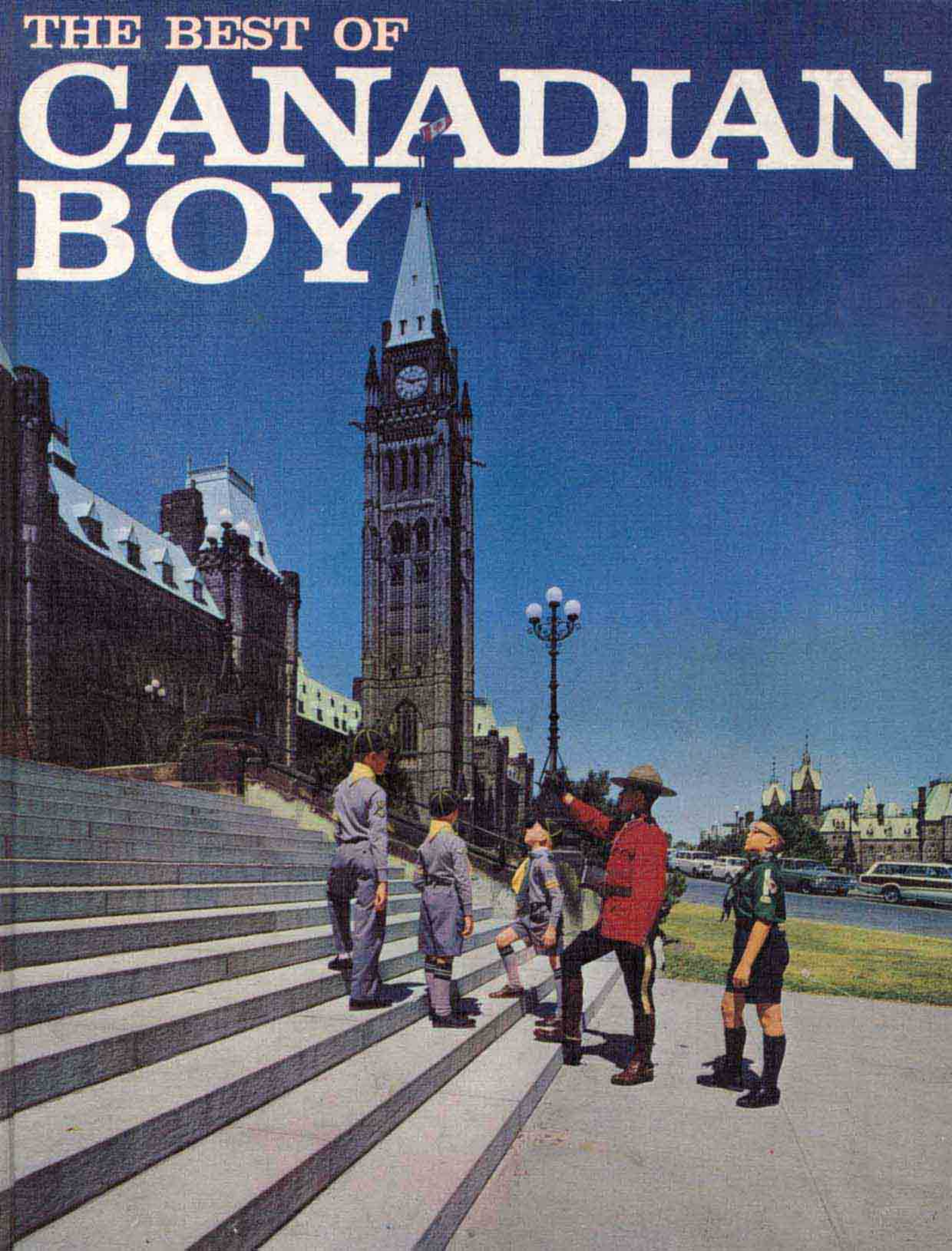
THE BEST OF CANADIAN BOY



THE BEST OF
CANADIAN BOY

Selected by the editors
of Canadian Boy magazine

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FORWARD

In the two and a half years Canadian Boy has been published, we have received many letters from readers with a single thought in mind. They asked, "Why don't you make a real hard-covered book from the best stories appearing in Canadian Boy?"

As you can see, we have. Reaching back right to the first issue which appeared in January, 1964, we tried to select the combination of stories that best represented all that we have published in Canadian Boy. On the pages ahead, you'll find fiction that's funny, suspenseful or mysterious. You'll find articles that tell you how to be better at sports, how to keep fit, how to make things. There are features on hobbies, history, Scouting, the outdoors, and, naturally, jokes.

We've also added a bonus. In this book you'll find several new, never-before-published stories from the files of Canadian Boy.

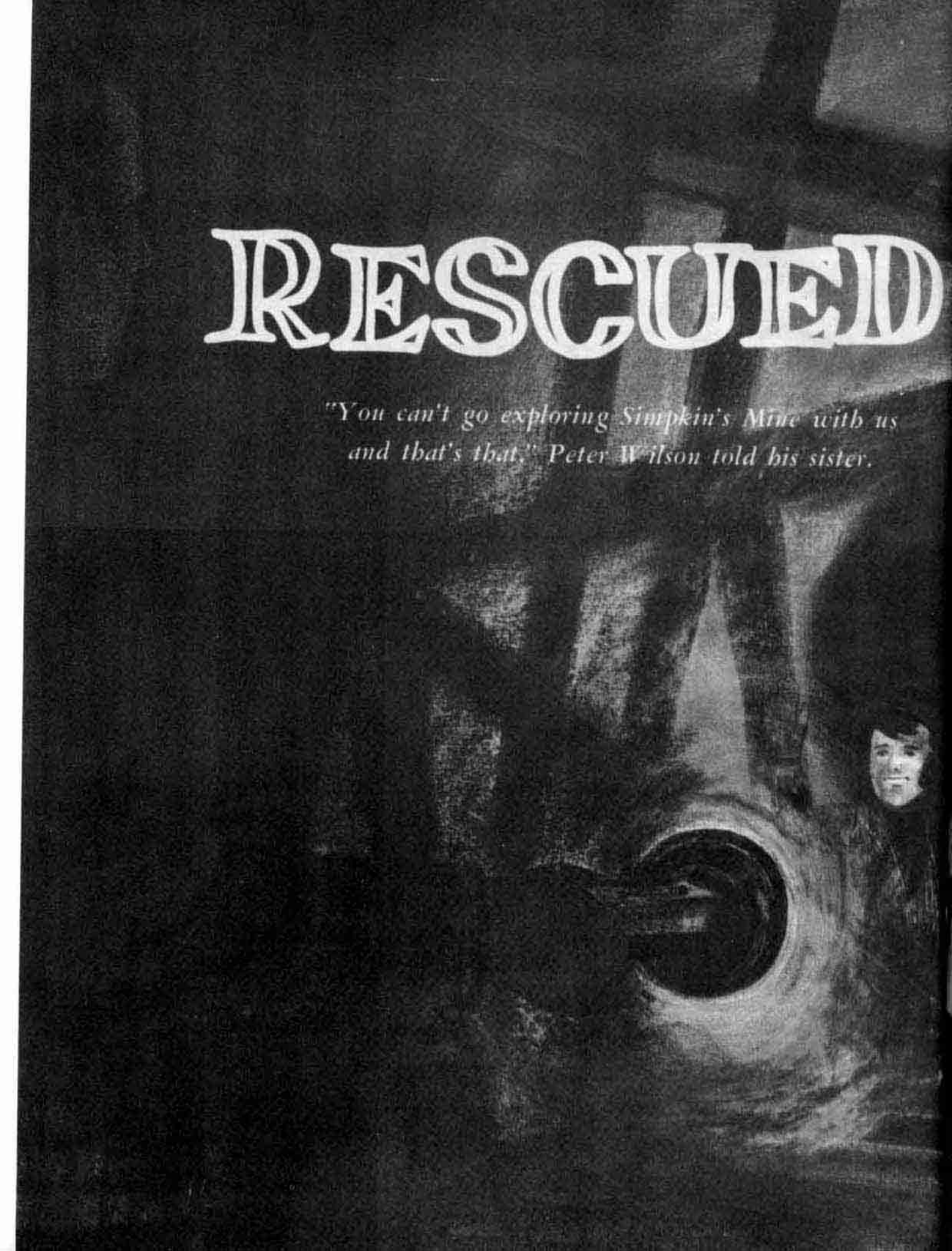
All in all, we think The Best of Canadian Boy has something for every reader. We hope it's a book you'll keep for years, and one the whole family will enjoy. May the next 108 pages be as much fun reading as they were for us to publish.

