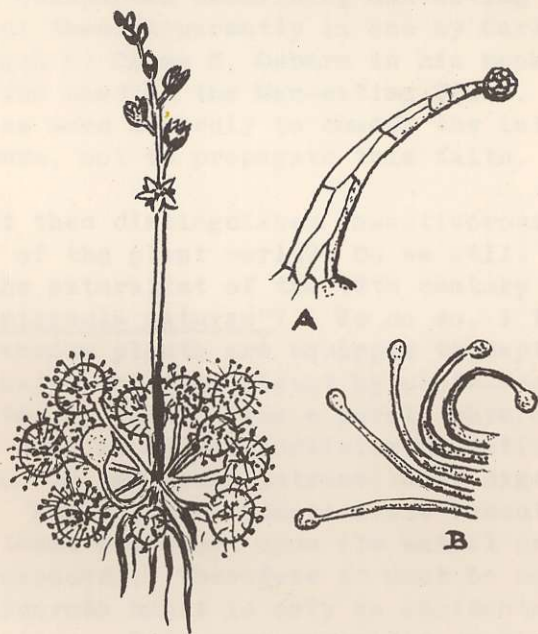


THE VICTORIA NATURALIST



Round-leaved Sundew (*Drosera rotundifolia* L.)

A. glandular tentacle

B. tentacle in process of bending

THE VICTORIA NATURALIST

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COVER PICTUREInsectivorous Vascular Plants of British Columbia

by A.F. Szczawinski

Insectivorous or better known as carnivorous plants have long attracted popular interest. Many of us remember articles that appeared in various popular magazines and newspapers describing man-eating trees. The earliest of these apparently is one by Carle Liche, quoted at length by Chase S. Osborn in his book, "Madagascar, The Land of the Man-eating Tree". This lurid title was used avowedly to enmesh the interest of possible readers, not to propagate this faith.

What then distinguishes insectivorous plants from the rest of the plant world? Do we still share the feelings of the naturalist of the 18th century who regarded them as "miracula naturae"? We do so, I think, because insectivorous plants are equipped to capture insects and small animals, and then digest by proteases and other enzymes secreted by them. From a purely physiological point of view this is an extracellular digestive process -- an exception to the usual intracellular digestion of green plants. None of the insectivorous vascular plants seems in the least dependent upon its animal prey for nitrogenous compounds. Therefore it must be concluded that the carnivorous habit is only an incidental feature of their nutrition. Only some parasitic species of fungi are considered to be obligate carnivores.

There are about five hundred known species of insectivorous plants. A considerable number of these are found in North America, but of these, only a few occur in British Columbia and are represented by the following three genera:

Sundews (Drosera spp.) are small herbs growing in boggy

habitats. Long stalks bearing small white flowers arise from a rosette of leaves. The leaf-blades are somewhat orbicular or spatulate, reddish, and covered with numerous stalked glands or tentacles on the upper surface and margin. Each gland secretes a large mucilaginous droplet which glistening in the sunlight, gives the plant its common name. Small insects are caught and become stuck to a few of the tentacles, and this stimulus causes other tentacles to bend over so that most of the glands touch the body (fig. 1). The same stimulus causes the gland to secrete a protoelitic enzyme that digests certain parts of the insect body. If the stimulus is sufficiently great, the leaf-blade itself may curve around the entrapped insect. The response of the tentacles is rather slow, and several hours are required to complete the bending movement. When the digestible parts are absorbed the tentacles resume their former position and are ready for another victim. It is interesting to note that materials containing no protein fail to stimulate the movement of the tentacles and the secretion of enzymes.

The Aquatic Bladderworts (Utricularia spp.) are delicate, mostly aquatic herbs with submerged leaves usually finely divided into capillary divisions. Its flowers are solitary or several in a raceme at the end of an erect peduncle each subtended by a bract. The leaves are sparingly to copiously provided with small buoyant, valve-lidded, bladder-like structures, 5mm. or less in diameter, which serve as a trap for small crustaceans and other aquatic animals. The traps have trigger hairs attached to a valve-like door, which normally keeps the trap tightly closed. The sides of the trap are compressed under tension, but when a small form of animal life touches one of the trigger hairs the valve opens, the bladder suddenly expands, and the animals are sucked into the trap. At the same time the door closes at once.

