

The
Young Naturalist



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The Porcupine — Waddling Pin-cushion



Our Canada Porcupine is an independent, solitary, little fellow. He is called a "waddling pin-cushion" or "the cactus of the animal world" along with other less complimentary names. The names do not have to worry him much: his more than 32,000 quills ensure him respect whenever it is needed.

He could use his teeth to defend himself, and his long, strong claws are powerful too. But he simply moves away on his short legs and lets his back be his protection.

The porcupine has a built-in alarm system in the long sensitive hairs on his back. When these hairs are touched, his quills spring up. This alarm system works even when he is asleep.

He cannot "throw" his quills and he will not ordinarily attack another animal. But the quills on his back and tail have tiny sharp hooks at their outer ends. These become embedded in the skin of the attacker; they are difficult to remove and cause painful swelling. Quills continue to remain deadly even after the porcupine's death.

The porcupine needn't hurry and he seldom does, but his dawdling hides an attention to detail often found in slower natures. Those who have had a porcupine for a pet say they learn slowly but with much less trial-and-error than most animals.

Our porcupine is a rodent and a vegetarian. He is inclined to take long

Ontario Department of Lands and Forests

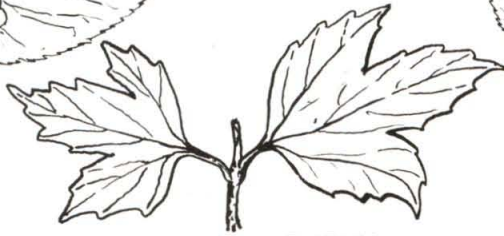
The porcupine has one litter a year of one to four young, but the usual number is one or two. This animal is found from Nova Scotia to the Great Lakes.

See PORCUPINE — Page 3

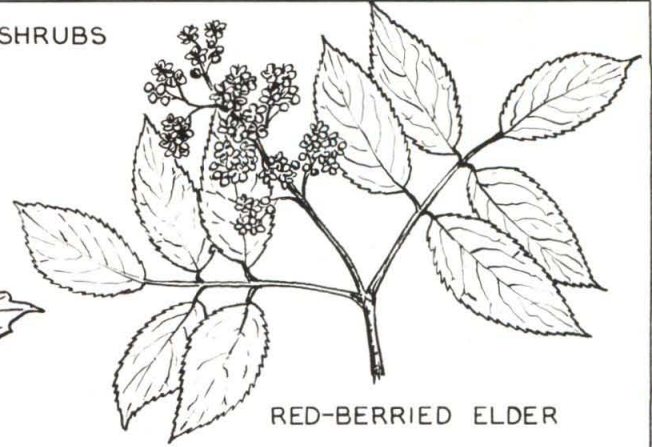
WHITE-FLOWERING SHRUBS



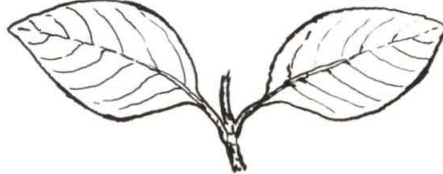
HOBBLEBUSH



CRANBERRY VIBURNUM



RED-BERRIED ELDER



WILD RAISIN



RED OSIER DOGWOOD



HAWTHORN



SERVICEBERRY OR JUNE BERRY

J. M. Millman

Many Spring Shrubs Have White Flowers

In May and June, white-flowering shrubs and small trees become one of the most striking features of the country landscape.

Among the earliest to bloom are the Serviceberries or Juneberries, sometimes known as Shadbush. The flowers are in loose bunches and each flower has five rather long, narrow, white petals, and many short stamens. The flowers are up to one inch across. Other small trees or shrubs of the rose family with similar white flowers are Hawthorn, having long thorns on the branches and leaves with very jagged edges; Sand Cherry, a low shrub of wet sandy places with narrow leaves looking like those of a willow; Pin Cherry, with leaves of regular shape and fine-toothed edges, the bark of larger stems being a shining deep red with horizontal markings or lenticels; Canada Plum, with flowers in clusters

of three or four, faintly tinged with pink. All these have flowers from one-quarter to one inch across with five white petals and many stamens, and the leaves are arranged alternately.

