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(F. L. Beebe.)

Mink.

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OUR COVER

The mink, a dark brown weasel-like mammal occurs throughout the province except on the Queen Charlottes and certain other coastal islands. The adult male weighs up to three pounds and measures about two feet long including a moderately bushy tail of 7 or 8 inches. In recent years mutants have been bred by mink ranchers and quite a range of colour variations have so evolved. Such mutants, of course, occur regularly in nature, but have no chance of establishing the homogeneous populations produced by selective breeding in the ranch pens. Thus by far the great majority of wild mink are brown, most usually a dark rich brown, which, coupled with the fine dense pelage make mink valuable fur.

This animal represents an early stage in the evolution of the aquatic mammal. It lives near the water and feeds largely on fish and other aquatic animals. It is an excellent swimmer, though the feet are unwebbed and the body not stream-lined to the extent that it is in the otters, seals and sea lions. The limbs are relatively short however, a characteristic of the aquatic mammal. Nevertheless on land the mink is agile, weasel-like in action, and quite an efficient predator on birds and other mammals. In coastal British Columbia the mink is a beach-comber and in many areas shows a distinct preference for crabs, in the summer months, at least. On the Bardswell Islands in the summer of 1948 a museum party was kept awake at nights by the crunching and cracking of crab shells by mink which were extremely abundant there. Around the fresh water habitat it feeds largely on fishes, frogs and the like.

Two subspecies of mink occur within the province. A relatively small dark form is found on the mainland and coastal islands except for Vancouver Island, where a larger, paler coloured animal occurs.

C. J. Guiguet

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WINGS AND NO-WINGS

G.A. Hardy

This article treats of five species of moths in which the females are wingless - hence the title.

Of the approximately 1000 species of the larger moths as listed by Jones* only little more than half a dozen are wingless in the female sex. Those dealt with here are all fairly common in the Victoria district. The males are active on the wing either by day or night, and are most often seen at our porch lights or in the beam of our car head lights along country roads. The spider-like females confine themselves of necessity to tree trunks, sides of houses, occasionally both inside and out if the food plant is nearby. The fact that they possess only six legs will readily separate them from spiders, which, among other less obvious distinctions, have eight legs.

The word moth conjures up in the minds of many of us the pests of our clothes closets, but that is no reason why the whole class of moths should be avoided; the transgressions of the few should not condemn the whole.

Most of our moths are arrayed in a pleasing array of colour and design that baffles adequate description. Furthermore, all are intriguing in the four phases of development, each as different as day is from night. First the egg, the commencement of life, variously shaped, coloured and sculptured. Second, the caterpillar, the feeding and dispersal stage with the varied growth forms, each adapted to concealment or camouflage by colour or shape simulating twigs, blemishes on leaves or stems, or hiding in folded leaves, or in the ground in order to avoid the prying eyes of predators. Third, the pupal or chrysalis, the so-called resting stage, but actually, a very busy time of life, for the creamy emulsion that seems to fill the pupa at first is gradually converted into the future moth, so very unlike the preceding stages. Finally the perfect moth - the reproductive and also dispersal phase.

The following four species belong to the family Geometridae, literally, "earth-measurers" from the habit of the

* An Annotated Check List of the Macrolepidoptera of British Columbia. J.R.J. Llewellyn Jones. Occasional Paper No.1 Ent. Soc. of B. C. 1951.

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caterpillar progressing in a series of loops, stretching out the body for a fresh grip of the front legs, then drawing up the rest of it to form the loop, due to the fact that legs are placed only on the front and hind segments of the body. Loopers is a popular name given the family. As children we called them "bust-backs".

The Mottled Umber, Erannis vancouverensis Hulst. The male is a fairly large, handsome moth with a wing expanse of 2 inches. The colouring consists of shades of cream and reddish brown arranged to form irregular bands or mottling across the wings; rarely one will be completely black in colour.

The scientific name was given by Geo. Hulst, an eastern entomologist, in 1896, to distinguish it from a related European species. Attention to this difference was drawn by the "Father" of Vancouver Island entomology, the Rev. G. W. Taylor, as long ago as 1887.

The female is like an elongated spider, about half an inch long and with a salt and pepper coloured body; no sign of wings is present. It is quite active, chiefly at night, and travels about on tree trunks, and occasionally enters the nearby houses. A female in captivity laid over 60 eggs in the crevices of a piece of willow stem.