While it is true enough that most animals captured by Utricularia sooner or later succumb and are digested, on the other hand it is not yet positively established that there are exceptions in organisms which are able to live and multiply in the restricted space of the interior of the trap, notably Euglena, Heteronemia and others like diatoms and desmids.

Butterwort (Pinguicula spp.) is closely related to Utricularia and belongs to the same family (Lentibulariaceae). The plant consists of a compact rosette of leaves which usually lie flat on the wet, mossy or boggy ground. The leaves are entire, ovate, yellowish or pale green with up-curved margins. They are very soft and "greasy" to touch due to the minute mucilage glands. The flowers are borne singly on slender, glandular-pubescent scapes. The corolla is blue with a slender spur. The plant secretes a digestive fluid on the edges of the upper surface of the leaf which folds over to enclose its prey. The action and effect of the glands is comparable to the action of the tentacles in Drosera.

In summarizing, insectivorous plants are among the most interesting and puzzling creatures, which played a very important role in the life of Darwin and many other biologists.

PACIFIC NORTHWEST BIRD AND MAMMAL SOCIETY

There will be a meeting of the Pacific Northwest Bird and Mammal Society in Victoria on Saturday, November 27. Tentative plans are for afternoon and evening meetings in the Douglas Building Cafeteria on the 27th and a bird field trip on the 28th. Members of the Victoria Natural History Society are welcome. Further information may be had from David Stirling and Dr. Carl.

CONFESSIONS OF A LAZY BIRD-WATCHER

by J.B. Tatum

Yorke Edwards recently confessed to us how lazy a gardener he is. Now I confess to being an even lazier bird-watcher.

A new dormitory has been built for astronomers on top of Little Saanich Mountain, and one Saturday morning at 11 o'clock I was sleeping peacefully all alone on the hill. I was awakened from my slumbers by a deep wooh-wooh-wooh-wooh. Slowly, and without making the effort to raise my head from my pillow, I succeeded in opening both of my eyes. About 4 feet 6 inches directly in front

of my face were a cock and hen blue grouse, the cock giving his full display. Lying in bed, I watched them thus at this close range for 45 minutes. The cock was inflating two great yellow air-pouches at the side of his neck. The yellow surface of the pouches was covered with a fine raticulated pattern of dark markings, and each pouch was surrounded by a ruff of white downy feathers. His yellow eyebrows were raised above his head, his wings were held stiffly downwards and his tail was fanned out over his back. All the time he was hooting to his loved one. R.H. Pough in the Audubon Guide describes also a spectacular aerial display, but I did not witness this.

There are two races of the blue grouse. According to Pough, the Rocky Mountain bird calls from the ground, whereas our Pacific race calls from a tree-top. I have seen the display several times now, and it has always been from the ground or a low stump.

IN SEARCH OF THE TREE-NESTING GYRFALCONS OF THE ANDERSON RIVER

In the summer of 1857 Rodrick Ross MacFarlane explored the Anderson River, the first major northward-flowing stream east of the mouth of the MacKenzie River, on behalf of the Hudson's Bay Company. His route took him up the Anderson to its source in the range of low hills just north of Great Bear Lake. He crossed this low divide, then proceeded west down the valley of the Hare Indian River to the MacKenzie, and thence back to the arctic coast. On the basis of this expedition the Hudson's Bay Company established Fort Anderson in the valley of this river in 1861 for the purposes of trading in furs with the 600 Indians and Eskimos then living in the valley. The fort was abandoned five years later.

During this five-year interval MacFarlane made many observations and records of the bird-life of the region. Amongst the most interesting were upwards of a dozen sets of gyrfalcon eggs, some of which were said to have been taken from tree-nests. As these eggs had found their way to the Smithsonian Institution, and were clearly gyrfalcon eggs, there was no question as to the identifi-

cation of the eggs themselves, but that they actually came from tree-nests remained in doubt.

In the summer of 1964, a full century after MacFarlane, a three-man expedition revisited the Anderson River valley specifically to obtain gyrfalcons, and, if possible, to re-discover, and prove or disprove MacFarlane's reports of gyrfalcons nesting in trees.

The superb color photographs taken by Richard Fyfe in this now completely depopulated valley, including photos of the site of Fort Anderson itself, as well as of the abundant wildlife of a totally unspoiled and virtually unexplored wilderness should make the next general meeting of the Society a most memorable evening.

