HANDICRAFTS SERIES No. 5

SMALL ANIMAL SCULPTURING

Creative HANDICRAFTS

McGILL UNIVERSITY
ADULT EDUCATION SERVICE

HANDICRAFTS DIVISION
MACDONALD COLLEGE, P.Q.

Macdonald College Handicraft Pamphlets
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The Principal Product of a Handicrafts Program should be Better People

Better people because of the greater knowledge of their own latent talents for creative work.

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Better homes because homes can be tremendously enriched by the innumerable articles that can be designed, knitted, woven, carved, thonged, moulded by the members of that home.

Better communities because an active handicrafts program encourages a community handicrafts centre where people can work together, use equipment in common, exchange ideas, hold exhibitions and become better acquainted.

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"Every rise in the quality of the work that men do is followed swiftly and inevitably by a rise in the quality of the men who do it."

March, 1944

SMALL ANIMAL SCULPTURING

by

JOHN L. BRADFORD

Founder-President, Atlantic Wood Carvers Guild

Introduction

A living tree is one of Nature's most beautiful gifts to man. Indeed, it is hard to visualize a treeless world. Quite frequently a single adult shade-tree provides home, food and shelter for myriads of birds, reptiles, small animals and insects which might otherwise perish. But the point that concerns us is the fact that a tree is a beautiful thing, living or dead, standing, or felled and converted into grain-traced timber, with its knots and whorls, its lace-like grain designs, and its variations of density and colour.

But the beautiful tree we speak of need never die, so long as the artist has the will to prolong its life, and even the lives of its numerous inhabitants. From its dried and seasoned wood, each of its birds, reptiles, animals, and insect associates may be brought to life with the aid of a common jackknife, a little patience and determination on the part of the hand that wields it.

This pamphlet deals with wooden thought-pictures and how to bring them into being. It strives to show you how you may hold a memory or a dream in your hands and watch it take form. If you are interested in carving tropical creatures, unusual butterflies, snails, or microscopic animals, numerous illustrations will be found in Natural History books which you can get from your nearest library. Your objective, however, should be to carve from life. Doubtless, it will be some time before you can do this, but the objective should always be borne in mind.

Equipment

The principal materials needed for small wood sculpture include a jackknife, a small water stone and a small "medium" oil stone; three grades of sandpaper known as Nos. 1, ½ and 2/0—for our purpose, coarse, medium and fine; shellac or a suitable substitute; industrial alcohol; any available varnish or oil stains; boiled linseed oil; powdered pumice; several soft water colour brushes and a few squares of cotton and flannelette.

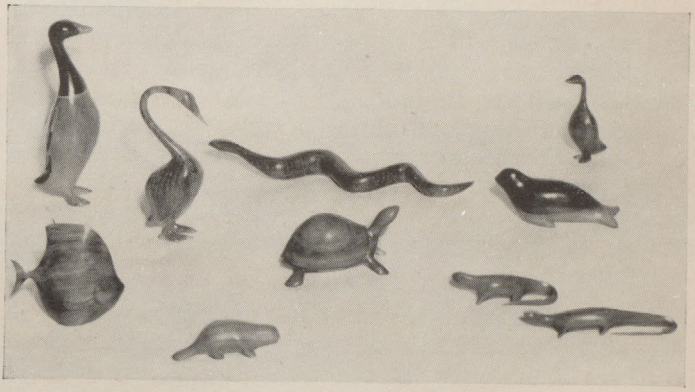


*Plate 1. A collection of wooden animals, fish, and fowl beautifully carved by the author.**

While the items listed are necessary to complete this type of highly finished work, a knife, a block of wood and a piece of sandpaper comprise a complete working kit for a day's activity. This simple, clean and inexpensive outfit may be carried in one's pocket.

Woods

Canadian white pine is one of the best and most easily obtainable carving woods for the beginner. Your local woodworking plant will probably give you all the waste ends and strips you need. If not, buy various lengths

*Captions were written by the editor.

for making birds, penguins, beavers, turtles, snakes, fish, lizards, elephants, etc. See the price list of various kinds of woods on page 16.