The caterpillar is as pretty as the moth, typically a warm sienna brown, edged with black along the back, and with a broad yellow band along each side. It feeds quite openly among the leaves, its colour tending to blend in with the leaves, where it is very inconspicuous when resting. The preferred food plant in the vicinity of Victoria is Garry oak, though willow, rose, hawthorn and a variety of other shrubs are not despised. It is abroad during September to December.

The Large Winter Moth, Paraptera danbyi Hulst. The male of this species is the larger of the two winter moths hereabouts, with a wing expanse of one and one-half inches. It is modestly dressed in shades of grey and white arranged in cross-bands.

The scientific name commemorates one of our early enthusiastic entomologists in Victoria, W. H. Danby, who collected here about 1892. He sent a collection of moths east, among them the above, which was described by Hulst in 1896.

The female is even more spidery in appearance than the mottled umber, it is smaller, measuring about one-quarter of an inch in length, and is of a drab bark shade of colour. It possesses very small vestigial wings, about 1/16" long,

which look more like tufts of hair than wings.

The caterpillar is green with white dots and feeds on Garry oak in our district. It has been recorded as feeding on coniferous trees. It is active in November and December.

The Small Winter Moth, Operophtera occidentalis Hulst. Very similar in the male to danbyi but smaller; the expanded wings measure one and one quarter of an inch. The wings vary in colour from an uniform dark brown to a grey and white banded phase very similar to danbyi, but is altogether smaller.

This moth was also named by Hulst in the same publication as the preceding two, in the year 1896, occidentalis, meaning western to designate its distinctness from other American species.

This is the commonest of our winter moths and has a wider distribution. It is almost sure to be this one that crosses the path of our cars in the beam of the headlights during November and December.

The female is about three sixteenths of an inch long, and of a dark grey colour, with tiny vestigial wing scales.

The caterpillar is green with a white line on the back and sides; it hides between folded leaves when resting. This is the stage to collect this species, as the caterpillars are readily beaten from the food plants in May. By this means plenty of the females will be obtained later on when the adults emerge.

The food plants include trailing blackberry, ocean spray waxberry, June-berry, maple and others. It is usually common everywhere in November and December.

The Walnut Span-worm, Coniodes plumogeraria Hulst. Another moth named by Hulst in 1898. The common name refers to its abundance on walnut trees in California where it was abundant. The specific appelation has reference to the very feathery antennae of the male. It averages two inches from tip to tip of the expanded wings, which are of a drab smokey colouration, without conspicuous markings.

The female, like the others is very spider-like measuring one half of an inch in length and covered with dark grey scales; the wings are represented by very tiny scale-like stumps. When at rest on the bark of trees it is exceedingly difficult to see,so well does it blend with the surroundings.

The caterpillar is very stick-like in form and colour; it feeds on walnuts, plums and other trees, but is never reported as being common in our area. It is active from February to April.

The fifth species in our list belongs to the family

Liparidae or Tussock Moths, so called from the ornamentation of some of the caterpillars which are adorned with tufts of hair along the back like miniature shaving brushes. They also have additional legs, so that their progress is in the form of a smooth undulating motion.

The Vapourer Moth, Notolophus antiqua badia Hy. Edw. The male of this moth measures one and three-eights of an inch in expanse; the wings are a rich brown colour, with a conspicuous white dot on each of the forewings.

The males are sun lovers, and may be seen dashing about in a rapid and irregular manner in our gardens and parks.

The female is wingless and measures 3/4" long with mere scale-like vestiges of wings. It is grey in colour, and on emergence never leaves the surface of the cocoon but after laying its eggs - up to 300 - thereon, dies and drops to the ground.

The caterpillars are gaily decorated with tufts and brushes of black and yellow hair on a brown or dark background. They parade about without any effort to conceal themselves, apparently trusting their hairy nature for protection. The emission of some predator deterrent exudation from glands on the back may also be protective in function.

The food plants consist of a great variety of garden shrubs and trees, including rose, plum and currants.

This moth is active from July to October, scarce in some years, abundant in others; 1944 was notable for its numbers around Victoria.

The five species of moth just reviewed have one feature in common - the wingless female. The fact that they are all widely distributed shows that a winged female is not necessary for dispersal of the species. It is the caterpillar that does most of the travelling; even species with winged females depend on the mobility of their caterpillar for active dispersal, as evidenced by the tent caterpillar, the oak looper and the isabella tiger moth to mention three species well-known to everyone.