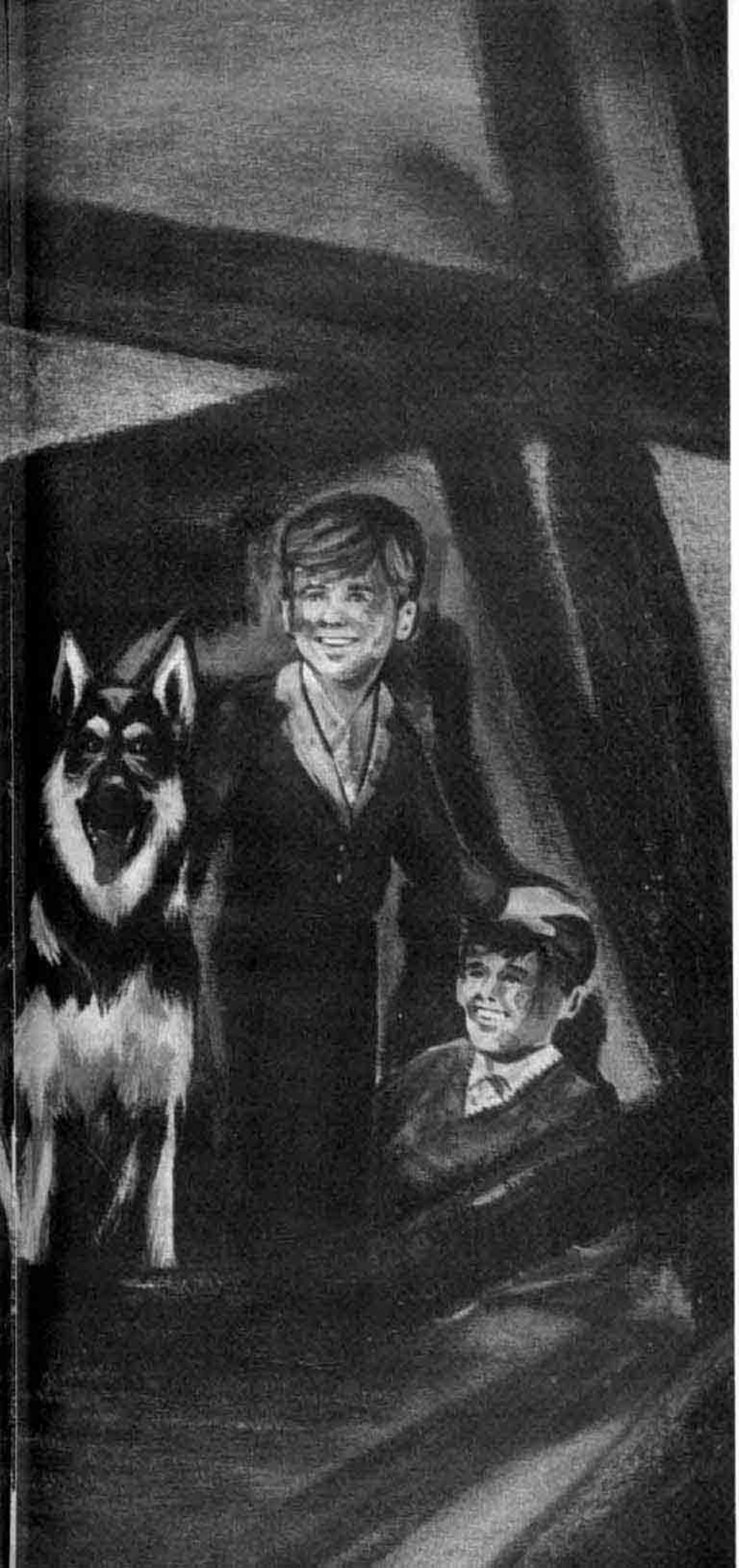
The Editors.

FICTION

RESCUED

"You can't go exploring Simpkin's Mine with us and that's that," Peter Wilson told his sister.





BY SANDY MORTON

"I'm not even taking Ralph with me this time," he said as he chained his big German Shepherd to his kennel. Ralph certainly helps us get home when we're exploring in the woods, thought Peter, but he'd just be in the way exploring mines.

"I don't care," said Clare. "I'm going, or you're not borrowing my flashlight".

"Going where?" asked Tim Naylor who had just come through the front gate. He lived next door to the Wilson's.

"I'm going with you and Peter to explore Simpkin's old fluorspar mine."

"Holy cats," said Tim. "Do we have to take you everywhere with us? Climbing down a deep mine is too dangerous for a girl. And it's awful dark and dirty down there too. You wouldn't like it at all."

Clare knew she could climb just as well as her brother and Tim, but she thought she'd better not say it or they might get really mad and run off and leave her.

Clare wanted desperately to go. She had heard her older brother, Jim, talking about what it was like down in the mine, and she wanted to go and see for herself. Jim was interested in becoming a mining engineer and Mr. Simpkins had let him work underground in the mine during the summer so he could get some real mining experience. Before the summer was over, however, the ore had run out and now the mine was deserted.

Jim had told Clare and Peter a lot of interesting things about the mine, but they had forgotten the most important thing he had told them.

Jim had warned them never to go near the old mine.

"It's dangerous, now," he said. "It's over three hundred feet deep. You could fall in and be killed. Or if you climbed into one of the tunnels or drifts you could get lost. Don't go near it. It's too dangerous!"

"Let me go with you, Peter," begged Clare. "I won't be in your way. I'll do exactly what you tell me."

"Well," said Peter slowly. The idea of bossing his sister, who was two years older than he, sounded like fun.

"OK, OK. You can come. Just remember it's my expedition, and I'm the boss," said Peter. He turned to Tim. "You got your flashlight, Tim?"

"Yes, sir, captain," said Tim. "Right here, captain."

"Well, let's get going then," said Peter. "We'll have to hurry if we're going to get there and back before dinnertime"

The Simpkin Mine was about a mile from the Wilson's house. They could see its headframe above the trees as they walked towards it.

"They build the headframe to hold the cable that pulls up the buckets of ore and lowers the cage the miners go down the mine in," said Peter.

"Yeah," said Clare. "Jim says they have to build them high so they can lift the ore higher than the top of the ground. And sometimes they use it to lift the big timbers which are used to keep the walls and ceilings of the tunnels from caving in."

Peter glared at his sister to be quiet. He knew she knew as much about the mine as he did, but he wanted to tell about it himself.

When they got to the mine, Peter flashed his light down the shaft. It was dark, and smelled damp and musty. The light beam just reached the surface of the water in the shaft about thirty feet down. Jim had told him pumps had been used to keep the mine dry when it was running, but now that it was closed up, it was nearly all flooded.

"It looks kinda scary," said Clare.

"I told you not to come," retorted Peter.

"Hey! It looks like there's a tunnel on the right, part way down," said Tim, as he flashed his light up and down the side of the shaft.

"And there's the shaft ladder," said Peter. "Jim says they built ladders down the side of the shaft so the miners could climb out of the mine if the cable broke down. I'm going down to explore that tunnel."

"Gosh," said Tim. "That old ladder looks awful wet and greasy. What if you slipped and fell?"

"I'll be alright," said Peter. He was only half listening to Tim. Already he had one foot over the side of the shaft and was starting to climb down.

Clare and Tim watched anxiously as Peter lowered himself hand over hand down the rickety old ladder. Carefully he eased a foot and a hand down to the rung below, and then brought down his other hand and foot beside them. When he reached the tunnel he stepped off the ladder and disappeared.

Slowly, Clare and Tim climbed down after him. When they reached the tunnel, they could see his light making crazy shadows on the walls quite a way ahead of them. They hurried to catch up to him.

"I'm going to have a quick look around and see if I can find some mineral samples," said Peter.

"Let's not, Peter," said Clare. "It's too scary down here. Let's go home."

Peter was beginning to feel a little scared himself, but he wasn't going to let Tim and Clare know. "Come on, Tim. Let's go," he said.

Tim was wishing he hadn't come too, but all he said was: "OK, Peter. But not too far, eh! No one knows we are here. If we get lost, they might never find us."

Sticking closely together they walked carefully over the rough pieces of stone that covered the floor of the tunnel. They followed a pair of narrow railroad tracks that wandered off into the darkness.

"They used to run ore cars along these tracks," said peter. "They put the ore in the cars with a mechanical shovel and then pushed them to the elevator where they were hoisted up to the mill at the top of the mine. Jim used to push one of the cars."

As they walked further along the tunnel, they beamed their flashlights ahead of them. Small bits of quartz sparkled at them as their lights flashed on the tunnel floor. They could see rusty stain marks on the walls where the water had run down. The huge beams that held up the ceiling cast strange shadows when the lights hit them.

Then their lights picked out two big square shapes standing on the tracks like mighty monsters guarding the depths of the tunnel.

"Holy cats," whispered Tim. "What are they?"

Peter stopped walking and held his light steady on one of the shapes. Then he laughed. "They're the ore cars I was telling you about, silly. Let's have a look in one of them. Maybe we can find some fluorspar."

As they came up to the side of the first car they could see they were made of heavy steel plate brown with rust from the dampness. The sides were bumpy and scratched from banging against the narrow tunnel as they carried their heavy loads of ore to the mill.

Peter quickly climbed over the side of one of the cars and started banging around inside.

"There's some fluorspar in here," yelled Peter. "Look out. I'm going to throw some out."

Tim and Clare stepped back, and three pieces the size of their hands fell at their feet. They picked them up and looked at them curiously. The fluorspar crystals shone watery green under Tim's light. Mixed in with the crystals were soft clay-like pieces of white barite and hard grey limestone.

"Aren't they beauties?" said Peter, as he swung back over the side of the car and stood beside them.

"Yeah, they're OK," said Tim.

"Yeah, OK," echoed Clare. "And now, let's get out of here. We're goin' to get enough heck as it is when we get home."

Soon they were back at the mine shaft. "You go up first, Tim," said Peter, "and then we'll shine our lights on the ladder together so Clare can see to climb up."

Quickly Tim swung himself onto the ladder and started climbing. His fluorspar sample was too big to put in his pocket, so he had to reach up and grab the ladder rung with one hand, then change his ore sample and flashlight to that hand so he would have a hand free to grab the next rung.

Slowly he eased himself up to the second rung of the ladder, and the third, switching his flashlight and fluorspar as he went. The old ladder swayed ominously.

Then, as Peter and Clare watched, horrified, the ladder pulled away from the wall and swung across the shaft so that the top was on one side and the bottom on the other. Tim's extra movements had been enough to jerk the old ladder loose.

Peter stood rigid with fear as he saw the ladder swing slowly away from the wall. Clare's scream echoed crazily down the tunnel. They were sure the ladder would break and Tim's body would come crashing down into the water below them.

But miraculously, the ladder stayed in one piece, while Tim clung to it for dear life. When he felt the ladder starting to move, he had instinctively wrapped his legs and arms around the rungs and uprights. His fluorspar and flashlight had fallen into the water, but he was still alright. Alright, that is, if he could make his way back to the foot of the ladder and into the tunnel before the old ladder broke in two. With Tim's full weight on it, plus the way it was

sloping, it was even more likely to break than before.

Slowly, he inched his way down the underneath side of the ladder, while it creaked hideously.

Peter and Clare watched, awe-stricken, scarcely daring to breathe.