Photographs by Richard Fyfe, Canadian Wildlife Service.
Talk by Frank L. Beebe; Provincial Museum.

UPSTREAM FLIGHT OF STONEFLIES

by J. A. Chapman

Atkins has included the Plecoptera (Stoneflies) in his series on aquatic insects. This has reminded me of an observation made about 15 years ago, when I didn't appreciate that it wasn't common knowledge. Since then I have searched in vain for accounts of similar observations and feel, therefore, that it should be reported.

One warm summer day, beside Lolo Creek, in Montana, I noticed an unusual flight of stoneflies (species not known). Across the 20 - 25 foot width of the stream one could see a dozen or two of these insects along any line of sight. They were all flying upstream! The flight continued steadily for the few minutes I was there.

Immature stoneflies (nymphs) represent a common and abundant group of stream insects. Many species are well adapted to life in running water, and are able to cling to rocks in spite of considerable current. However, when any such insect loses its hold--and this must happen often at times of heavy stream flow, as during spring run-off, only one direction of movement results--downstream.

Sometimes this downstream movement must be considerable before the insect is able to regain its hold on something firm.

Stoneflies are not strong fliers and don't range widely from the place where they emerge from water, to go through their final moult and become adults. An upstream flight would tend to compensate for downstream movement in the water. It would help to maintain higher numbers than otherwise of these insects in the upper reaches of streams. Presumably these insects would lay at least some of their eggs after their upstream flight. The pattern of water flow could give them the visual cue needed to keep an upstream orientation. Such upstream flight could be one of the many patterns of behaviour in the animal world that help individuals to survive and species to utilize available habitats more effectively. I believe that directional flight of adult stream insects is a subject that merits further study.

PHILIP MARMADUKE MONCKTON

1892 - 1965

"Famam extendere factis"

It is with great sorrow that I announce the death of one of our very valued members and a past President of the Society, Philip Monckton. He was known by all and loved by many members of the Society for his enthusiasm for life in general, his great kindness and delightful sense of humour.

Phil, as he was affectionately called, was born in South Africa and educated in England. At the age of 17, Phil entered articles with a distinguished surveyor and engineer, the late E.A. Cleveland, B.C.L.S., P.Eng., as a pupil in surveying, and after writing his final examinations in 1913, he was awarded his commission (144) as a British Columbia Land Surveyor. He then took a year's course in mining engineering at the University of Washington 1914-1915. War service followed with a commission in the Royal Welsh Fusiliers, 1915 - 1919, after which, having attained the rank of Captain, he returned to resume land surveying in British Columbia, but with his Irish bride, Lavender (nee O'Hara) whom he married at St. Albans in January 1918.

Although not officially a civil servant until 1941, most of Mr. Monckton's professional career was devoted to Provincial Government assignments, mainly on exploatory triangulation surveys in northwestern British Columbia. Place names such as Terrace, Kitimat, Skeena, Nass, Iskut, Stikine, Finlay and Kechika Rivers, Meziadin and Bowser Lakes and Telegraph Creek give colour to his reports to the Surveyor General through the years 1921 - 1940, and indicate the broad ambit of his activities.

In September 1942, after having a year's permanent appointment in the British Columbia Forest Service, Mr. Monckton was granted leave to accept a commission in the R.C.A.F. to perform engineering and surveying duties on the West Coast and later in Quebec Province. He returned to the Provincial Civil Service in November 1944, after which departmental surveys under the Land Act occupied most of his attention until his retirement in 1957. A special assignment in 1947, for which he was eminently qualified, was a reconnaissance survey of possible routes for a highway from Hazelton northwest to the Yukon via the Kispiox, Nass, Bell Irving, Iskut, Stikine Rivers and Atlin. Segments of his proposed location are now followed by the new Cassiar-Stewart Road.

Among those privileged to have associated with Philip Monckton in the surveying business, including men of all ranks -- cabinet ministers, government officials, survey hands, packers, river men, miners, trappers (including natives), he was held in affectionate esteem. A wide versatility of interests, coupled with a remarkable memory, dry humour, and a warm interest in people, made Philip good company in any situation. He possessed a remarkable equanimity which stifled panic in many tight situations in his adventurous career. He could endure extended periods in the wilds with most meagre equipment and rations. Among the Tahltan Indians, this faculty won him the nickname "The Wolverine".