BLACKBIRDS

Last week, coming back from Sidney on the main road, we saw the largest flock of blackbirds we had seen for many a year. This flock was a mixture of red-winged blackbirds and Brewer's blackbirds, about 1200 of the former and 800 of the latter. It was quite a sight to see them all rise together to settle again in another part of the field. The

red-winged could be easily distinguished by the yellow crescent on the shoulder.

A.R.D.

SUBURBAN SHRIKE

by Grace M. Bell

OCTOBER - and the shrikes are seen nearer town finding new hunting grounds for their winter's existence. Our house is a block from the sea at Shoal Bay; the area is old and well built up, the trees are of all sizes, evergreen and deciduous. There is also shrubby wild growth forming thickets.

The shrike is not the most graceful of birds, but the dress is very fine, mostly in grey with black and white wings and tail. There is a sharp pointed hook on the bill. Though raptorial in nature the family belongs to the Order Passeriformes. In silhouette the body is more like a small, slim robin than a hawk; better still, the undetailed similarity in appearance to a mocking-bird is marked to those familiar with both.

Recently I thought the behaviour much like that of a cedar waxwing when it flashes up into the air from a branch; the bird seems to twist about and half hover, then, after a swing outward returns to the same tree. This action pattern is presumably caused by the similar one made by some insect it is after. Flycatchers act in a similar manner; but we might well have asked this year what was the Lewis woodpecker doing performing in the same way? Perhaps the relationship of these families is not far apart even though there are major differences in appearance and living requirements.

There was an unfamiliar "hawk silence" here this October day. The customary one is bare of sound and sight of bird. This was different. For one thing, birds were not entirely out of sight, even though they were not all exposed enough to be identified. Nor were they as silent as usual. Yet the eerie bird-fear atmosphere persisted like an ominous knell.

The linnets and house sparrows were disturbed in every quarter. They hopped this way and that, they flitted amongst the small twigs of the all but leafless Manitoba maple. Every few moments one flew away - the linnet, in the usual high flight - the sparrow, zig-zag into another tree or bush. The linnet sounded its canary-like musical note, in the tempo of alarm and panic. The sparrow, when taking off in terror chirped at the beginning of flight, was silent in the air, then chirped unhappily again from where it alighted.

Towhees, song sparrows, golden-crowned sparrows and fox sparrows were not to be seen, yet they could be faintly heard in the small, whispered sounds coming from the cedar hedge and at low level in the thicket and shrubbery.

A cedar waxwing appeared from the air and alighted above those scattered small birds in the Manitoba maple. This tree is approximately 25 feet high. I moved in closer and saw flitting through the branches in the middle of the tree a bird larger than the others - the shrike.

The disturbance increased, the littler birds appeared to be frantically trying to make up their minds whether to go or stay. The shrike flew out, alighting half way up a 35 to 45 foot tall wild crabapple tree in the neighbour's garden, twenty feet away. The leaves were mostly still present on this tree; the growth almost as a thicket would be, the birds being hardly visible, one of such - a silent red-winged blackbird. But the shrike perched boldly on an outer twig half-way up the tree, looking this way and that, no doubt planning a strategic move.

There was no black on its face, only a dusky patch back from the eye. Black tail and wing showed up fairly well. The face was a soft pinkish-fawn, also the whole effect was more this colour than anything else, until the bird came closer, as it soon did, into the very tree beside me - the Manitoba maple. The beautiful vermiculation on the body now stood out - whitish with fine black tracings. How needle sharp must be that point on the hook of the upper mandible!

Crouching, the shrike hopped closer through the tree in my direction, then it stopped to peck at a small dead bird cached in the crotch of two branches. A limp, wet feathered house sparrow, which may have been taken at the bird bath. For a few moments the shrike let me watch it having breakfast, until the prey was dislodged and carried away in its bill. So closed that incident.

Another day in October a shrike in the garden proved itself able to carry away a small bird in its feet. This bird had been going through the trees and bushes for about an hour when in a sudden springing type of flight it gave a few acrobatic gyrations in the air spiralling above my head, then took off round the house. I ran round in the opposite direction. We both made a complete circuit, but the shrike was streaking across the garden carrying a bird in its small claws. Somewhere on route round the house it had picked up its quarry.

A moment or two after this an "all clear" was given by the singing of a Seattle wren followed by a song sparrow. But

it did not last for long. A few birds came out to feed and from somewhere appeared a darting shrike. This one looked bigger, but it may have been the same bird. It made for the wild crabapple tree, then dashed off low behind houses on the next street.