Finally, Tim reached the edge of the tunnel. He still had to work himself around to the upper side of the sloping ladder and then push himself away from it before he would be safe in the tunnel.

Carefully, he hooked one leg over the top of the ladder, reached over as far as he could with his hand, and then all at once swung his body over the ladder, and jumped clear of it into the tunnel.

He landed safely beside Peter and Clare. But the extra push had been too much for the ladder to support. One of the uprights snapped and hung loose. The ladder was useless. No one would ever be able to climb up or down it again.

Clare started to cry hysterically. "Now we'll never get home," she sobbed.

* * * * * *

"Where on earth can those children be, Jim?" said Mrs. Wilson. "It's way past their dinnertime."

"Ah, don't worry, mom," said Jim. "They're late half the time when they go on those crazy expeditions Peter's always dreaming up. You know yourself you're always givin' 'em heck for being late."

Jim's right, thought Mrs. Wilson. I shouldn't worry. They're usually a little late when they get back from the woods. They're so busy looking at things they just can't seem to keep track of the time.

"They should have taken Ralph with them," said Mrs. Wilson. "Peter says that dog's better than he is at finding his way home."

"Gosh, that's right," said Jim. "Ralph is home, isn't he. I wonder why?"

"Because they tied him up!" said Mrs. Wilson. "That's why! I found him chained to his kennel when I came home."

"I wonder why they left Ralph home," said Jim slowly.

"You don't suppose they did it because they were planning to explore the old Simpkin Mine do you? Peter's been wanting me to take him down that old mine for ages."

"If they were thinking of going down that old mine, that would be a good reason to tie up Ralph," said Mrs. Wilson slowly. "They'd know he'd try to follow them. Oh, Jim, I'm scared. Take Ralph with you and try to find them. Something's wrong."

Jim looked up at the sky. It'll soon be dark, he thought. I haven't much time to find those kids. I just hope they're not hurt or lost in Simpkin's mine. It would be too dangerous to work around that old mine shaft after dark. He shuddered at the thought of anyone spending a night in the old mine.

Ralph strained at his leash. Jim kept a tight hold on it, but let him decide which way to go. He headed across the fields straight towards the old mine.

* * * * * *

"I'm awfully hungry," said Clare. "I want to go home."

The three of them were huddled close together. They had not moved from the mouth of the tunnel. They just sat there, shivering, not knowing what to do.

"We're all hungry," said Peter. "But it'll only make it worse if we talk about it. We'll just have to wait until someone rescues us."

"That may take days," said Tim, still frightened from his narrow escape on the ladder. "Nobody even knows we're here."

Clare started to cry again. Peter and Tim sat looking off into the darkness, helpless.

* * * * * *

"Hey, listen," said Peter. "I think I hear someone coming."

"You keep saying that," said Tim. "It's only the water dripping."

"No! This time I'm sure," said Peter. "I'm sure I heard a dog barking."

They all listened intently. Sure enough, they could hear the sound of a dog's bark, coming closer.

"It's Ralph! It's Ralph!" yelled Peter jumping up, excitedly. "I'd know his bark anywhere. We're rescued! We're rescued!"

"So what if it is," said Tim, "we still haven't any way of getting out of here!"

Then they heard someone at the mouth of the mine shaft.

"Peter! Clare! Are you there?" Jim yelled down.

"Yes, Yes," Peter yelled up at him. Then he quickly told him what had happened to them.

Jim stiffened with fear, as he listened. He'd never be able to get them out before dark, he thought. He couldn't leave them and go for help; there wasn't time. He couldn't lower a rope down over the water-filled mine shaft for them to climb up, he didn't have any. Anyway that would be too dangerous!

"Don't worry, Peter. I'll get you out some way," Jim yelled down with a confidence he certainly didn't feel.

While Jim was talking to Peter, Ralph was running off in different directions. He had heard Peter's voice and was trying to find him. He sniffed and whimpered at every hole in the ground he came to.

Jim barely noticed him until he started to bark loudly from some bushes a couple of hundred feet away from the shaft.

Jim was about to yell at him to: "Shut up, and stop bothering him when he was trying to think", when suddenly he remembered something. All mines have a second shaft or emergency escape exit. Simpkin's mine had not been big enough or successful enough to sink a second shaft. But they had dug the first drift so that it opened up onto the surface of the ground. The kids were only on the first level, so the escape exit would lead right to where they were stranded. The entrance to the tunnel should be just about where Ralph was barking from.

"Good boy, Ralph," Jim said softly to himself. "Good boy! Maybe I can save them before it gets too dark, after all."

Moving quickly, he leaned down the mine shaft and yelled. "Peter, don't worry if you don't hear from me for a few minutes. I think I've figured out a way to rescue you."

Jim worked desperately at the boulders that had been thrown over the narrow exit to keep animals and wanderers from falling in, and soon had a hole large enough to squeeze through. The tunnel sloped down gradually, and he had no trouble working his way towards the main shaft.

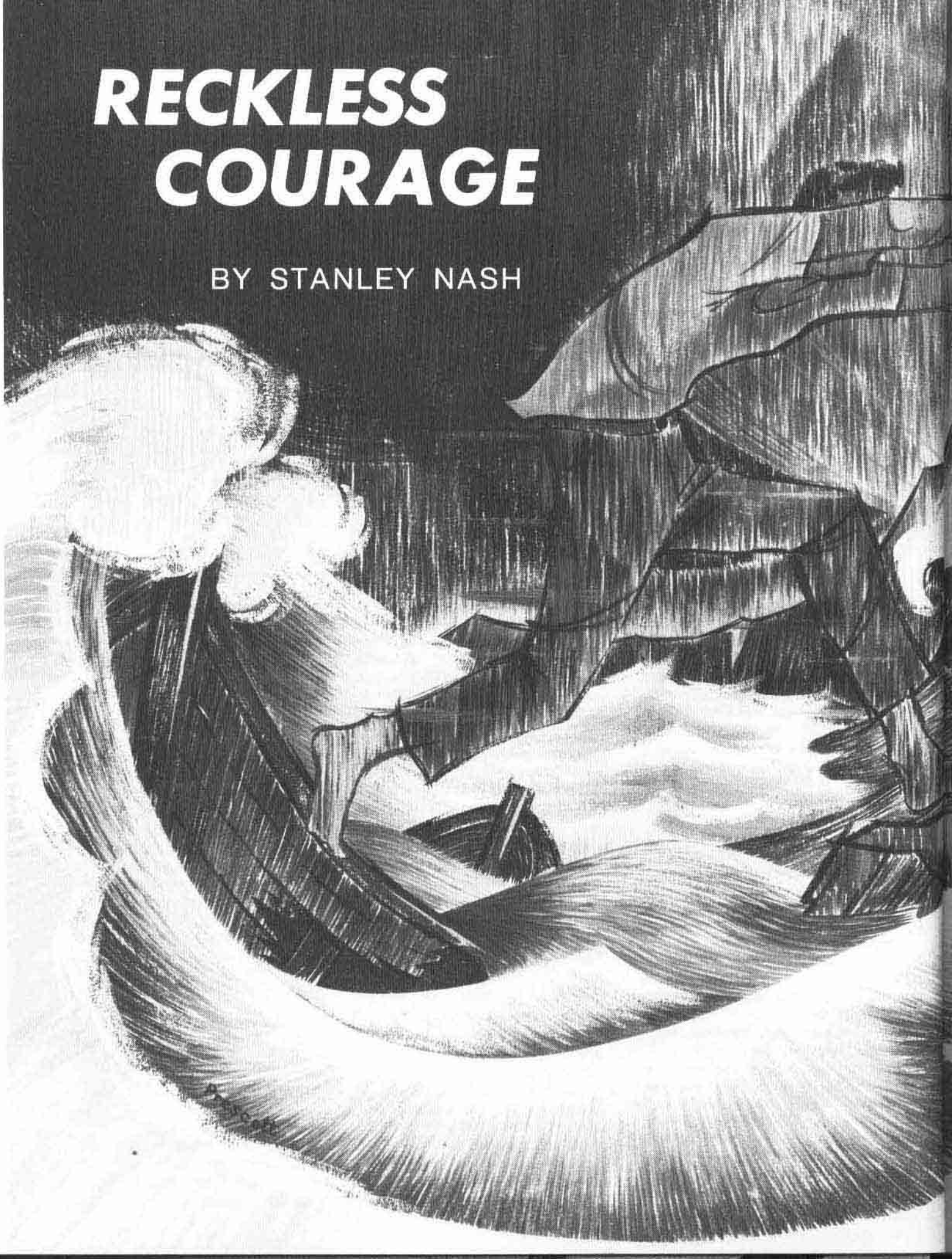
Clare was the first one to notice the beam of light coming from the depths of the tunnel. She jumped up yelling to Peter and Tim, "It's Jim! It's Jim! He's found a different way to get us out of the mine. We're rescued!"