In wetter areas, particularly along stream banks, we find various species of the viburnums. Hobblebush and Cranberry Viburnum or High-bush Cranberry have particularly interesting flower bunches. In the centre of the bunch the flowers are very small, five-petalled and perfect, that is, with all flower parts present. Around the outside of these a border of much larger sterile blooms with showy white petals is arranged, but these flowers have no stamens or pistils. Hobblebush has large, oval, velvety leaves, while those of the Cranberry Viburnum are cut into three deep lobes like a maple leaf. Two other viburnums are Wild Raisin and Nannyberry. These have

smaller leaves with very small-toothed or nearly smooth edges, and they lack the large sterile flowers around the flower bunches.

Dogwood shrubs in Ontario are similar to one another so far as flowers are concerned. These occur in rather small, tight bunches, each flower being four-petalled and having four stamens. The leaves are smooth-edged and the five or more pair of veins tend to follow the leaf edges. Red-Osier has bright carmine-coloured branches and opposite leaves; alternate-leaved Dogwood has alternate leaves, and Red-Panicle Dogwood has red or pink flower-stems and only three to five pairs of veins in the leaves.

If you identify all the above you will have a good start on the white-flowering shrubs of spring.

J. M. MILLMAN

Club News



Club News is a new section of this magazine that will appear with each issue. It will keep you up-to-date on what is going on among the Young Naturalist Clubs of Ontario. Let us hear what your club is doing. This issue features the Kingston Junior Naturalists Club, a club that was formed a few months ago under the leadership of Dr. Fred Cooke. Mrs. Barbara Wilkins is the Editor of *Club News*, and your reports should be sent to her at 213 Rosedale Heights Drive, Toronto 7, Ontario.

YOUNG NATURALIST YEAR

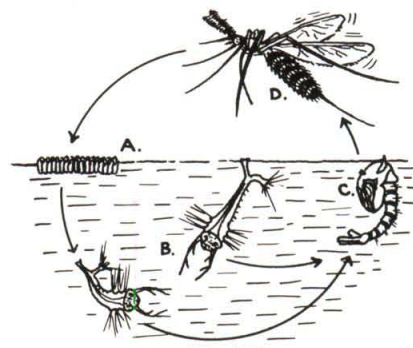
The Federation of Ontario Naturalists has named the period from September 1966 to September 1967, "Young Naturalist Year". The purposes of Young Naturalist Year are two: (1) to establish more Young Naturalist Clubs, and (2) to increase the circulation of *The Young Naturalist* magazine. Try to form a Young Naturalist Club in your community if you do not have one. Information on how to proceed may be obtained by writing to: Federation of Ontario Naturalists, 1262 Don Mills Road, Don Mills, Ontario. Mr. R. V. ("Pat") Whelan, Chairman of the Young Naturalist Committee, has had a long and successful experience among young people who are interested in nature, and he will be very pleased to hear about your activities. His address is: R. W. Whelan, 10 Maryvale Crescent, Thornhill, Ontario.

HOW TO WATCH MOSQUITOES GROW

This is a good month for collecting mosquito wrigglers, but you can actually find them any time from spring to fall, if you look in the right places. Stagnant ponds or woodland pools are usually a dependable source of supply; in the country, rain barrels and water troughs are the best sources.

Wrigglers are, of course, the larvae of mosquitoes. These insects pass through the four stages shown here:

See MOSQUITOES—Col. 3



KINGSTON JUNIOR NATURALISTS

The Kingston Junior Naturalists have been formed as a club for only eight months. We hold one indoor meeting a month and have one or two field trips associated with the monthly meeting.

Our field trips are greatly assisted by senior members of the Kingston Field Naturalists, who willingly donate their time to drive the juniors to suitable localities.