It is interesting to note in the latest Bird-Banding journal an account of shrikes banded in Connecticut returning to the original banding station five to eight miles from the place of release. Another bander in Germany had an adult shrike return four times after being released at distances from two to fifteen kilometers from the banding station. The fifth time it was released thirty-seven kilometers (about 23 miles) away and did not return.

A MUCH APPRECIATED LECTURE

On Tuesday, December 10th, the Natural History Society heard Mr. L. J. Clark of the Chemistry Department of Victoria College speak on "Latitudinal and Altitudinal Variation in Plants".

Beginning with a brief history of early plant records, Stone Age engravings of willows and grasses, Mr. Clark then described the changes in vegetation from California to northern British Columbia, and compared them with the changes found from sea-level to high elevations. That the position of plants is affected by latitude and altitude both, is shown by the height of the tree line, which in California is at 11,000 feet, while thirteen degrees of latitude to the north at Forbidden Plateau the tree line is reached at 6,000 feet. Among the vivid colour slides, taken by Mr. Clark on his travels, were vegetational features such as Port Orford cedar, Oregon myrtlewood, western azalea, the Darlingtonia pitcher plant, several kinds of Indian paintbrush, penstemon species, buckbrush (Ceanothus), the "squaw grass" Xerophyllum which actually is a member of the lily family, Calochortus and Erythronium. Rare endemics included the very local Kalmiopsis leachiani, and Lilium bolanderi.

In the second part of his talk, Mr. Clark explained the main factors responsible for plants growing where they do. Those which survive in dry areas, the xerophytes, have special modifications: leaves with extra thickness, or with the margins rolled inward, or with woolly hairs such as are seen underneath the leaves of labrador tea. Some wet areas are actually drought areas for plants- salt marshes and acid bogs, for example, where the water is toxic to most plants,

and the concentration of dissolved salts is so high that osmosis is only possible by modification of cellular structure and abnormally high salt concentration in the cell sap. Steep hillsides where water drains off rapidly also are xerophytic situations. Heath plants, stone crops (Sedum relatives), the wild onion and fool's onion, are such plants. Plants which grow best in wet places, hydrophytes, include the skunk cabbage, false hellebore, and many other species which bloom in early spring near Victoria.

Mr. Clark also traced the succession of plants which may follow one another at any location, as the soil accumulates through the influence of those plants. The beginning of soil is the weathering of rock from mountains, and a very striking slide showed the Coast Range near Bridge River, with rock slides sloping down from the peaks, and the vegetation cover creeping upward over the rock. The pioneer plants are lichens which can grow on bare rock, hold moisture, catch dust particles from the air, and together with their own decay make a thin layer of humus on which mosses can grow. The mosses form a thick mat in which flowering herbs and shrubs can find anchorage; their growth builds up a layer of soil sufficient for the support of trees- in the example shown, yew and arbutus. The forest which develops thus creates special conditions, and under the tall trees are found only shade-loving plants, which have large, flat-spreading, delicate leaves.

The effects of careless logging and fire were shown dramatically by photographs showing such devastation on Vancouver Island and at Manning Park. The vegetation in those areas will not recover for a long, long time.

In a last group, Mr. Clark showed pictures of parasitic plants like the little broomrape, attached to Saxifraga caespitosa; some saprophytes, Indian pipe and Newberya congesta, on decaying matter; and the curious carnivorous plants Venus' fly trap and round-leaved sundew,which catch insects and digest them.

The brilliance of Mr. Clark's colour photography, the variety and scope of his subject, were much appreciated by all present. As Dr. Hayes pointed out, in thanking the speaker, it is rare in our time for a man to be so versatile- to be able to discuss enthusiastically and knowledgeably the natural history of plants, animals, rocks, mountains, and climate. His keen interest in the conservation of our natural vegetation meets our cordial sympathy. And when we reflect that all these skills have been tucked into the spare

time of a busy chemistry professor, we are doubly grateful for the time he gave us.

A.L.G.

On November 13th, Archdeacon Robert Connell died at the age of 86.
Robert Connell was the leader in the organization of the earlier Natural History Society of British Columbia, and was chiefly instrumental in the founding of our own Society. He had a wonderful knowledge of geology, ornithology and botany, and wrote the most interesting articles on all these subjects for many years, both for the local newspapers and this magazine.
The following tribute to Mr. Connell was printed in the Colonist of November 14th:

"Scholar, writer, naturalist, politician, humanist, Archdeacon Connell had friends in all walks of life, and was an authority and a writer and lecturer on a wide field of subjects.

