Bears, brown and black, walked the road hoping for handouts. A herd of some twenty elk, grazing in bottom land, stood to watch people approach through a grove of aspens. A calf would facetiously 'put his fingers to his nose' to tourists by kicking creek water in their direction; and this while the master of the herd whistled

and grunted in warning from the wood nearby. Outside Banff Park where the road crosses a salt lick, a herd of twenty antelope stood around while travellers drew up and delightedly watched or photographed them. When alarmed an antelope can instantly jump a three-foot fence as effortlessly as a man takes a step forward. On three sides they stood around to watch, to lick, and to chew the cud. An altogether different lesson in unconcern was when a group of four pintail ducks and a lesser yellowlegs fed in a slough whilst a marsh-hawk stood on a hay bale to finish her meal.

Is this a metaphorical preview of the time when "The wolf also shall dwell with the lamb and the leopard shall lie down with the kid; and the calf and the young lion and fatling together; and a little child shall lead them."

J. O. Clay.

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AN ORPHAN CROW

by Morris Jackson, Fanny Bay, B. C.

Have you ever seen a crow have a splash-bath? I had not until last July, when a boy brought us a small crow with the request that we would rear it for him "as I don't want it to die." For several reasons, a crow does not make an ideal pet; also, there is to be considered the vendetta against these birds which is so actively urged by the ammunition salesmen, making any crow a target for the trigger-happy-hunter.

But its finder did not want it to die and neither did we, so we took the little crow and promised to do our best for it. Although it was covered with small but firm feathers, having lost all juvenal fluff, it was unable to fly properly; perhaps because of weakness caused by starvation. It gaped for the food we gave it, and yet it would pick up some food too. But after a week it reverted entirely to chick habits, cawing and flapping its wings and gaping for its food. It seemed to like both my wife and me to feed it, turning from one of us after feeding as if satiated, only to gape at the other and again eat heartily.

It soon gained weight and strength, and we were able to see how well adapted are these chunky, vigorous birds for the somewhat grim life they lead. We were greatly impressed by its beak, which it manipulated with the delicacy of a watchmaker's tweezers or with the vigour of a blacksmith's tongs. Used as we were to the feeble grip of a robin's bill, we were truly astonished at the viselike hold of such a young bird,

to say little of the virtuosity with which it was used. Its claws were strong and very sharp, and were used very often to hold down a variety of things which were being eaten or destroyed. (In this use by crows of their feet, they quite commonly hull oats which are held between the claws and hulled with the beak.) Although the young crow occasionally would stab in its play at our hands, it was very careful not to peck at our faces--though it would tug roughly at my wife's hair.

Young birds sometimes require a little practice before they learn to drink, and the little crow would poke at the water in a cup and then open its beak wide in an effort to grasp the elusive substance. But it was more interested in the shiny cup--and in the fingers which held it. Finally it hopped onto the rim of the cup and commenced the familiar wing shuffling movement of a bathing bird. A washpan was provided which the crow carefully inspected, just as our robins and towhees had done: trying to see underneath the pan, walking around it, etc., before stepping cautiously into the water. From then on it enjoyed a thorough soaking each afternoon.

Like our robins and towhees, also, it became restless and alarmed around 8:30 p.m., D.S. time, but quickly settled down for the night when put in a large cage and covered. It was, seemingly, affectionate and liked me to rub my cheek gently against its head. After we had kept it for a month it escaped when my wife and I were both out of the house. It returned, very wild, after four days and ate ravenously. For another week it visited us, becoming increasingly wild and suspicious and each time eating less. It has now joined "the wild bunch".

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POST GLACIAL UPLIFT

by Dr. A.O. Hayes

Wise Island - On July 7 the bird group of the Victoria Natural History Society stepped ashore onto the rocks at the entrance to a small cove on Wise Island, that lies between Galiano and Vancouver islands, and had lunch.

It was low tide and after lunch several of us made our way cautiously along the steep rocky east shore of the cove, at the head of which was a soil-filled valley about ten feet

above high tide level.

We examined the glaciated surface of the volcanic rocks, that were much broken by joints, and unexpectedly at the head of the cove found a shall bed flooring the small valley. The bed, about two feet thick, is above high tide level and extends for about 50 feet across the low ground between the rocky shores to the east and west.

The occurrence is similar to that exposed on the north bank of Maynard's cove (Smuggler's Cove) Ten Mile Point. (See The Victoria Naturalist, January 1956, pages 78 and 79).

The shells of the pelecypod Saxidomus giganteus and of the gastropod Thais lamellosa were also present in abundance. Another similar feature is the bedded matrix of comminuted shell fragments accompanying the unbroken shells. This fragmentation and layering is typical of wave action and apparently was accomplished as the clam bed rose from below low tide to its present elevation above high tide level. At the bottom of the shallow cove, under several feet of water; clams could be seen. It looks as though the process of clam accumulation is now going on. Mr. Peck, in whose launch we made the trip, when he saw the uplifted shell bed, informed us that he had seen similar beds above tide level in coves of many of the coastal islands.