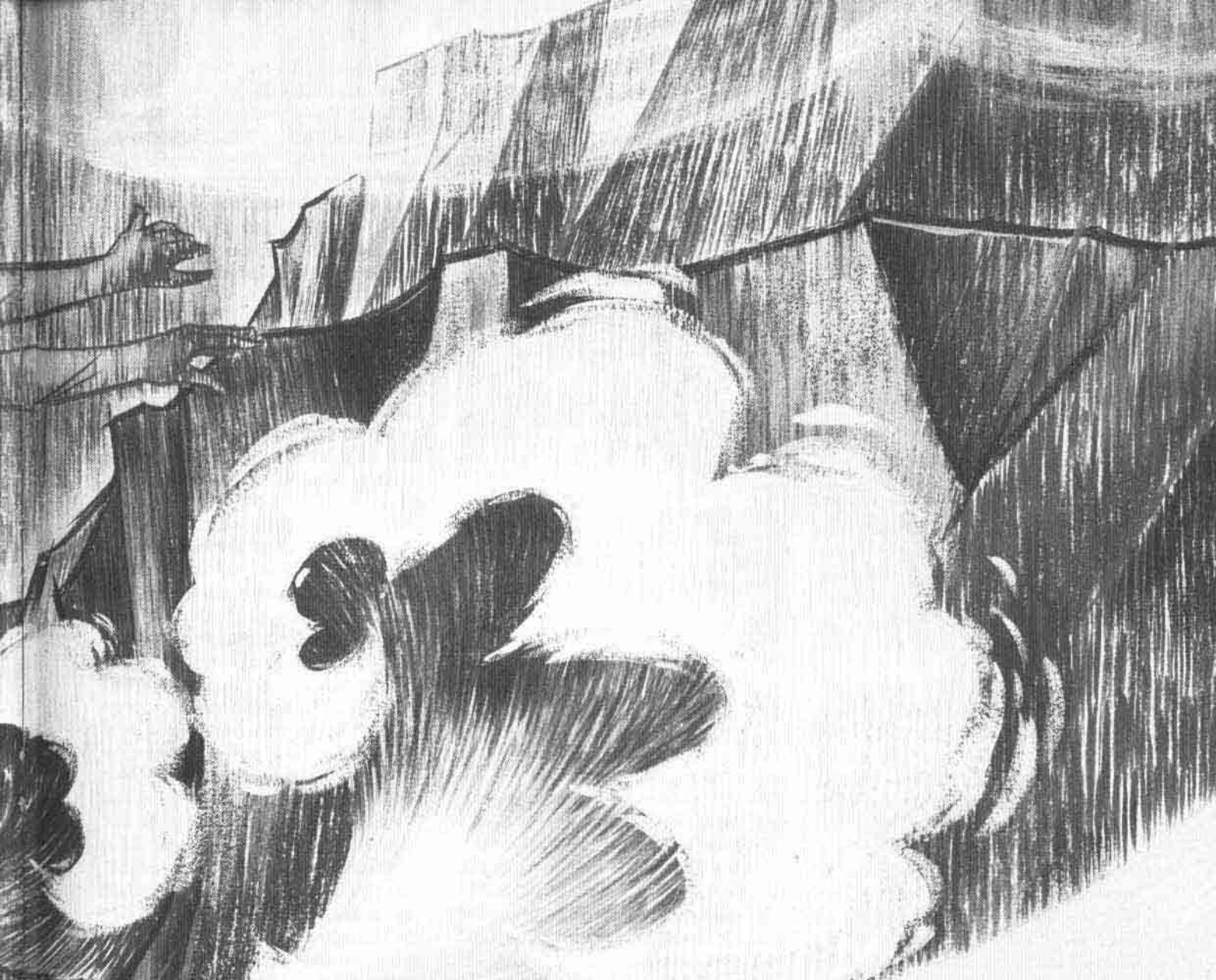
Then Ralph bounded towards them, almost knocking over Tim. He started licking Peter's face.

"Ralph! Good old Ralph!" said Peter, burying his face in the dog's fur. "I should have known you'd bring Jim to rescue us."

RECKLESS COURAGE

BY STANLEY NASH





Dark clouds drifted across the sky over Squid Cove, a little fishing village nestled between two low-lying hills on the rocky coast of Newfoundland. The brightly-painted frame houses of the village fell under the shadow of the rolling storm clouds as they covered the blue of the sky more and more.

Down at the water's edge was a fringe of fishing stages, the stage-head of each jutting out over the landwash to form a landing wharf for the fisherman it belonged to. On one of these, sixteen-year-old Benny Martin settled himself into a more comfortable position against his father's stage, his gaze fixed on the mouth of the cove. He was beginning to get impatient. Most of the other men were home from the grounds but there was still no sign of his father's white motor skiff, *"The Lucky Lady."*

The other fishermen were busy mooring their skiffs and dories for the night, or baiting their fishing gear for the next morning. A score of seagulls hovered around the stage-heads, picking up the bits of fish liver which the fishermen had thrown away when they gutted their catch.

Curbing his impatience, Benny decided to wait for five more minutes and, if his father wasn't in sight by then, go home for supper. His father had gone out at dawn that morning with the other men; but maybe, thought Benny, he had decided to try his luck on one of the offshore banks farther from the land than usual.

Benny's gaze rested idly on his father's dory which was tied to the stage. It was a fourteen-footer with a beam of about five feet. It was brightly painted blue and yellow inside, and grey outside. It had the usual three thwarts: one in the head, one amidships, and one aft. Instead of oarlocks it had wooden thole pins and it was equipped with a bailing scoop.

As he glanced at the dory Benny had an idea. Why not row out to meet his father? He jumped to his feet, untied the dory and scrambled aboard. Pulling as hard as he could on the big oars he soon sent the little boat racing swiftly over the water.

Athough the sky was darker and the southerly wind seemed to have strengthened a good deal, Benny did not think of turning back. Instead, he planted his feet firmly against the ribs of the dory and tried to put more strength into his strokes.

By the time he reached Wrinkle Island just west of Hagdown Point his arms were beginning to tire and he was starting to sweat. Pausing for a brief rest he looked seaward to try and spot the Big Shoal which lay about two miles from shore and was marked by brightly painted net buoys.

Benny had often gone to Big Shoal squid-jigging with his father. It was one of Mr. Martin's favorite fishing grounds — but he was not on it this evening. Disappointed, Benny settled down to rowing around Hagdown Point.

The wind was steadily strengthening and the lop was beginning to wash against the side of the dory. Occasional gulls flew low toward the land under the darkening sky. But these signs of an approaching storm, so obvious to every fisherman, were lost on young Benny's stubborn intent of finding his father even though he was having considerable difficulty keeping the dory heading into the wind and sea.

Suddenly a big sea, much larger than the wind lop, smashed against the port oar catching the blade as it lifted from the water. Worn out and old, the oar snapped off and the blade went floating away on the waves.

Stunned by the accident, Benny could only stare foolishly at the broken piece of oar he still held in his hand. Casting it angrily aside he stood up and began frantically searching the bay for another boat which might have come to his aid — but there was no help in sight.

He was adrift in an open dory amid seas that were becoming rougher by the minute and he was three miles from shore with a bad storm fast approaching. Then he tensed and a quiver of excitement ran through his slim body.

A small schooner had appeared on the horizon and he could plainly see her white sails as she rose and fell to the rhythm of the waves.

Hastily stripping off his thin blue jacket (and tearing one arm in the process) Benny flung it toward the stern but, in his excitement he failed to see it slide out over the stern of the dory and into the water.

Pulling his white T-shirt over his head he tied it to the good oar with a piece of sudline; then, he stood up in the head of the dory frantically waving his white flag back and forth and shouting until he was hoarse.

But all his efforts were in vain. The schooner was now a long distance to the west of him, running for shelter before the approaching gale, and it did not alter course.

The dory had now drifted past Hagdown Point and was driving across the open bay. It was being tossed about like a chip in a stream and Benny had difficulty keeping his hold on the thwart. He was feeling cold and seasick, and frightened too, and was wishing that he had not been so reckless. Then the rain started. Big drops hissed into the water and drove against Benny's face.

He turned to get his jacket but it was gone. Then he noticed one of his father's old oilskin jackets in the bottom of the dory and he hurriedly drew it over his head and snuggled it around him. Now he had some protection against the howling wind and driven water, but his situation was growing more serious with each passing minute.

With a feeling of panic he realized that he was drifting rapidly toward a sheer cliff that seemed to tower a thousand feet out of the breakers. It was rugged and worn from the effects of countless storms.

As he drove nearer and nearer to it, he saw that it was cut by deep crevices and its base was fringed with high, sharp jutting rocks. The seas dashed wildly in and out among these rocks. As he watched, a piece of driftwood was caught by the waves, dashed against a rock and split into a hundred pieces.

Then he saw that a few hundred feet to the right of the rocks there was a tiny cove in the cliff, faced by a sand beach fifty yards in length, and backed by a stand of woods. But Benny was drifting toward the rocks and the sight of the turmoil there terrified him so that he could hardly think.

He knew all too well what would happen if his small dory was caught and dashed against those rocks. Heedless of the slashing rain, he threw off the oilskin jacket and, using his good oar, tried desperately to scull the boat away from the sharp-edged 'sunkers' toward the narrow stretch of sand. But his efforts were useless; in fact they only tended to increase the chance of his being thrown overboard, for the dory, light as a feather, was rocking crazily.

Benny saw that he had only one hope left. The outermost rock had a projecting ledge which extended several feet over the surface of the water. As a big, rolling wave carried the dory underneath the ledge Benny put a foot on the thwart and made a wild spring for the safety of the rock. His hands closed over the edge of the ledge, but one of his knees struck the rock momentarily blinding him with pain. One hand slipped from the ledge and for several seconds he hung precariously poised over the furious seas below.

Summoning the last of his strength, he managed to get a new grip on the ledge and feebly pulled himself over the top. For several minutes he lay gasping for breath while the rain and spray beat against him, drenching him to the skin. When he recovered enough to peep over the edge he saw pieces of what had once been the dory being thrown about by the breakers.

With horror he realized that the tide was coming in and that he could not hope to stay on the ledge for long. Although he was close to shore he had faint hopes of reaching it safely due

to the fury of the running swell; nevertheless he knew he must try, or drown where he was.

Discarding his rubber boots, he walked to the edge of the rock nearest to the beach and stood ready to jump at the right moment. Waiting until a big sea broke and began rolling back from shore, he took a deep breath and leaped.

He struck the water feet first and shot deep beneath the surface. As he came up, sputtering and gasping for breath, a wave rolled over him and the bitter salt water stung his throat and almost strangled him. Struggling wildly, he was able to get his head clear once again and to drag in great gulps of life-giving air.

His strength was almost gone. Would he never be clear of the rocks and in line with the beach? Suddenly, one of his feet struck bottom. Staggering to his feet, he plunged toward the shore, reached it, and sank wearily on the foam-flecked sand.