We have only twenty-five members at the moment and thus organization is relatively simple. Apart from the president who is a member of the senior club, we have appointed a secretary, David Edwards, who writes the minutes of our meetings and keeps all our members posted about field trips.

Many of our members are the children of senior members, and so naturally they already have a considerable knowledge of wildlife, but all our members are showing a keen interest, and take it in turn to write reports of our field trips in our record book.

Our technique has been to study a specific topic each month and thus gradually build up a wide knowledge of the countryside. Topics considered so far include fossils, owls, trees in winter, ducks, and spring migration. Later we hope to carry out a breeding bird survey of some woods near Kingston.

FRED COOKE

PORCUPINE—From Page 1

haps by day, then amble toward evening through the gloomy stretches of timber in search of food. He prefers the inner bark of trees, particularly hemlock, but he will also eat leaves and fruits or other vegetable matter. Sometimes he will gnaw a discarded deer horn for calcium to rebuild his chisel-like teeth. As a dessert he'll nibble at buds, flowers, or a lily-pod or two. His quills are air-filled and give him buoyancy.

His great love is salt and this is what gets him into trouble with cottagers. He will chew on axe handles or anything else in which a trace of salt is to be found.

The porcupine does not hibernate. Summer or winter he spends his time climbing up trees and backing down, nipping off tasty branches with his teeth and using his long, curved nails as fingers. What he does not eat, he drops for future use. Many elk and deer profit from the litter he makes under the trees. It gives them food they would never be able to reach otherwise.

Destruction of the bark results in some damage to the forest. However, at an estimated cost of twenty-five to thirty-five cents an acre, it is not a serious loss.

The porcupine matures at the age of two or three years. The young are born singly after an incubation of thirty weeks and within a few months are sent off into the brush or bracken to make a life for themselves.

HELEN ROSS

MOSQUITOES (Cont'd)

- A. eggs (laid on water surface);
- B. wrigglers;
- C. pupa; and
- D. adult mosquito.

We have had good success raising mosquito wrigglers in a wide-mouthed gallon jar. Put a few algae-covered stones in the bottom, pour pond water in until the jar is two-thirds full, then put in a dozen or so wrigglers. Tie a piece of cloth over the top, and keep the jar in a bright window.

Watch the wrigglers to see how they breathe, coming to the surface and

See MOSQUITOES—Page 6

Warblers

OF CANADA

Not without cause have WOOD WARBLERS been called "the butterflies of the bird world." Endowed with a wide variety of colors, patterns and songs, they are always in restless, darting, flickering motion in pursuit of insects. About 40 species occur regularly in Canada. Some are extremely numerous: the REDSTART ranks among our most abundant songbirds. Warblers are small, but many of them undertake long and hazardous migrations between northern Canada and Central and South America.



Some western specialities: TOWNSEND'S WARBLER is flamboyant in yellow and black; the BLACK-THROATED GRAY WARBLER, similarly patterned, lacks the yellow. AUDUBON'S WARBLER has a conspicuous yellow throat and rump; MACGILLIVRAY'S has a gray hood, partial eye-ring, and "crepe" at the throat.

These are easterners: The little PARULA WARBLER is Canada's only yellow and blue warbler. There is no mistaking the blazing head and throat of the BLACKBURNIAN WARBLER. The CHESTNUT-SIDED and BLACK-THROATED BLUE WARBLERS are both perfectly named.