In arranging your sketch on wood, much attention should be given to the grain and its direction. The grain of the wood should run lengthwise of a figure to be carved. In a snake, it should run along the body from nose to tip of tail. In a bird, elephant or similar upright figure, the grain should run up and down. There are cases where the grain is not perfectly straight but slightly diagonal or wavy or even knotty. This is sometimes an advantage; study the figure you wish to carve and the wood from which to carve it. Can you take advantage of peculiarities of the grain, and knots and color?

Plate 2. Another collection of exquisite carvings. Study the individual sculpturings in these plates for they are masterly pieces.

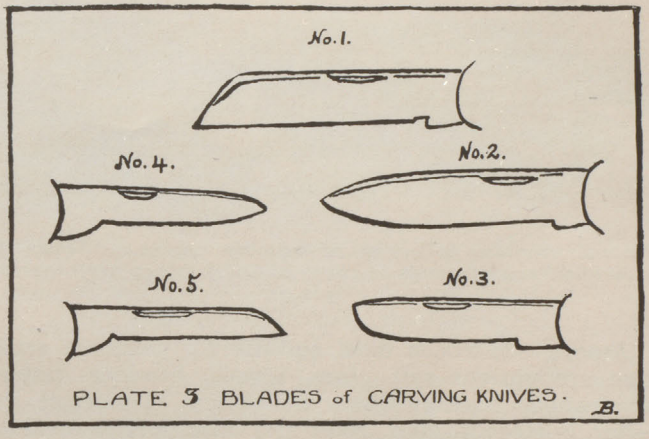
Among the woods most suitable for jackknife sculpture are various soft pines, spruce, hemlock, poplar, whitewood, bass, walnut, mahogany, Tennessee red cedar, butternut, gum, apple and other soft to medium-hard kinds. For fancy grain effects and color contrasts, red cedar and butternut are recommended. Apple, which runs from white to yellows and browns, is fairly hard, and is one of our most beautiful woods. Yellow and white birch are difficult to cut but take a splendid finish. Red cedar offers wonderful color contrasts when a white beak or breast for a bird, or white fins or belly for a fish are sought in combination with its purple-red heartwood. Knots and similar irregularities can suggest eyes and other features. Striking feather effects in natural wood

can be obtained from dry rot in pine, and moderate to brilliant color formations appear in blue stained pine and spruces.

Hard woods will soften in water over night, and should be carved while wet. Boiling newly cut or "green" wood for a few hours permits drying without the usual scoring or cracking which otherwise occurs.

Knives and their care

Plate 3 shows five types of jackknife blades that are very useful in wood carving. If blade No. 1 cannot be obtained, blade No. 2 can be ground down from the top surface to meet the cutting edge, forming a fairly sharp



point. Blade No. 3 has its cutting edge all around its end and is useful for gouging and similar purposes. Blade No. 4 is handy for reaching difficult places and for smoothing off bumps before sanding, or for work on delicate carvings. Blade No. 5, though rarely found in standard knives, is especially useful for making deep, clean cuts, for reaching difficult places and for boring. The most useful blades are Nos. 1 and 2, the former for general chipping and deep cutting, the latter for heavy surface chipping.

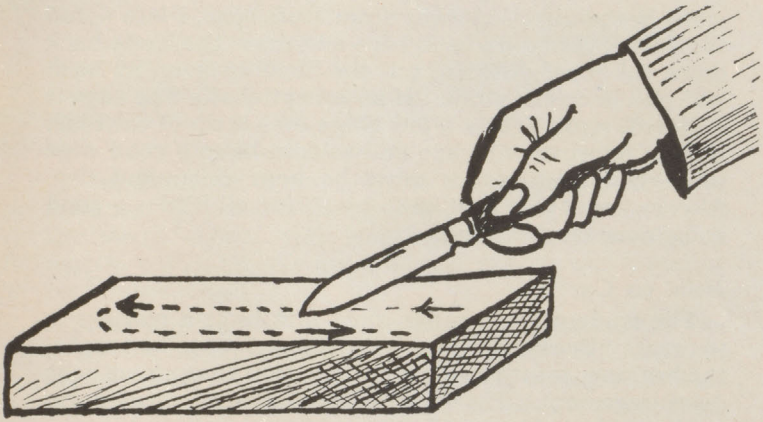


PLATE 4.