Philip Marmaduke Monckton, British Columbia Land Surveyor, commissioned officer in two wars, is survived by his widow Lavender at home, 2199 Lafayette Ave., Victoria, a daughter, Mrs. (Sylvia) Thomas B. Wilson of Vancouver and a son, Commander George Rupert Monckton, RCN, in Hamilton, Ontario, and seven Grandchildren. An elder son, John Philip, gave his life in action with R.C.A.F. Bomber Command, in February 1943.

On retiring from his profession, he and his wife travelled in their "tin house" to many parts of U.S.A. and Canada, photographing all they saw and recording many bird calls. They had just started on a trip to the eastern portion of the Province when he became ill on the ferry with a heart attack and died in Vancouver General Hospital on October 4th.

In his own quiet way, Phil most certainly upheld the motto of his famous lineage - To extend my fame by deeds. To his widow and lifelong companion and his son and daughter we offer our most sincere sympathy.

E.K.L.

BOOK REVIEW

by R.Y. Edwards

The Living House:

by George Ordish, published by Rupert Hart-Davis, 1960

Here is a really different book, and I recommend it to every naturalist who owns an old house, and to every naturalist who is experienced enough to know that nature is in our attics and on our doorsteps as well as in deep woods and along wild shores. This is a factual story of an old house in England and of the living things, people included, that have dwelt in it through its centuries of changing conditions. Here you will meet bats and moths, spiders and beetles, birds, mice, wood borers, and a lot of others as well. Many are the very species living in your house.

This is a well told ecological story. It tells why clothes moths were sometimes abundant in the house and sometimes scarce, and it tells why a lazy owner had more bats in the attic than his industrious ancestors. And do you know where many uninvited household companions lived before there were houses? Strange as it may seem, your house suits dwellers once confined to the litter in old bird nests, and others came from the floors of caves inhabited by animals. But then maybe this is what one would expect after all.

About once a year I read a book that opens my eyes to things that are in a new world to me. This was my important find of last winter, and I know that Victoria is full of other people who would be equally delighted by it. Don't miss this book. It's in Victoria's shops at \$5.50,

and it is a gem well worth the price if you like facts well told.

THE CITY OF OAKS

by Yorke Edwards

When I answered my phone one day in August, there was a man I had never talked to before, and he wanted to talk about oaks. He was worried. Everywhere he looked the oaks were coming down, and no one seemed to be growing new ones. I agreed with him. All over town, engineers were busy looking after the needs of cars, and forgetting to look after the needs of people, and the trees were coming down to make room for blacktop. And every year all over town, winter storms blow down old trees, and work crews thin out the remainder for a dozen reasons, and no one plants oaks. Some fine old trees that once bordered Uplands Golf Course are a typical example. The creeping blacktop doomed a long row of fine trees, and a bit of Victoria died with those trees. The final act was to plant a new row of trees of mixed ancestry that are about as distinctive as a Cola sign, fancy evergreens mainly, found in every neighbourhood from Burrard to Rotten Row.

Victoria is a distinctive city. Not many cities are distinctive these days, for they all look much alike in spite of desperate superficial attempts to be different. A number of things make Victoria different, and one of the most important is its oaks. These native trees, most of them older than the city about them, have unusually graceful and interesting forms, and they bring into our city streets an informality and a pleasant softening of the urban scene that does much of the doing to make Victoria Canada's most beautiful city. Slowly we are losing our oaks. Suddenly, it will be too late, for fine old trees are not something bought at the local super market with poisons and peatmoss. A hearty old oak is the work of several hundred years of time, time to grow and twist and spread in the winter storms of Victoria, to wither in the summer drought, and to freeze in the short frosts that in some years come briefly to nip off tender growth.

You don't plant an oak like you plant beans, or petunias. There is an entirely different philosophy involved. You plant an oak not for a short, sharp burst of activity that ends almost before you can catch your breath, but for a long, dignified contribution to the neighbourhood.

When I am away and come home, the oaks are the part of the scenery that assures me that I am home. Many people feel this way. Oaks are part of the legend of Victoria's differentness, and sure proof that this is true is found in many a cartoon about Victoria, showing oaks to make sure there is no mistake about where we are.

Every fall I go about pushing acorns into the soil. If more of us would do it, there might be more young oaks about to reassure us. For we need young oaks to be sure that Victoria will be different -- a hundred years from now.