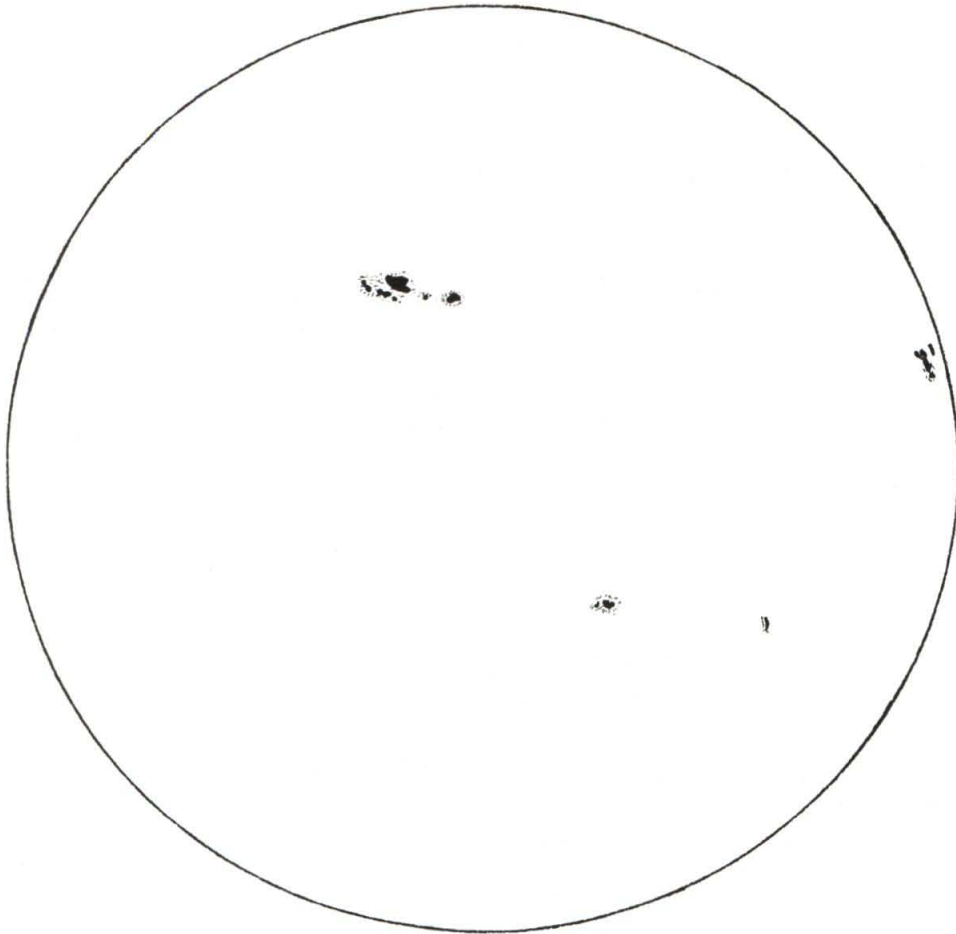
Note: Males only are illustrated—one-half actual size.



This group is more widespread: The handsome YELLOW WARBLER is found from British Columbia to Newfoundland and in winter as far south as Peru. The very different WILSON'S WARBLER has a striking black cap. The REDSTART has the habit of fanning its brilliant orange and black tail open and shut, while the black mask of the male YELLOWTHROAT identifies it. Notice the big white patches in wing and tail of the black and yellow MAGNOLIA WARBLER, while the CAPE MAY WARBLER is our only warbler with chestnut cheeks. The yellow cheek of the BLACK-THROATED GREEN WARBLER is a good mark, while the BLACK-AND-WHITE WARBLER shouldn't be confused with anything else.



J.F. LANDSLOWNE



A sketch of the Sun during the time of sunspot maximum. Each spot consists of a dark central region, the umbra, surrounded by a fainter area, the penumbra. On this scale the Earth could be represented by this small circle ●.

How to Observe Sunspots

The Sun is our nearest star. Because it is so close we are able to see many details of its surface. Among the features that we can see are the "sunspots". These are relatively dark markings on the Sun's surface that indicate the presence of storms on the solar surface. The number of sunspots that can be seen changes with time, and the count seems to reach a maximum every eleven years. Thereafter the number declines for a period. At the present time the number of spots is approaching a maximum, and for the next few years we can expect to see at least one sunspot almost every time we look for them.