SHARPENING THE KNIFE.

The Macdonald College Handicrafts Store has obtained sets of the types of knife blades shown in plate 3. They are made of heavy saw steel. Holes are drilled so that you may attach your own handles directly to the solid flat steel shaft which runs the full length and width of the handle. (See page 16.)

Heavy rigid blades do the best work and retain the edge longest. Light flexible blades are hard to manage and seldom cut deep. Avoid deep sweeping cuts at first, however, because any wood that is removed cannot be replaced. Allow your work to take form slowly and gradually by carefully removing smaller and smaller chips as the carving nears completion.

Blades must be kept *keenly sharp* at *all times*. Use a medium or fine carborundum oil or water stone. The back of the blade should be tilted slightly on the stone. Holding it obliquely across the face of the stone, use light pressure and rub the blade straight back and forth. Now turn the blade over and repeat.

Another way to produce a good edge is to rub the blade on both sides alternately. Start upward along the

stone in the direction away from knife edge, Plate 4, roll the knife over on its back edge and draw the blade back down the stone. Again, roll the blade over on its back and pull it up the stone. If an exceptionally fine edge is required, strop lightly a few times on a strip of cowhide. Knives improve with age and seldom have a good edge when new, but blades must be kept clean and dry. Always break in a new knife by giving all blades a good going over on the stone.

How to Carve

The student woodcarver must first have a real desire to create. Because it is easier to learn than to be taught, the beginner must have a determination to work without discouragement. He must keep at it until articles are made to his or her satisfaction.

In choosing a subject, remember that you are a beginner and wish to avoid complicated or difficult cuts. Suppose you choose a small animal or fish. If you can't retain a mental picture while carving a subject, make a

Plate 5. The graceful bird carvings show the skilful selection of the grain of the wood and application of stain.

rough sketch on a sheet of paper, leaving out small details as eyes, ears, nose and toes. Imagine your subject some distance away and that you see it in outline only. Decide how large your finished carving should be, and choose a piece of soft pine, about a quarter inch larger each way from which to carve.

The direction of the grain is an important factor in carving. If your animal is low and long, the grain of the wood should run lengthwise or horizontally; if narrow and high, the grain should run up and down or perpendicularly.

Sketching on the block is usually unsatisfactory because the sketch lines are soon cut away; but sketches are useful to make outlines for cutting straight through the wood, in subjects as snakes and fishes. After that, refer to your sketch on paper or your imagination, adding details or making corrections as your carving progresses.

Go slowly and cautiously. Make your cuts shallow and chips small, allowing your subject to take form gradually. At the beginning, make three cuts of what you are tempted to do in one. Avoid cutting against the grain if possible, but if the knife blade is as sharp as it should be, it will cut up-grain at an angle, upwards, downwards, or sideways. If the cut leaves scratches or streaks on the wood, the blade is dull. The carver soon learns that proper handling of grain is a matter of *feel* or *touch*.

While carving, the knife should be held between the palm and the middle joints of the fingers, when the blade is moving toward the body, plate 6. This swings the blade in an arc, thus avoids cutting the thumb which is just below it. Furthermore, the strain of carving is placed on the knuckle and hand muscles rather than on the wrist. This is less tiring and reduces danger of cuts. As the skin and muscles harden and control improves, the carver can easily make desired cuts with precision.