"He was leader of the C.C.F. party in the B. C. Legislature from 1933 to 1937.

"Born in England, he came to Canada as a young man, and became identified with museum work in the North West Territory. In 1897 he was sent to Innesfail in the diocese of Calgary, and remained there until his transfer to B. C. in 1901. Then began his long connection to the time of his death with the Anglican Church on Vancouver Island."

DECEMBER GENERAL MEETING

Held December 10, this meeting was very well attended, an almost capacity audience of over sixty people being present, particular attraction was illustrated lecture by Prof.L.J. Clark. The Vice-President, Mrs. Soulsby, was in the chair, as the President, Mr. Monckton is on an extended trip through the States, and will be absent until April 1st.

The Audubon Society, on learning that several people had been turned away from lectures on account of insufficient accommodation, suggested that our Society consider holding the lecture on two successive nights next season, but, after considerable discussion of the pros and cons, a vote of

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JUNIOR BRANCH, OUTINGS & JOTTINGS

by Freeman King

On our expedition to John Dean Park on Mount Newton, we climbed to the summit, from where we could see the town of Sidney and surrounding islands.

While there, the original blaze marks left by John Trutch who surveyed the area in 1857 were shown the boys and girls. One of the blazes was cut into an oak tree. During the period of time it had grown over until the axe cut had closed to a small gap of about two inches wide. One could see the new growth all around the mark. The other blaze was on a Douglas fir, and it had completely grown over, yet it could be seen where the cut had been made.

Close by there was perhaps the last of the old Indian 'rings' of stones that at one time covered the entire summit.

These stone rings were used for ceremonial purposes by the Indians of a by-gone age, and it is not clear just how or for what purpose they were used, but it is strange that in nearly all cases the apex of the rings or designs are pointing due south, as if they were pointing to the sun at noon. On the south slope of the summit there is a large altar-like rock, which legend has it was used as a sacrifice rock or altar. In the past it was in the clear, and it too was pointing due south. Now the new growth of trees obstructs the view, that looked over the straits and Olympic Mountains, and in direct line with Mt.Ranier.

During the trip fungi were collected, some of which were turned over to Dr.Adam Szczawinski. Several clumps of false azalea were found on the western slope. It was noticed that the winter buds were losing their coat of protecting wax, owing to the mildness of the weather. In very sheltered spots the skunk bush or Indian plum were starting to put forth their leaves, and the flowering currant was showing signs that its leaves were breaking forth.

On the trip we visited the ever-flowing spring that is in the old crater.

The Junior Branch are planning a centennial project in which we hope to secure the use of some wild land that we can use as a conservation project for plants, birds and other wild life. We could transplant plants from other areas so that they may be studied and preserved. This project will continue over the years and the work will be done by the boys and girls. It is hoped that it will in some small way help to preserve our fast disappearing flowers that some people through ignorance are destroying.

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NOTICE OF MEETINGS

1958

Saturday Jan. 11th: JUNIOR 'Let's get acquainted party'
Scout Hall, Kings Road, (two blocks up from Douglas St.)
From 7 to 9:30 p.m.
Mr. Freeman King would like parents to come along with their boys and girls. Refreshments will be served.

Tuesday Jan. 14th: GENERAL MEETING
Provincial Museum at 8 p.m.
Speaker: Dr. G. Clifford Carl.
Subject: 'Essence of Life'.

Wednesday Jan. 15th: AUDUBON SCREEN TOUR
Oak Bay Junior High School Auditorium at 8 p.m.
Speaker: Bert Harwell
Subject: 'Forgotten Country'.

Monday Jan. 20th: BOTANY MEETING
Biology Building, Victoria College at 8 p.m.
Speaker: Miss Anne Gorham. Subject: "Mosses"
Please bring specimens, pencil and paper.

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members showed that the majority were against any change in the present arrangements.

Mrs. Soulsby advised that the projector and screen were now available to the members. A vote was again taken on the question of charging for the loan of same, which resulted in a 75¢ rental being fixed for the use of the machine and screen for three days.

Continued from page 91: JUNIOR BRANCH

An enjoyable time was spent at the Dominion Hotel, when we saw the beautiful paintings of flowers by Emily Sartain which were on exhibition there.

Our outdoor-indoor party is scheduled to take place on Saturday, Jan. 4th at 7 p.m. in the Scout Hall on Kings Road, and we would be pleased to welcome any who care to come along and enjoy some fun with the boys and girls.

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Please Note: Junior Party postponed until January 11th.

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