BOOK REVIEW

by Eve Smith

Pesticides and the Living Landscape by Dr. Robert L. Rudd Professor of Zoology at University of California's campus at Davis, headquarters for research and teaching in agricultural sciences.

The author's approach to the problems presented by pesticides, herbicides and insecticides, is implicit in the title -- he truly encompasses the total environment, and writes with an ecologist's understanding of this situation.

For instance Dr. Rudd explains that the word "pests" has no biological meaning ... "a pest species is subject to the same ecological rules governing the survival of any other form of living thing." He points out that man alters, modifies and sometimes simplifies, the biotic community, by altering distribution, numbers and relationships of living things, often creating a pest situation by his own actions. Then he further upsets the natural equilibrium by pouring poison chemicals onto the vegetation or into the land or atmosphere .. "The existence of any species population of animals that is part of the community is contingent on the survival of other species populations of the community, since food and shelter can be provided only by other organic members". Often when we destroy one thing we provide a condition for some other living thing to increase abnormally which we may then call a "pest".

An excellent chapter on "Predator-prey Relationships" presents some of the problems that man has created through a lack of understanding of predation... "Predation is biologically normal, ubiquitous, and with relatively

few exceptions, essential to man's welfare, although that is not immediately obvious to the non-biologist." Dr. Rudd claims, (truly I believe) that there is great misunderstanding on the subject of predation due to ignorance, special interest and conditioned values.

For instance pest control has been conducted by governments for self-interested production groups, disregarding public lands, loss and damage to wildlife and domestic animals -- not to mention damage to other flora and fauna and humans.

"Our attitudes towards predators", says the author, "border on biological nonsense", -- how true!

The Mother Goose stories come in for well deserved criticism in conditioning children to "good" or "bad" animals -- the wolf in "Little Red Riding Hood" and the weasel in Burgess' "Danny Meadow Mouse" give a wrong and distorted picture of these creatures.

This book presents the pesticide problems as fully and objectively as is possible, I think -- it discusses causes and effects, and prevention of pest troubles by biological controls. In this regard I will quote a paragraph from "Oryx" August 1965 (Journal of the Fauna Preservation Society). "More than a dozen insect pests in Canada are now successfully controlled by imported or translocated pests or parasites. This important statement on the success of biological control methods was made by Dr. Bryan P. Beirne, director of Bellesville Research Institute in Ontario. But so far these methods have been tried out on only one percent of Canada's insect pests and no Canadian University has an adequate biological control department to develop research." And this is one research that the chemical companies won't donate grants to!

One wonders if these imported parasites may some day cause trouble! Truly, man has caused himself a heap of trouble by his short-sightedness and lack of consideration for other living things, and we will continue to lay up trouble for the future unless we take a wider view, with a knowledge that all things are inter-dependent, one with the other.

BIRD RECOGNITION COURSE

Beginner birders and those who have begun, who want to improve faster, can sign up for a free course by phoning Murray Matheson at 383-7381. All you need is a "Peterson Guide to Western Birds" and a note-book to write in. Sessions will be on Nov. 10, then on Thurs. from Nov. 18 to Dec. 16. Those who register will receive final details by phone.

MEETINGS AND FIELD TRIPSEXECUTIVE MEETING:

November 2

In Dr. Carl's office,
Provincial Museum, at 8:00 p.m.

GENERAL MEETING:

November 9

Douglas Building Cafeteria,
Elliot Street, 8:00 p.m.
Speaker: F. L. Beebe.
Subject: "In Search of the
Tree-Nesting Gyrfalcons of
Anderson River."

FUNGUS FORAY:

November 6

Meet at Monterey Parking Lot,
1:30 p.m. to go to Francis Park.
Bring Tea.
Leader: Miss M.C. Melburn.

BIRD FIELD TRIP:

November 13

Meet at Monterey Parking Lot
at 9:30 a.m. or Esquimalt Lagoon
at 10:00 a.m. Bring lunch.
Leader: Murray Matheson.

BOTANY GROUP:

November 23

Meet at Provincial Museum, 8:00 p.m.
Speaker: Dr. A. Funk.
Subject: "Fungi of Economic
Importance Affecting
Commercial Timber"

JUNIOR GROUP:

Meet every Saturday at
Monterey Parking Lot at 1:30 p.m.
for field trips.
Leader: Freeman King.

* * * * *

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