When cutting away from the body, hold the knife in the crotch of the thumb, plate 7. Never face anyone at close quarters while cutting, thus you will avoid injuring your neighbor. Another word of warning: never leave blades lying about with blades open, close

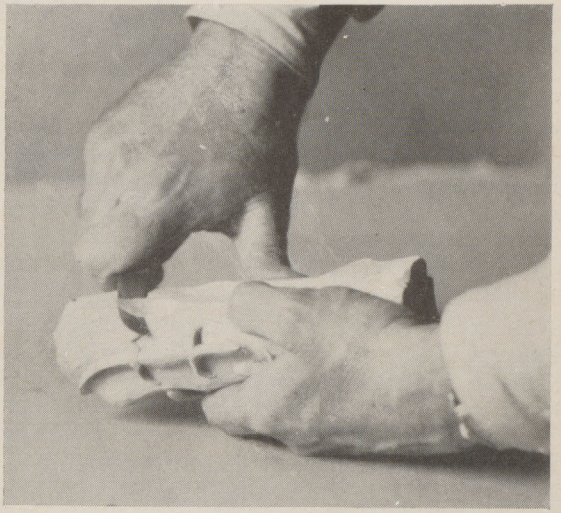


Plate 6. Holding the knife for making inward cuts.

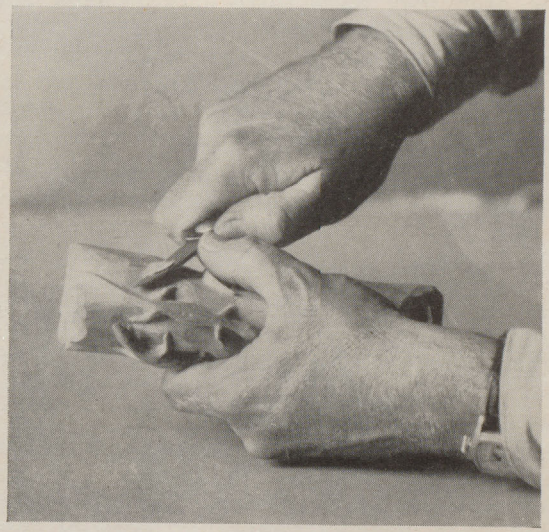


Plate 7. Holding the knife for making outward cuts.

Courtesy Canadian Art Magazine.

them as soon as the work is finished. If you are using solid knives as supplied by Macdonald College keep them in a leather sheath or box when they are not in use. As a further precaution, it is also desirable to keep iodine, absorbent cotton, bandage and adhesive or Band-aids within easy reach. Should the skin chafe or blister, adhesive tape will give excellent protection.

If a sculpture breaks or cracks, as they will from time to time, do not throw it away. A thin application of glue to separated surfaces often knits them stronger than the original. If the surface glue is carefully wiped from a joint when pressure is applied, the union is scarcely visible. Gluing may be done at any stage of the work, and the glued section may be safely chipped or cut, but only after it is thoroughly set. Fish glues are best; mucilage and paste should never be used. If cracks appear in your carving, fill them by working glue well into the crevices with a knife blade.

When starting to carve the three simple illustrated objects, the snake, the penguin and the tropical fish, study the drawings and photographs, and refer to them frequently as your work progresses. This is an invaluable guide for you.

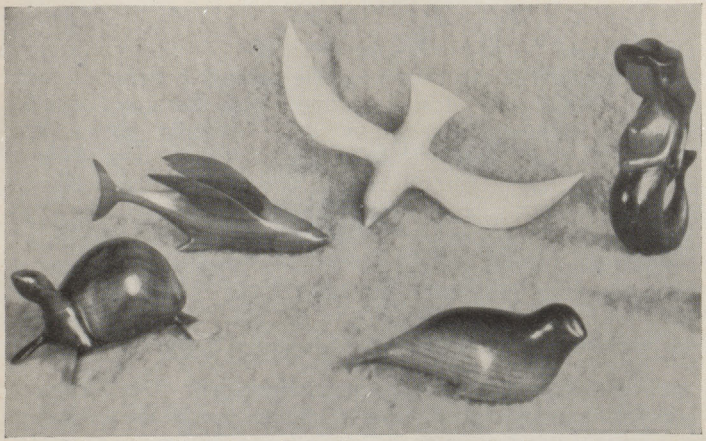


Plate 8. These carvings demonstrate the importance of carefully formed lines.