The driving rain and the gale-driven spume would not let him rest. It was already dusk and he knew that another hour would bring full darkness. The wind was blowing even more furiously and giant combers were rushing up on the sand, as if to drag him back to sea. The surrounding cliffs were shrouded by rain and mist and were growing obscure as darkness deepened.

Struggling valiantly to his feet once more, Benny staggered on rubbery legs toward the woods. In front of him stood a lofty spruce, its branches swaying in the gale. Benny groped his way toward it, stumbling from fatigue. As he reached it he fell to his hands and knees and with his last strength crawled under the branches where he found some degree of refuge behind the tree trunk.

Utterly spent, he stretched out on the wet ground and closed his eyes. . . .

. . . An old familiar sound brought him back to consciousness. Startled, he scrambled to his feet. He was amazed to find that the night had passed, and a stormy dawn was breaking. Befuddled by cold and weariness, it was some time before he realized that he was hearing the distant chug-chug-chug of a motor boat above the sound of the storm.

With a wild cry of joy, he rushed out on the open beach. The rain had stopped but mountainous seas still swept in upon the shore. Far out on the grey seas several small white specks lifted and sank and Benny knew that these were the boats from Squid Cove. They followed close behind one another, fighting their way through the seas in the direction of the sandy beach.

When Benny had failed to show up for supper the previous evening a search had been made of Squid Cove. His father, who had come in late after having been forced to run along the eastern shore for shelter, found the dory missing and guessed what must have happened. But the storm had prevented all chances of a search at sea succeeding until morning came.

With little hope of finding Benny alive the gloomy but stubborn fishermen had set out at dawn to search the coast. Guessing from the direction of the tide and wind, that the dory would have drifted down toward the cliffs, they had headed in that direction.

When Benny saw them he knew it would be hopeless for a boat to try to land on the beach, for it would have been washed ashore and swamped as soon as it touched.

The fishermen had seen Benny by now and had drawn their boats in a circle, as close to shore as they dared go while they debated what action they should take.

Engrossed in their discussion, they failed to see that Benny had taken the decision into his own hands and had plunged into the surf, striking out as best he could for the nearest boat.

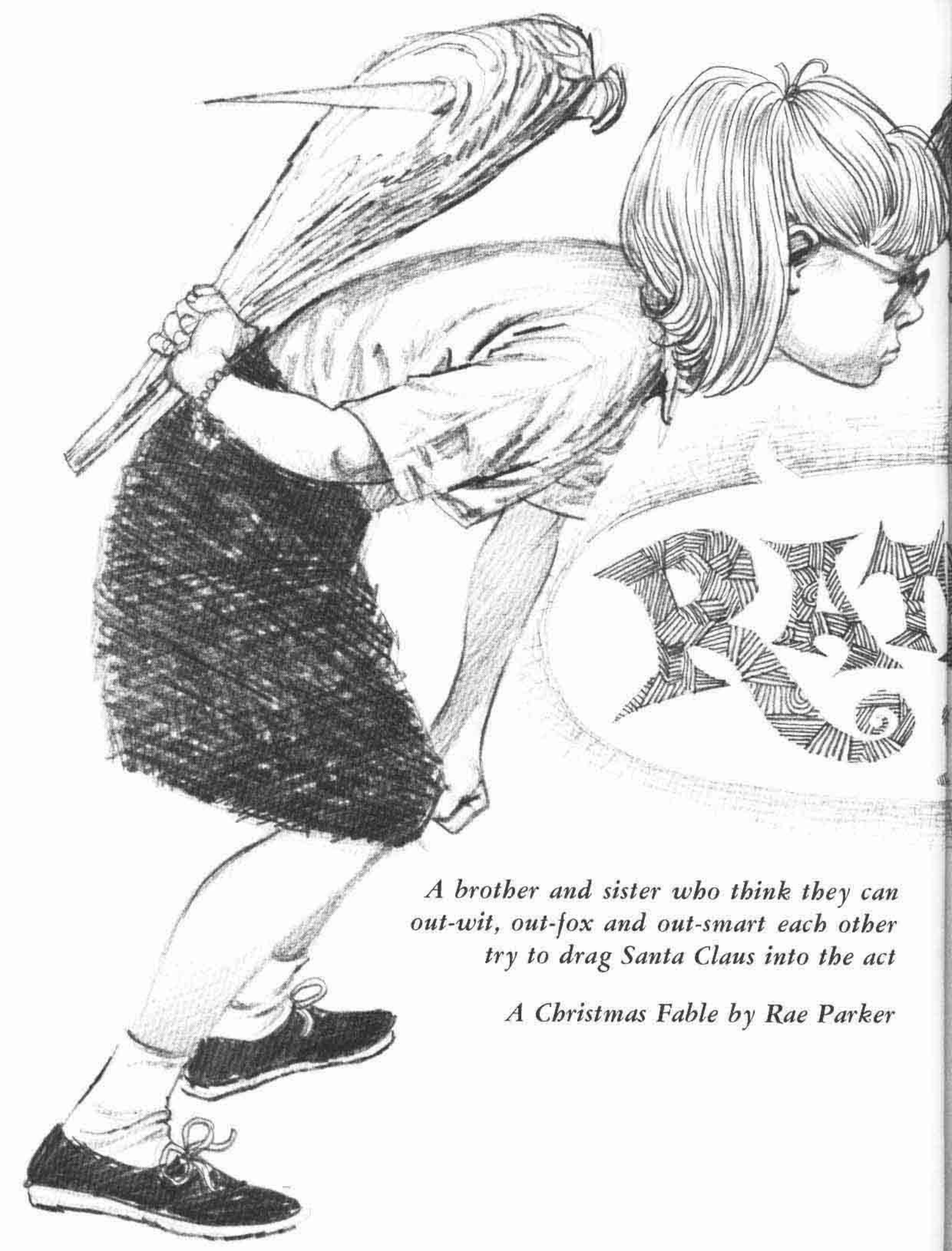
A sharp cry from one of the men alerted the others to Benny's danger. Despite his father's frantic shouts to him to turn back, Benny continued to plough through, into, and under the waves. Several times he was washed backwards but his arms and legs kept churning the water and he gained distance, inch by inch and foot by foot. Suddenly the backlash from one enormous wave caught him from behind and washed him under. The horrified fishermen never expected to see him break surface again, but when his head came up, gasping and sputtering, they broke into an involuntary cheer and edged their boats even closer to shore.

Encouraged by the cheer, Benny mustered his last reserves of energy and struck out for the nearest boat — the bobbing white hull of "The Lucky Lady". His lungs burned and his arms and legs were made of lead. He gasped for breath, and swallowed what felt like half the ocean. The weight of the water he had swallowed seemed to be dragging him down. He couldn't make his limbs move any more. So near and yet he couldn't make it. The Lucky Lady was only twenty yards away. Just before Benny sank in the trough of a wave, he could see his father's face, pleading with him to keep on swimming.

Courage rose in Benny's heart. Forcing his body to move, he painfully struck out again for the Lucky Lady. "Move one arm — now the other — now kick," he told himself. He could not tell if he was getting any closer to the boat. "Just keep moving," he said. On and on he plowed, on and on and on.

After what seemed like an eternity, he felt eager hands grasp him and pull him over the rail of the boat. He fainted dead away.

Hot tea from a thermos bottle and warm blankets wrapped tightly around him brought him back to consciousness. With a motor boat as escort on each side of her, "The Lucky Lady" steamed exultantly up the bay toward Squid Cove.



A brother and sister who think they can out-wit, out-fox and out-smart each other try to drag Santa Claus into the act

A Christmas Fable by Rae Parker

IF SOMEONE HAD ASKED ME when I was nine years old, what I hated most, I wouldn't have even thought of answering "School" until after I had gnashed my teeth, rolled my eyes and screamed, "My sister! I hate my sister! I will murder my sister! I can't stand my sister! I will tear her limb from limb and feed her to a vulture if I can find a vulture with a strong enough stomach! I will throw her into a fifty foot hole, then throw down a ten foot ladder for her," or words to that effect. She didn't like me much, either.

Her name was Miriam. It still is, of course, but at that time I called

her Miriam only when my parents were within hearing distance and I had to watch my tongue. This magazine cannot print what she used to call me.

As we grew older we became very good friends, but when I was nine and she was twelve, and we both lived in the same house, we were friendly toward each other only while father had a firm and painful grip on our ears, and even then only if Christmas were just around the corner.

And if this same someone were to ask, "Did you have **no** love for your sister?" I would have had to confess I did. There was nothing I loved better than a nasty piece of business on my part which would get her into a lot of trouble. It was a good feeling and I was grateful to her for providing so much pleasure for me at such times. It was then I would feel something very close to love. But she would completely ruin this love by pulling some dirty, stinking, low-down-rotten, cheap, mean, underhanded and completely uncalled-for stunt, like telling my father I'd broken the basement window with my baseball, which would make me hate her all over again.

I mean, how can a guy even pretend to love a sister who would do a thing like that? Especially since father would have found out anyway! If she were a sister truly deserving of my love and respect she would not have said a word, then maybe by the time he found out I could have thought up some way of blaming her for it and completely avoided getting into trouble myself.

Anyway, I don't remember just what it was I had done to get her into enough trouble to make me think for awhile that I loved her a bit, nor do I remember what she did in return to make me remember I hated her — perhaps it was the broken window — but I do remember that this one time I got my revenge on her with a mighty kick in the shins (purely by accident, of course), which almost crippled her for two weeks. But she wasn't too crippled to get a good grip on my hair and start pulling it out by the roots, and hanging on even though I was hitting her frantically with every fist I had. I don't know whether I was screaming louder with the pain or with fury, but I think she was screaming louder than I, which even then I was rather pleased about.

Then, out of nowhere, I felt that familiar grip on my ear, a grip which made me wonder whether my ear would pull loose from my head or whether the rest of my body would follow it up into the air. It gave me only a little satisfaction to see Miriam's feet also dangling above the

Hanging from our ears, we had no choice.

ground, her ear suspended between father's other thumb and finger.