There is a very simple and safe way for you to see sunspots, but first take note of this warning: *Never look di-*

rectly at the Sun. It is very harmful to view it through binoculars, a telescope, or even with the naked eye! Everyone has seen what happens when a magnifying glass is used to focus the rays from the Sun on a piece of paper: the paper quickly begins to burn. The same thing will happen if you look directly at the Sun; the sunlight will come to a focus on the retina of the eye, and this can lead to serious eye damage and possibly blindness. The safest way to look at the Sun is as follows:

Find a large room in your house, such as a bedroom, that has a window facing south. (A garage or the hayloft of a barn is even better.) Completely cover the window with cardboard or a piece of heavy paper so that

the room is fairly dark. Now, make a small pinhole in the window covering so that a narrow beam of direct sunlight can enter the room. Place a piece of plain paper in the beam of sunlight and you will see an image of the Sun. If there are any sunspots these will be visible as well.

If you do see a sunspot, make a sketch of the Sun's image and mark the position of the spot. Repeat these observations for several days and you will see that the positions of the sunspots seem to change from day to day. This occurs because the Sun rotates as does the Earth, but whereas the Earth requires only one day to make a complete rotation, the Sun requires twenty-seven days. As an interesting summer project, you might keep a day-to-day record of the numbers and positions of the sunspots.

The pinhole in the window covering should be fairly small in order for the images of the Sun to be sharp. Also, the greater the distance from the pinhole, the larger will be the image of the Sun. As an example, if the distance from the pinhole is ten feet, the diameter of the Sun's image will be approximately one inch. If the distance from the pinhole is twenty feet, the diameter of the Sun's image will be two inches, and so on.

DOUGLAS P. HUBE

MOSQUITOES — From Page 3

pushing the breathing tube above the water. Watch to see what they eat.

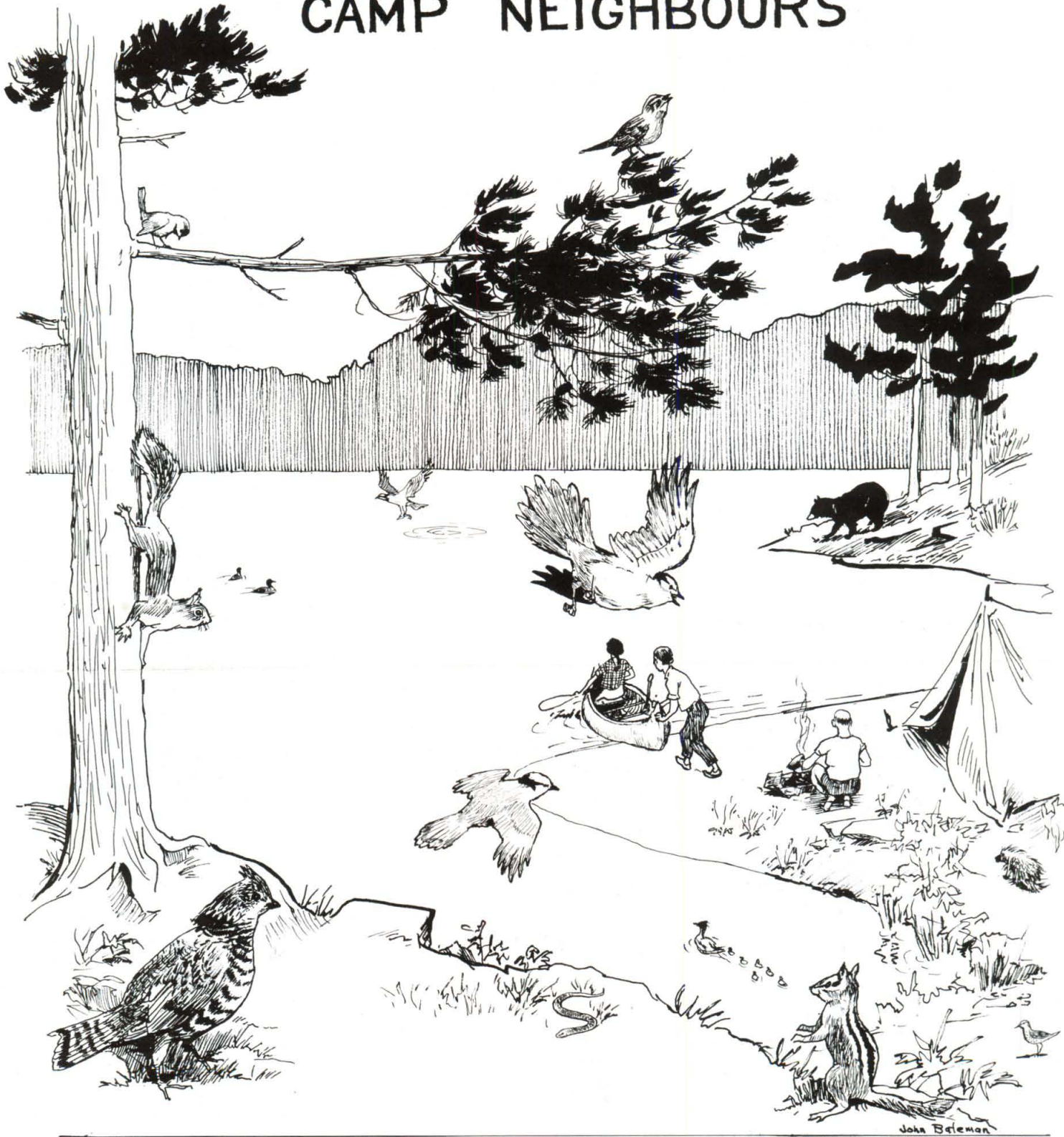
In a few days you will see the comma-shaped pupae. Unlike the sleeping stage of most other insects, these pupae move about actively.