Finish

It is a pity to cover the natural beauty of wood with paint. On the other hand, stains can be applied to such colorless woods as pine, spruce, hemlock, and still leave the fine grain effect clearly visible.

Varnish or oil stains or water colors may be applied to wood carvings. When stains are thoroughly dry, follow by light sanding with fine sandpaper or rub the finish lightly with boiled linseed oil and pumice. To do

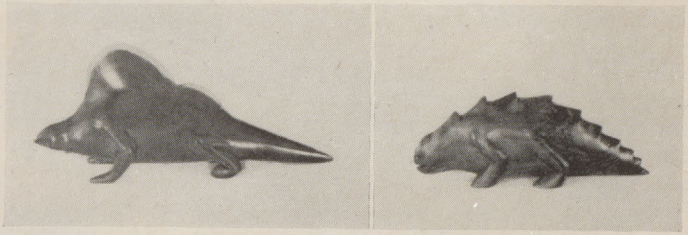


Plate 9. Lizards like these are found only in Natural History books. You can find pictures of many other kinds of prehistoric animals, butterflies and snails in books in your library.

this, place a bit of cloth over the end of the index finger, dip lightly in oil and then let some pumice powder adhere to it. Rub the oil and pumice well into the wood. Leave it half hour and remove excess pumice with a dry cloth. Now apply a coat of shellac or substitute. When dry (in about 2 hours) repeat the pumice treatment. Follow with an application of 50-50 mixture shellac and alcohol. Let dry and give a light oil and pumice rubbing. Repeat several times, polishing briskly with a flannelette each time the pumice is removed. Remember that your *last* operation will *always* be a light pumicing followed by prolonged polishing. The sculpture is now finished.

As stains would kill the natural beauty of red cedar, butternut, mahogany, walnut, gum, apple and choice pieces of such woods as basswood and whitewood, these should be given a natural finish.

To do this, first apply a coat of *boiled* linseed oil, taking care to cover uniformly the entire surface. Wipe dry until there is no sign of oiliness, then brush the entire surface with very fine sandpaper. Clean with a dry cloth and apply a coat of white shellac, followed in rotation by pumicing, and the same process of 50-50 shellac and alcohol, pumicing between each coat, as described for stained pieces. Finish as usual, by pumicing and polishing.

Floor wax produces a soft, velvety finish. Apply a coat directly to the wood and after allowing it to dry for a few minutes, polish with a flannelette cloth. Apply

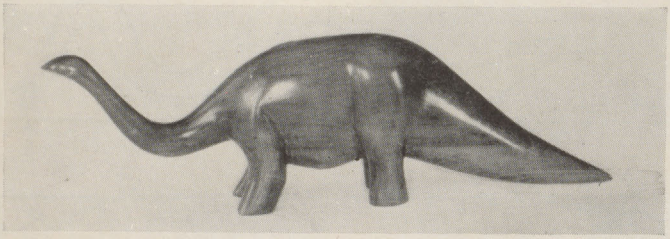


Plate 10. This dinosaur, too, is a creature of the past but he is a fine subject for wood sculpturing.

additional coats at 2 to 6 hour intervals until a fine polish is obtained.

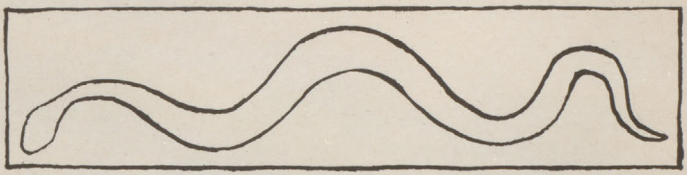
You can make your own polish by shaving beeswax into a glass jar, adding enough turpentine to cover the shavings and placing the jar in the sun until the ingredients form a paste. The density of this polish is controlled by the amount of turpentine added. It should be applied like floor war.