We both promised to be very nice to each other, and to behave, and to love each other as brother and sister should. Hanging from our ears, we didn't have much choice. Besides, Christmas was only two weeks away.

Later that evening, after we had wiped away our tears and massaged our ears back into shape, mother got into the act. She gave us the longest lecture anyone ever suffered through on why it is a good thing for brothers and sisters to love each other as they should. And because she kept on dropping the word Christmas into her lecture, we both promised we would try our best.

Then she told us it was about time we wrote our Christmas letters to Santa Claus. By way of a hint, probably because she thought she knew our horrible minds so well, she added that Santa Claus didn't think much of children who wrote nasty things about each other, nor did he care for children who didn't love one another. With these words the lecture ended.

We both went quietly to our rooms to write our letters. My mind was busy. So busy that I hardly noticed when Miriam locked her door behind her, so busy that it didn't occur to me to think it a mighty strange thing for her to do, even after I had locked the door to my **own** room, which was very unusual for me. The only times I ever locked my door was when I was preparing something nasty for Miriam and I didn't want her barging in before I was ready.

I sat down and thought heavily about what mother had said. "Santa doesn't like nasty or greedy children." My mind played with it for awhile, and my smile got wider and wickeder the more I thought. Then I picked up my pen and began to write. "Dear Santa: My little brother Rae is a very nasty boy and I hate him and he doesn't deserve **anything** for Christmas. I would like . . ." and then I listed greedy presents Miriam would want, enough to make her seem the greediest girl in the world. Then I signed it with her name, and added as a P. S. a few more things to make her seem even greedier.

I folded the letter, addressed and sealed it, grinning merrily all the while and very pleased with myself. Then I took another sheet of paper and wrote, "Dear Santa: I love my sister very much and I hope you bring her something nice for Christmas. I don't want much myself, be-

I would make Santa think she was greedy.

cause I am not greedy. Yours truly, Rae."

"That should do it," I thought to myself. "Santa will think she's greedy and nasty and that I'm not, and he'll bring me tons of presents and won't bring her anything." I turned out my light and chuckled myself to sleep, thinking about Christmas morning and the sad look that would be on Miriam's face.

Next morning I hid the letters among the pile of Christmas cards my mother was going to mail, then went to the store to do my Christmas shopping. I had five dollars to spend, and I spent all but twenty-three cents on

something for my parents. With the twenty-three cents I bought a present for my sister, a small jar of marmalade. If there was anything she hated worse than she hated me, it was marmalade. It always made her break out in a rash. It had the same effect on her that mushroom soup had on me.

For the next two weeks a person would think my sister and I almost liked each other. Not once did I kick her in the shins or get her into trouble. Not once did she pull my hair or get **me** into trouble. I felt so good smiling down my nose at her that I didn't bother wondering what she was up to, grinning down her nose at me all the time like that.

Nor did I really notice that father and mother frowned whenever they looked at either one of us, and were very glum most of the time.

Christmas Eve I couldn't sleep for thinking about Miriam's dismay and tears when she would find practically nothing under the tree for herself and a million dollars worth of toys for me.

At six in the morning I bounced out of bed, got dressed and woke Miriam, hardly able to keep from smirking at her. We both went down the hall and roused my parents, then waited nervously in the kitchen until they came downstairs.

I could hardly believe my eyes when I saw the tree. There was almost nothing under it! Something had gone wrong! I began to feel very guilty, and very nervous to boot. Had Santa seen through those phony letters I had sent? Or had my parents somehow got ahold of them? Nobody said a word. I looked at Miriam, and she looked as worried as I felt. I looked at mother. She was biting her lip and looking at father. He was standing with his arms folded and glaring at both Miriam and I. Then he said to us in a terrifying voice, "Open your presents!" It was an order which gave me more fear and pain than the worst of his ear-pullings. Miriam started wailing. For once her tears brought me no joy at all, because I was too busy wailing myself.

Father stood patiently waiting for us to stop crying. When we did he said "Open your presents," once more, but this time his voice was quieter, not so frightening, and his eyes were a bit damp. He looked very sad and discouraged. By now I knew he had seen my letters to Santa.

Obediently we sat down to open our presents, nervously, awkwardly. I think we both expected the first package we opened would blow up in our faces. Neither one of us was sure what was wrong, but we both felt so guilty we didn't ask questions.

I was closest to the tree. The first parcel was for Miriam, from mother and father. I breathed a sigh of relief and handed it to her, then waited while she opened it, not at all eager to find my own. It didn't explode. It was a pair of shoes, not very pretty but very practical for a twelve-year-old girl. Her face was a mixture of disappointment and relief. A pair of not-very-pretty shoes was better than . . . who knows what her conscience had expected?

The next large parcel was mine, also from mother and father. A shirt and tie. Which nine-year-old boy is glad to get a shirt and tie for Christmas? I was! I had half expected Satan himself to jump out of that box.

The next was for Miriam. I knew what it was, the marmalade. I turned my head away, ashamed, as she opened it.

From her, I got a can of mushroom soup. My stomach turned when I saw it. I would rather have eaten fifty live worms than one spoonful of mushroom soup, but I said nothing.

Next were our presents to our parents, and theirs to each other, and that seemed to be it, until I spotted two envelopes. One was addressed to Miriam, the other to me. We opened them. In mine were two letters, in Miriam's handwriting, both addressed to Santa Claus. One was signed in her name, the other with my name. I didn't read them. I didn't want to. I knew what was in them was almost the same thing that was in her envelope, which I could see were the two letters I had written.

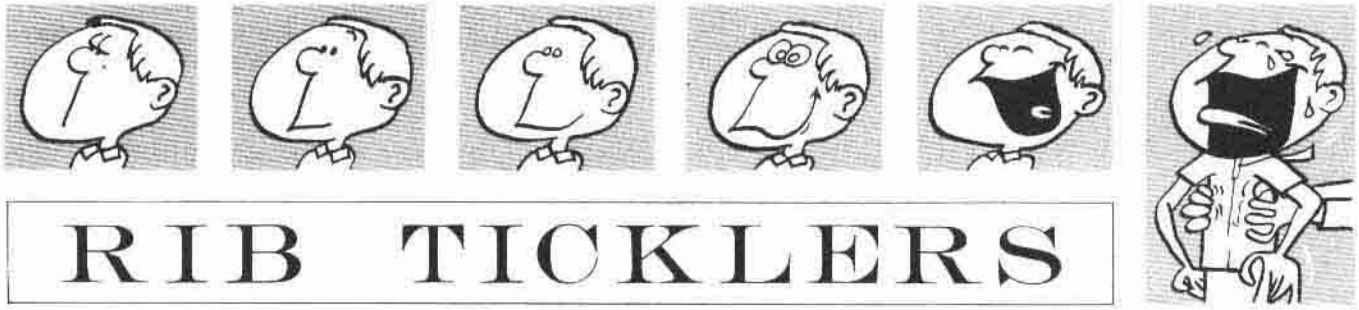
Father and mother left the room quietly, leaving both of us sitting there feeling very guilty indeed, and looking everywhere but at each other. After what seemed a very long time, she said, almost in a whisper, "I'm sorry, Rae."

Minutes later, when I could trust myself to say it without crying, I said, "I'm sorry too, Miriam."

"Alright," she said, and we both started laughing. I guess either because it all seemed so funny or else we wouldn't feel so miserable about this awful Christmas, if we laughed.

But as Miriam said, the following Christmas, after we had all opened our many and wonderful presents, and I had remarked this was the best Christmas ever, she said, "but not as wonderful as last Christmas!"

And somehow I knew what she meant, for if someone had asked me, shortly after the Christmas when I was nine years old, to name someone I loved, I would have answered "Miriam," without hesitation. And that, under the circumstances, was a pretty wonderful gift to receive on Christmas.



RIB TICKLERS

Fred: I saw a doctor today about my lapses of memory.
Ted: What did he do?
Fred: He insisted I pay my bill in advance.

Gerald Hutchings, Corner Brook, Nfld.

Moe: My uncle has a good job in a candy factory.
Joe: What does he do?
Moe: He tightens nuts in the peanut brittle.

John Dawson, Stoney Creek, Ont.

Mary: I have a do-it-yourself husband.
Joan: What's he like?
Mary: Whenever I ask him to do anything for me, he says "do it yourself."

Kathy Steeves, Terrace, B.C.

What boat did the Pilgrims come over on?
Answer: The Mayflower.
What did the midgets come on?
Answer: The shrimp boats.
And what did the doctors come on?
Answer: Blood vessels.

Rod Snedden, Carleton Place, Ont.

Q: What are Laplanders?
A: People who can't keep their balance in a bus.

Arthur Rottenbiller, Medicine Hat, Alta.

Q: What is the shortest bridge in the world?
A: The bridge of your nose.

Philip Medland, Scarborough, Ont.

Mother: Eat your spinach and it will put lots of color in your cheeks.
Tommy: Who wants green cheeks?

Sam McBride, Nelson, B.C.

Jack: I can tell a chicken's age by teeth.
Mack: But chickens don't have teeth.
Jack: No, but I do.

Neil Fowke, Agincourt, Ont.

A Scotsman approached the theatre box office.
"How much are the tickets?" he asked.
"Box seats are one dollar, regular seats fifty cents, and programs are a nickel," said the girl.
"Fine," said the Scotsman, "I'll sit on the program."

Craig McIntosh, Winnipeg, Man.

Said the owner of a circus when his human cannonball suffered a fatal accident: "I'll never find another man of his caliber."

Murray Walpole, Port Elgin, Ont.

The height of embarrassment: two eyes meeting through a keyhole.

Ken Carlson, Capreol, Ont.

Q.: What do you call a knife that cuts four loaves of bread at a time?
A.: A four loaf cleaver.

Larry Dahl, Beaconsfield, P.Q.

Jack: Is that bull over there safe?
Mac: Well, he's a darn sight safer than you are.