Regional Uplift - Is the Pacific coast rising at the present time? In Scandinavia there is historic evidence for the rate of uplift, of between one and two feet per century. Along the east coast of Newfoundland there is good evidence from submerged boulders that the fishermen of one hundred years ago could sail over to their wharf - now the submerged boulders are so close to the surface at low tide that the wharf has had to be moved to another location.

In approximately ten thousand years since the Wisconsin ice cap melted away from the St. Lawrence river valley at Montreal, the uplift is more than 500 feet. A similar uplift is found in the Fraser Valley. Along the shores of the Hudson Bay the uplift is greater. At Sydney Nova Scotia, no uplift has been observed. In the Bay of Fundy on both the Nova Scotia and New Brunswick coasts the uplift is about two hundred feet. So the continental surface seems to be roughly domal, with smaller undulations in different localities. Experimental evidence by the late F.D. Adams, while Professor of geology at McGill University about 50 years ago; and later in Washington D.C. and at Harvard University, indicate that rocks become plastic enough to flow, at a depth of about eleven miles. This is due to the weight and increase in

temperature within the earth's crust. When the northern two thirds of North America was burdened with ice about one' mile thick, the added weight caused the crust to subside. When the ice melted and about 600 feet of water was added to the depth of the world ocean the action was reversed and the earth rose. It seems likely that ten thousand years is not long enough for this balance to be fully satisfied.

About the same time that the experiments in the flow of rocks were being made in North America, a few European geologists began to compare the results of flow on the alpine glaciers to the folding of the rocks of the Alps, and at present these leaders have convinced many geologists that except for the longer time involved rocks under differential gravitational stress flow and are deformed in a fashion comparable to that of ice.

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O C T O B E R

October is a month of cool delight,
Of peaches, plums, and apples sweet and ripe,
Relaxation from trying summer's heat,
Time to watch graceful, migrant birds in flight.
'Tis true that children all reluctantly
Leave summer camps and sports that they enjoy,
To take their books back to their schools and try
To study subjects, some of which annoy.
Autumn steals in with balmy soothing air,
And mothers have a chance to rest and talk.
The fathers feel that they are free from care,
Without the boys around to stop their work.
The leaves of trees yellow, red, and brown,
Are matched by the 'mums around the lawn.

Lorion,
Sept. 4, 1956. A.O.H.

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BIRD NOTES: The scoters - white-winged and surf - were seen in considerable numbers (about 500) off Salt Spring Island on July 27th. Apparently the male birds leave their nesting grounds in the north early in the year, leaving the females to look after the young.

A.R.D.

JUNIOR NATURAL HISTORY PAGE

Bruce Crawford Editor

A PINK SNAKE, by Leonard Orrico, Pres. J. N. H.

A pink snake. Is it fact or fancy? Nonsense? Maybe, but seeing is believing. Such a snake was shown at the Victoria Natural History Society meeting (Junior Branch) on September 19th of this year.

The reptile was five inches long and a light pink in colour. Its eyes were a bright red. Upon examination it was found that the stomach and cerebral structure were partially visible to the naked eye.

This snake was shown by Dr. G. C. Carl, who gave complete details as to its capture and the area in which it was found.

It is an albino garter snake born this year.

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BLACKBIRDS, by Eleanore McGavin (Senior member contribution)

Have you heard the red-winged blackbirds calling to each other these last few weeks? Their song is a liquid, metallic call of a few notes that seem to ring from garden to garden as they congregate in family groups in preparation to leave for the south. Already many flocks have been flying over.

The red-winged blackbird is also called soldier blackbird because of his handsome red epaulettes; his wife, though, is brown and speckled all over.

The other blackbird which occurs here is the Brewer's blackbird which is a shiny black bird with a purple tinge to its feathers on the head. The best field identification is its yellow eyes. The female though is all brown with brown eyes.

Both species can be seen together in Beacon Hill Park.

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NOTICES OF MEETINGS

1956

Tuesday - October 9: **GENERAL MEETING**
In the Provincial Museum at 8 p.m.
Botany excursion to Northern B. C. Yukon and Alaska; illustrated.
Speaker: Dr. Adam F. Szczawinski.

Saturday - October 13: **GEOLOGY**
Field trip to Esquimalt Lagoon.
Meet at Monterey Cafe at 1:30 p.m.
Leader: Mr. A.H. Marrion.

Saturday October 20: **BIRD GROUP:**
Meet at Sidney Wharf 10:30 a.m. or Monterey Cafe at 9:30 a.m.
Bring Lunch.
Leader: J. O. Clay.

Tuesday October 23: **GEOLOGY:**
Provincial Museum at 8 p.m.
Subject: Geology of the Olympics.
Speaker: Mr. A.H. Marrion

Tuesday October 30: **AUDUBON SCREEN TOUR**
Oak Bay Junior High School at 8 p.m.
"Land of the Scarlet Macaw"
Speaker: Ernest P. Edwards.

BIRD NOTES: A black-throated grey warbler was seen at Ivy Green Park near Ladysmith on September 10th. Two were also seen in the garden of Mrs. Bell on St. Patrick Street. Curiously enough, exactly a year ago a pair of these unusual warblers visited Mrs. Bell, the date in each case being September 13th.

A. R. D.

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