Carving a Snake

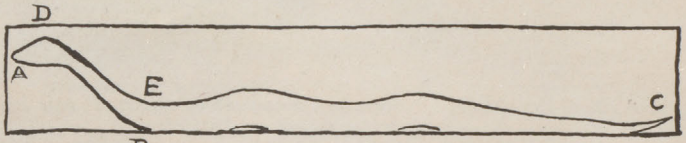
The snake in plates 1 and 12 is really very simple to carve. It is suggested that you make several of these and become thoroughly familiar with all types of cuts before moving on to the next subject.

Block No. 1, plate 11 shows a snake $8\frac{3}{4}''$ long x $1\frac{3}{4}''$ across its widest point, traced on a piece of pine 9″ long x 2″ wide x 1″ thick. Block No. 2 shows the elevation of head of the same snake.

The first step in carving it is to cut away the wood along the sides of the sketch in block No. 1. The snake now appears like a silhouette when seen directly from above. The next step is to shape the body. Cut from the back of the head (D) to thickest part of the body (E) and gradually taper the body to a point at extreme tip of tail (C). Now cut upwards from point (B) (underneath



Block No.1.



Block No.2.

PLATE 11. TOP and SIDE VIEWS of a SNAKE.

Plate 11.

Plate 12. A polished wood carving of a snake.

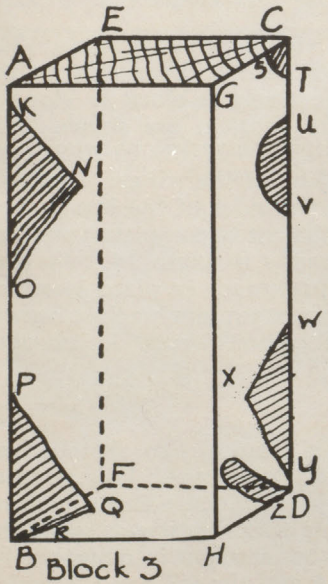
the head where the body first touches the ground) in a sloping direction towards (A) to form the underside of head. Carefully round off the body to a slightly oval shape. Shave down all bumps and smooth with No. 1

sandpaper, then No. ½, finishing off with No. 2/0. Your snake may be stained to lifelike reality as suggested on page 10.

Carving the Penguin

The blocks shown in plate 13 are 5½″ high by 2½″ x 2½″. The finished penguin would measure 5½″ tall, 2¼″ from wingtip to wingtip, 1¾″ thick through centre and 2″ from tailtip to toetip.

Block 3. The angle or corner of the block is used as a centre line passing down through the tip of the beak, the centre of the breast and midway between the feet. Sketch in lines K-N-O and P-Q-R on either side of the corner line A-B. Make cuts K-N, O-N (slightly curved), P-Q and R-Q, removing the shaded portions. You will note from the drawing that the cut P-Q is steeper than the cut R-Q.



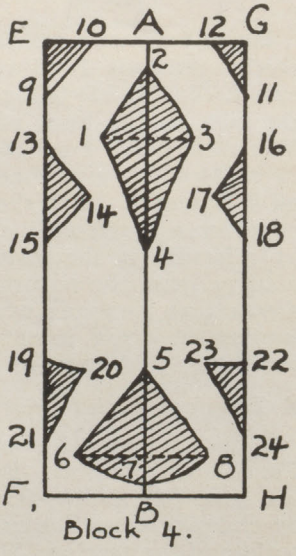


PLATE 13. THE PENGUIN.

Sketch roughly the straight and curved lines S-T, U-V, W-X-Y and Z the "U" shaped cut below Y, on both sides of the centre line C-D. Remove the shaded portions. This forms the back of your penguin; T-U is the back of the head, V-W its back; and X-Y and Z make the shaped cuts which form the tail.

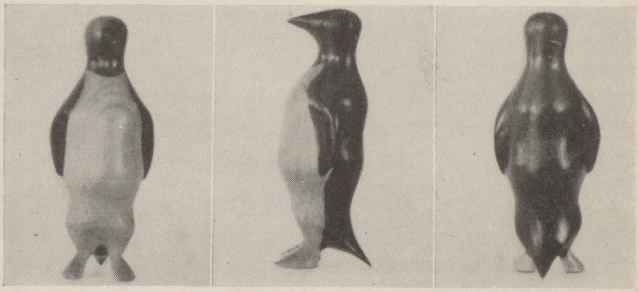


Plate 14. Three views of a penguin.