Phil Van Horne, Chilliwack, B.C.

"I thought you were the best guide in Manitoba," said the lost hunter.
Guide: I am, but I think we're in Ontario now.

Garry Calvert, Winnipeg, Man.

A man said to his doctor, "Help me, Doc, I have a cucumber growing out of my right ear." The doctor replied, "My goodness! So you have. How did that happen?" The man said, "I don't know. I planted carrots."

Murray Walpole, Port Elgin, Ont.

Q.: What does the buffalo stand for on American money?
A.: There's no room to sit.

Richard Elwood, Toronto, Ont.

Mr. Jones: I could dance like this forever.
Mrs. Jones: Why? Don't you want to improve?

David Dolmer, Corbetton, Ont.

Voice over theatre loudspeaker: A $5.00 bill has been found in the theatre. Will the owner please form a line outside the ticket office!

Jamie MacKinnon, Guelph, Ont.

"I'm going to have a Beaver coat when I grow up!"

Joey's Boat Race

A story of a boy's moment of decision

by Jamie MacKinnon, 13

"But all I gotta do is put in a new propeller; this chipped one will never do," Joey tried to explain to his friend Bob.

"You saw the sign, it said all parts of the motors have to have been made before 1940. If you put in a new part, sure you'd win but that's almost, well, downright cheating." Bob stopped, trying to think of another way to persuade Joey that he should not do it.

Wilfred, Joey's next door neighbor, had the best and the fastest outboard motor in town. Like Joey, he was entering in Leaville's annual outboard motor race. Unlike previous ones, this race was only for 1940 or earlier motors. The notice in the shop window had said: "Any old parts or pieces exchanged for new ones is prohibited."

"But I'd win, and besides, they'd never know what I did," thought Joey.

Next morning Joey was down at his nearly dilapidated motor. Several parts were lying on the ground beside him. With his right hand he held up a shiny object; a propeller for his engine. Temptation proving too strong, he had gone to the hardware store and bought it. Now, with fumbling hands he put it in its place and replaced the other parts. He walked away quickly, afraid his conscience would get the better of him.

His father suddenly called him. "Joey, I want you to take this pile of wood down to the boathouse."

When his work was about half done, he again saw the motor. As if he hated it because it was the only thing that knew of his wrong doing, he threw a piece of wood at it and ran down the beach. He was quite restless and did not sleep well that night.

Joey was excited when he got up the following day. "The morning of the boat race, here we come, here we come," he chanted softly to himself. An hour after breakfast he said goodbye to his parents, and went down to the dock where his boat and outboard were rocking like pendulums on the choppy surface of the lake. He checked the fuel gauge. It read "Full." He waved to his mother who was barely visible through the trees and bush in front of the beach path.

His parents would get to the starting place about half a mile down the lake. There they would join scores of others all rooting for their own sons and daughters. Some of them would be huddled in blankets. It was still cold on that early June morning.

Joey was enjoying the stiff wind in his rectangular punt. He arrived five minutes early to see the bright oranges, yellows and reds of the crowd vividly contrasting with the green grass.

On the lake were all shapes, sizes and colors of boats; twenty-six of them. Would Joey have a chance to win?

The gun went and the adults stood up, cheering and waving wildly. The line of boats, which had been straight, now bent and folded as certain boats took the lead. A dark brown cedar-strip boat was already several boat lengths ahead of Joey.

"Curse that stupid Wilfred," Joe mumbled. Joey was third now. Wilfred's boat had already passed the first buoy. Joey headed suddenly to the right and splashed through the second boat's wake. He gave it all the old motor had, and soon he was second himself. The race was now between himself and Wilfred.

They rounded the second buoy, the third, the fourth, and only two more to go. Joe shifted his weight and he went faster. He was gaining on Wilfred. He was almost alongside. But suddenly they were across the finish line. He had lost.

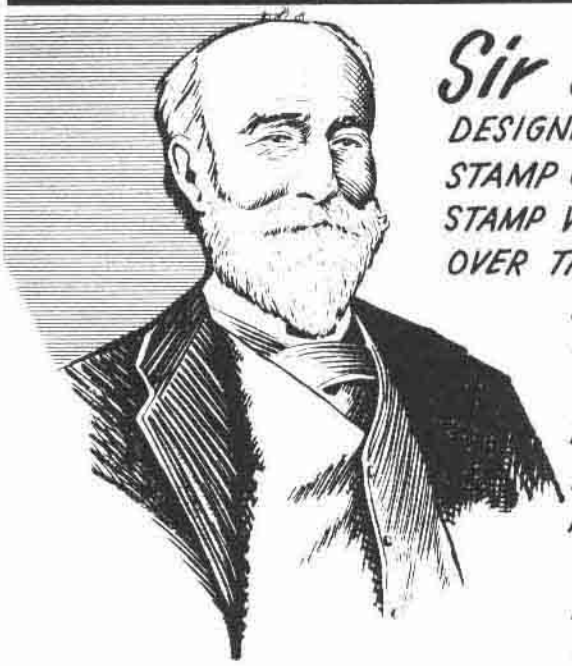
"I still say I shouldn't have taken the new prop out last night," Joey remarked sadly. "I would have won with it."

"Don't act foolishly," Bob said. "You came second and you feel a lot better knowing that you didn't cheat."

"Yeah, but I didn't win . . ."

"You won a better race," Bob interjected. "against yourself."

CANADATA

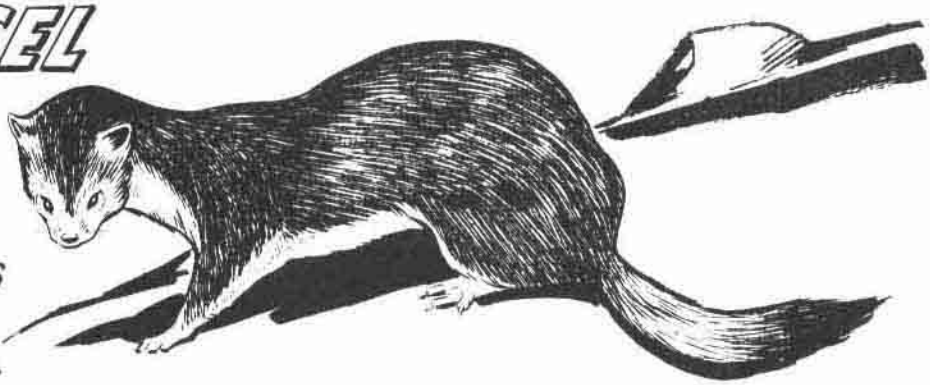


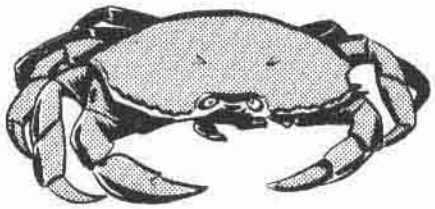
Sir Sandford Fleming

DESIGNED THE LITTLE RED "THREE-PENNY BEAVER" STAMP OF 1851. THIS WAS CANADA'S FIRST POSTAGE STAMP WHICH IS KNOWN BY STAMP COLLECTORS ALL OVER THE WORLD... HE PROPHETICALLY COMBINED THE ELEMENTS OF CANADA'S FUTURE.. THE BEAVER SYMBOLIZED INDUSTRY, INTELLIGENCE AND WILD LIFE... HE PUT IN A FOREST BACKGROUND THE HOME OF WILDLIFE AND A SOURCE OF RAW MATERIALS.. HE INCLUDED WATER POWER FOR PROGRESS, AND SUNSHINE FOR TOURISTS.. ALL THIS ON ONE SMALL POSTAGE STAMP.....

The WEASEL

SEEMS TO CAST A SPELL OVER RABBITS. WHEN BEING CHASED BY A WEASEL, THE MUCH SWIFTER HARE HESITATES AND FALTERS IN FLIGHT UNTIL CAPTURED.

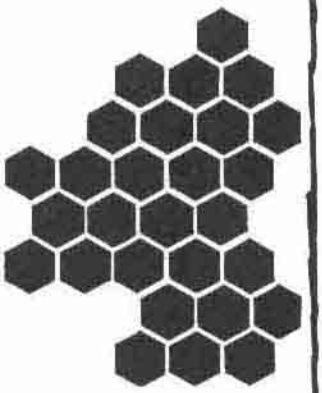




OUR BLOOD IS RED BECAUSE IT CONTAINS IRON AND OXYGEN.... CRABS AND LOBSTERS HAVE COPPER BLOOD WHICH IS A GREENISH BLUE COLOR.

VERNON MILLER.

IT HAS BEEN SCIENTIFICALLY PROVEN THAT NO OTHER DESIGN, SHAPE OR ARRANGEMENT OF CELLS IS AS STRONG OR MORE SAVING OF SPACE THAN THE HEXAGONAL HONEY CELLS OF OUR BEE.



The Seekers Of Sunken Treasure

Two brothers find gold in a sunken treasure ship only to have their fortune stolen. Who took it?

by Stephen Lane

Above the gruff roar of the motor, Rick shouted orders to his younger brother, Roy, who altered the course of the speeding boat accordingly. The shimmering expanse of Lake Ontario lay like a mirror on all sides. Rick glanced at the map on his lap and told his brother to make for the jutting finger of land to the east.

"That has to be it," Rick shouted over the roar of the chugging motor. "That spit of land must be the one which Neb said points to the wreck of a sunken ship!"

Roy let out a whoop. As he piloted the boat toward the spit, his brother's mind began to wander.

Neb's musical, exciting words still rang in his ears as he recalled the lively conversation of the previous day. "No, matey," Neb had roared in his jovial voice which sounded of the sea and sailors, "you don't have to search any farther than the lake by which you live to find gold and other fabulous riches in a sunken treasure ship. Oh, I must admit that the majority of the seekers of sunken treasure turn to the sea to find their fortunes. But, then, gold is where you find it, and I can assure you that it lies just waiting for you on the bottom of the Great Lakes."