Keep a record of how long it is before mosquitoes appear. If you want the adults to reproduce, they need food. We have found that they don't have to have blood, as one might suppose. Try soaking a few raisins in water, and hanging them inside the mouth of the jar on paper clips which can be opened up and bent to serve as hooks. The mosquitoes feed on the juice of the raisins.

Under suitable conditions you may be able to raise two or three generations of mosquitoes in this observation jar.

H. G. HEDGES

CAMP NEIGHBOURS



Brown-Capped
Chickadee

Red Squirrel

Ruffed Grouse

Common Loons

Osprey

White-Throated
Sparrow

Canada Jays

Red-Bellied
Snake

Black Bear

Red-Breasted
Mergansers

Chipmunk

Porcupine

Spotted
Sandpiper



WOODLORE

FOR THE NATURALIST

Canoemanship

Good canoemanship must be achieved before you undertake a canoeing-camping trip. Learn it in safe, shallow water where upsets won't matter too much. The ability to swim well is a part of canoemanship.

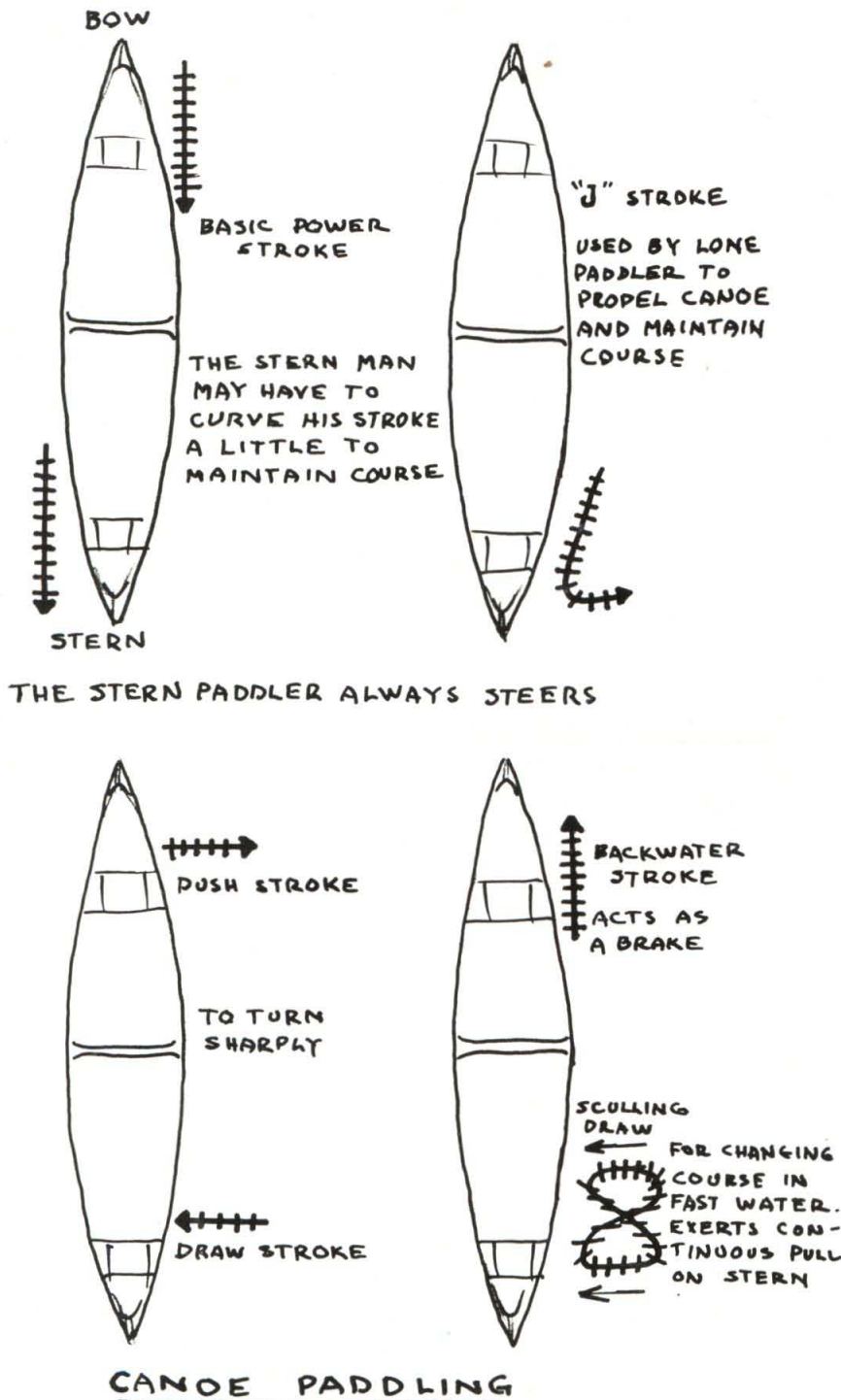
A good two-man canoe for tripping is a pointed model 16 feet long, 34 inches wide, and 13 inches deep. The material from which it is made — aluminum, fiberglass, or canvas-covered cedar strip — is a matter of personal preference, for all have their advantages and disadvantages.

The canoe should carry a life-preserver for each occupant, and these should be worn in rough water. Take along a repair kit consisting of canvas patches, cement, and a roll of wide adhesive tape. A spare paddle is good insurance. A long rope attached to the bow is useful, and a flashlight is essential if there is to be night travel where power boats operate. A canoe box fitted to the canoe is a handy item on a canoeing-camping trip.

In loading, keep the weight centred and low by placing the heaviest items on the bottom and the lightest on top. When a canoe is empty or only lightly loaded, the paddlers may have to kneel to keep the centre of gravity low. If only one man is paddling in rough water, it may be preferable to load the canoe bow-heavy; otherwise, slightly stern-heavy is best. A loaded canoe should have not less than six inches of the sides above water.

Stay off lakes in windy weather. Large open stretches are most likely to be calm in the early morning. Only the most experienced *canoeman* should attempt to run down rapids.

JOHN MACFIE



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