Block 4 shows a full-face view of your penguin. The shaded portions 1-2-3-4 and 5-6-7-8 correspond to the cuts K-N-O and P-Q-R respectively in block 3. None of the cuts in the back of the penguin are shown here. You now make cuts 13-14-15, 16-17-18, 19-20-21 and 22-23-24 which give the outline of the wings. Next cut off 9-10 and 11-12 to shape the sides of the head. You now have a rough outline sufficient to complete your bird by referring to the photographs in plate 14. To give your penguin the natural appearance in plate 14 which shows three views of a penguin, stain him black or brown, leaving the breast in natural colored wood. Polish your carving as told on page 10.

A Tropical Fish

Block 5, plate 15 shows a tropical fish sketched on Canadian white pine. It is 4″ wide by 4″ long and not less than ¼″ and preferably ½″ thick. Begin carving by chipping away the surplus wood until you reach the outline of the tracing. Now cut straight in along the fin outline, enclosing the space A and the gill line 1-2, which are the same on both sides of the fish. Cut inward along

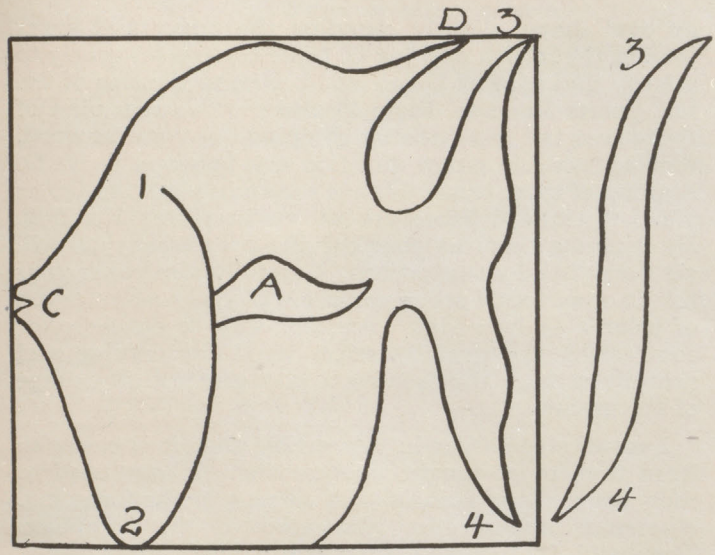


PLATE 15.

OUTLINE of TROPICAL FISH.

these lines to give form to the gills and fins. Next chip away the edges from both sides so as to give your fish

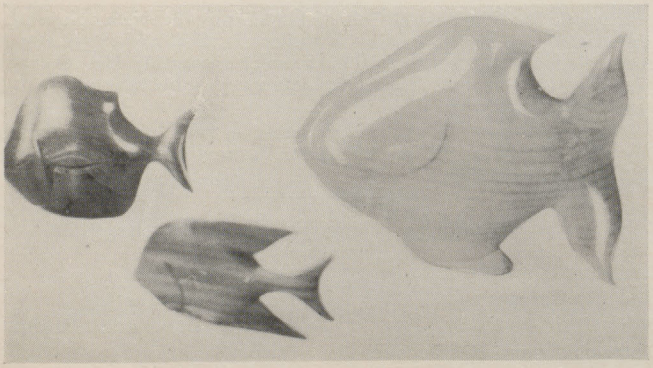


Plate 16. These three types of tropical fish are made of different woods.

an oval shape, slightly rounding the upper and lower jaws at the mouth opening C, taper the top fin gently to a fairly thin edge at D and do likewise to the tips of the tail, points 3 and 4. Plate 15 also shows a rear view of the curved tail 3-4 made by chipping away excess wood. Similar twists in either direction can be given to fin D. A group of three tropical fish is shown in plate 16. Other views of tropical fishes are shown in plates 1 and 2. By studying them as your carving progresses, you will get many helpful suggestions. Carefully sandpaper your fish to a smooth flowing surface. If you wish, a touch of color may be added. Another way to obtain color contrasts is to carefully select wood for carving and skilfully arrange the drawing to take greatest advantage of the grain.

I mentioned earlier in this article that it is easier to learn than to be taught woodcarving. I have tried to show some of the principles of carving in the foregoing. Numerous animals are illustrated in the pamphlet. They will furnish you with many ideas for carving. Of course each undertaking will introduce new techniques and present problems which are to be overcome. The fascination of sculpturing in wood is never ending.

PRICE LIST (Prices are subject to revision).

Knife blanks of fine heavy saw steel: Nos. 1, 2, 3, 4 or 5, each (Each blade is carefully ground to shape and sharpened, the steel continues as a solid flat piece and has 3 small holes drilled in it for attaching your own style handle.)	$0.60
Norton carborundum hone 4" x ¾" x ⅜", each	.15
Pumice powder, per ounce	.02
Sandpaper—Nos. 1, ½ and 2/0,—4 sheets	.05
Boiled linseed oil, ½ pint bottles	.15
Shellac or substitute, ½ pint bottles	.45
Beeswax, 1 oz. blocks	.10
Oil stains, ½ pints in light oak .45; walnut or mahogany	.55

KITS FOR CLASS OF 10 STUDENTS—$10.00

10 blades No. 1.
20 pieces white pine for snake.
15 pieces white pine for penguin.
15 pieces red cedar for tropical fish.
12 pieces sandpaper (4 each of Nos. 1, ½ and 2/0).
½ pint boiled linseed oil.
½ pint shellac or substitute.
1 oz. pumice powder.

Prices of wood

Animal	Size in Inches	Varieties 1 to 10	Varieties 11 and 12
Snake	9 x 2 x 1	.05	.08
Fish	4 x 4 x ⅜	.03	.05
Birds, Cow	4 x 3 x 3	.12	.18
Elephant, Dinosaur	3 x 3 x 3	.10	.15
Turtle	3 x 2 x 2	.05	.08
Beaver, Seal	6 x 2 x 2	.09	.14
Lizard, Penguin	6 x 3 x 3	.15	.22
Gull	4 x 4 x ¾	.05	.08

1. White Pine; 2. Tennessee Red Cedar—1" stock only; 3. Cypress; 4. Spruce; 5. Birch; 6. Canadian Basswood; 7. Tulipwood or Whitewood; 8. Oak; 9. Maple; 10. Cherry; 11. Black Walnut; 12. Mahogany.

PRICES OF THIS PAMPHLET

1 to 5 copies	10c. each post paid
6 to 25 copies	9c. each post paid
26 to 100 copies	8c. each plus postage

Other prices on request.

Address: Handicrafts Division, Macdonald College, P.Q.

THE PURPOSE OF THIS SERIES OF PAMPHLETS

About 90% of our boys and girls will earn their livelihood, after they leave school, by the skilful use of their hands. Because they have had little experience with which to guide them in selecting work suitable to their talents, many of them take essentially the first job that they can get. Under such conditions the first job is usually a short one. By a trial and error method, often covering a period of years, they find positions which they hold for life. In many cases the work is not really suited to their natural abilities.

Handicrafts offers one means of meeting this great problem. The opportunity to learn a range of crafts provides a means of discovering natural talent. This talent may be in woodwork, metalwork, leatherwork, weaving, pottery, or in design. A person who has talent in a certain craft or phase of a craft will find greatest pleasure and productiveness in a position where that talent can be used to advantage. The nation needs all the natural talents available for its Industries, Arts and Sciences. Hence all will profit when talent finds its useful outlet. Handicrafts in the schools, churches, homes, scout rooms, etc., will give to young people an opportunity to find the sort of work in which they will produce best and be happiest. This pamphlet is one of the arrows pointing the way.