Rick had looked up as if startled, laying down the battered sextant he had been admiring. Neb ran his stubby fingers over his leathery face and smiled broadly as the boy looked at him in wide-eyed disbelief.

"You're joking, aren't you, Neb?" Rick blurted. Neb chuckled softly, merrily.

"You know me better than that. Why, I know for a fact that in Lake Ontario alone a fortune lies in sunken wrecks just waiting for an opportunist, such as yourself, to recover it from the watery deep."

"Wow! Do you really think I could?" Rick nearly shouted. His eyes sparkled as he thought of gold and sunken ships. Already he saw himself the proud discoverer of a wreck, surrounded with untold riches, not to mention glory.

"Ah, matey, you are just like me. The glitter of gold and longing for adventure draws you to it like a magnet attracts scraps of metal. Believe me, I know, when I tell you that at this very moment a British vessel lies at the bottom of Lake Ontario with five hundred thousand dollars in gold coin in her rotting hulk. Imagine it!"

"But, gee whiz, if what you say is true, why don't we try to find this wreck ourselves?"

Neb laughed merrily at Rick's exuberance. "I wish I could help you, matey, but I'm afraid my age is at last catching up with me. No, I'm afraid my days of searching for sunken treasure are past."

Rick muttered "oh-well" and a look of dark dejection came over his face.

"Don't look disheartened. Just because this old sea-salt can no longer search for sunken treasure ships doesn't mean you can't. Now that I think," Neb continued, "I do recall that wreck lay in shallow water of perhaps twenty feet or so. She lay upon a sandbar directly west of a needle-like spit of land. This vessel, I believe, foundered and sank there in the eighteenth century after tearing

great holes in her hull. Perhaps she still lies there. Whether there is any treasure in her hold, I don't know. Maybe that was plundered years ago. See here, I'll draw you a map of the spot where she sank, if you like."

It was this map that Rick was using as a guide now.

All of a sudden there was silence and the boat sedately glided to a halt directly west of the spit of land. Roy cautiously lowered the anchor into the watery depths while Rick jubilantly assembled his scuba equipment. Finally, Rick fitted the mask securely over his face and made sure that his knife and marker hung by his side.

Slowly he slid into the placid blue water and pushed off from the side of the gently rocking boat.

With powerful strokes Rick propelled himself downward through a dreamland of waving plants and darting fish. At any moment he hoped to see the dark outline of a wreck appear before him. He peered over each jutting mound of sand or entanglement of debris in hopes of sighting the skeleton outline of a sunken ship.

Again and again he surfaced, gulped in a breath of air and then dived to shoot along another unexplored section of the sandy bottom. But all was in vain.

Gradually Rick's muscles tired and cold ate into his limbs. Finally he had had enough. He grasped the edge of the boat and slowly hoisted himself into it.

Roy asked eagerly if he had found the sunken ship. Dead tired, Rick replied that he had not. Roy begged him to allow him to search for a while. When Roy promised to be cautious and not to venture into deeper water, Rick allowed him to don the equipment. Roy slipped silently beneath the water, which bubbled loudly as it swirled over his head.

From the bobbing boat Rick calmly observed the speed with which his brother swam. Then he hoisted the anchor and began to drift along the surface in the hope of sighting the wreck below.

Using a glass-bottomed bucket Neb had given him, he scanned the sloping bottom for signs of the wreck. Rick watched a turtle swimming lazily through the tranquil water. Then, right below the creature which had attracted his attention, he thought he saw the broken, algae-draped spar of a mast and the vague shadowy outline of the broken hull of a wreck. The sunken ship seemed to lie on a ledge beyond which the lake bottom fell sharply away.

Rick stood still for a moment. Then he dove over the side and plunged downward, knifing through the water with a swishing swoosh. Even without the aid of his mask he could clearly make out the form of the wreck looming before him. In an instant he was beside the wreck and tying a marker buoy to it.

The skeleton-like hulk was overgrown with aquatic plants and covered with debris and slime. An ecstasy—an unchained joy—thrilled within Rick as he rose to the surface. He climbed quickly into the boat.

"I've found it! I've found it!" Rick screamed. Roy's head abruptly burst above the surface and Rick called out to him.

"I've found the wreck!" Rick gasped.

"Golly! Way to go! Where is she?"

"Look!" Rick pulsed with excitement as he pointed to the red buoy which bobbed up and down on the water's surface. "Right below that lies the wreck—and the treasure!"

Roy got aboard and lowered the anchor over the side as Rick prepared to dive. As they worked the wind started to rise, causing swells to form upon the surface of the lake. A storm seemed inevitable, but they were too taken up with the lure of treasure to notice.

Rick fitted the mask snugly over his face and hastily checked the seal. Carrying the basket, attached to which was a strong rope so that Roy could haul up anything found, he disappeared beneath the surface.

Before him appeared the dark, forbidding outline of the wreck. It lay with a slight list to starboard with almost half its hulk concealed in the sand.

For an instant, Rick scanned every external detail of the ancient ship. He had found it! But would there be a fortune in her hold?

He propelled himself through the hole in the side of the wreck and along a gloomy passageway. The rotting wood, soft and slimy, crumbled under his touch. Darting fish sped away at his approach.

Rick saw ahead a shattered door hanging on one of its rusted hinges. He moved past this and into the hold. Through the jagged holes in the hull sand had drifted in, so that now it was a jungle of aquatic plants.

Feverishly, Rick began to dig in the sand. The air swelled suddenly in his lungs. He clawed upward through a shattered portion of the deck, and up to the surface. Gulping in air, he dove down . . . down. In the hold he started again to scrape away the sand. Great inky clouds of mire twisted upward as he dug frantically. Then he felt a ring. Could it be attached to a treasure chest?

With all his strength, Rick struggled to pull whatever that ring was attached to out of the sand. Abruptly it came free and for an instant he stared in wide-eyed disbelief at the decayed wood and rusty locks of an ancient box.

Rick placed the chest in the basket and, by giving the rope a sharp tug, signalled Roy to draw it up. He steadied the box as it was pulled out of the hold, through the passageway, then to the surface.

After the chest was safely in the tossing boat, Rick dove once again to the wreck. As he approached the hulk he noticed that it had seemed to slip somewhat and now hung on the brink of the ledge, beyond which lay the impenetrable depths of the lake. Once in the hold, Rick set feverishly to work again.

Suddenly the rotting timbers of the wreck groaned as if under a great strain, and the vessel shifted. Rick felt the world pitch under him and he toppled, crushed downward by a loosened mass of debris. Shattered planks and rotting casks squashed him into the sand. For a minute he could not move. Was he trapped—doomed to die a hideous death?

Terror pierced Rick's heart and he experienced a sudden sickening of the soul as he pitted his muscles against the planks. With all his might, he succeeded in moving the rotting timber. Terrified, he shivered in the frigid, numbing water.

Then, recklessly, he continued to dig. At last his hands found the shabby surface of a chest and he wrenched it violently from the sand. Rick looked about for the basket. To his dismay it was buried under a mass of sand and decaying planks. No effort could free it.

Instantly, Rick hefted the chest onto his shoulder and, while one hand held

it steady, he stroked for the surface with the other. As he emerged through the gaping hole in the deck, he shuddered. A great swirling mass of sand and rocks started to fall on the vessel like a bombardment of enemy gunfire. An inky cloud of mud surrounded the sunken ship as rocks beat a terrible tattoo on the wreck's hulk.

In horror, the boy watched as the vessel toppled slowly off the ledge. Down, down, it plummeted into obscurity, into the utter raven blackness below, which swallowed it like a fiendish beast of prey. Rick shuddered in dread. He knew he could have been trapped in the wreck if he had remained a second longer.

Rick's whole body ached as he struggled toward the surface carrying the massive chest. For a moment it tumbled from his hands, but with a desperate lunge he succeeded in grabbing hold of a ring on the box. Almost simultaneously, with a rushing sound, the decayed wood of the chest shattered. Its glittering contents tumbled downward amid a whirling mass of splintered wood.

Rick watched with despair as gleaming golden coins winked downward. He cursed his ill luck. His lungs burned, but the sight of those gleaming objects falling, falling, tore at his heart. With one shaking hand he grasped a glittering coin and then shot to the surface.

Rick got a hold on the tossing boat and Roy dragged him into the craft. Rick lay there gasping and coughing for a minute. Then he saw the troubled surface of the lake and the black, forbidding sky. White-crested waves beat against the sides of their boat, which swung wildly on its taut anchor rope.

A cutting wind howled with horrid intensity, and whistled in their ears as Roy started the motor. Dark waves pounded like giant fists against the bow of the precariously pitching boat as they set out for land.

When they struck shore, Rick and Roy hauled the boat up on land and overturned it. They set rocks under either side to raise it off the ground, and they dragged the chest under the overturned boat and took shelter under it themselves. Then the rain came in pounding torrents and lightning cracked across the scowling sky.

But the boys paid little attention to this. After a great deal of effort, the rusted locks of the chest were broken open and the lid thrown wide. Their faces showed a trace of disappointment, for not gold but leather sacks and rotted books looked up at them from the chest. Rick seized one of the sacks and wrenched it open.

The rotted material ripped, and golden objects tumbled out onto the ground. They were discolored and slime-coated, but Rick instantly recognized them as gold coins. He seized a handful and let them slither through his fingers.

Shouting loudly of their finds, the boys continued to break open the sacks. After the last was broken open, the coins of many nations were stacked in neat piles. Pieces-of-eight, gold doubloons, ducats, gold crowns, guineas and others stood in a gleaming procession.

The youths then pulled the musty, slimy books out of the chest and set them beside the coins. They polished and admired the ancient relics they had found. A silver bar and an ancient pistol with a shabby handle and rusted barrel were taken out of the battered chest. The boys were delighted with the pistol. They peered at it from every angle and examined its aged workings with inquisitive eyes. Trinkets and an old parchment letter sealed in a waterproof pouch were set beside the stacked coins. Rotting clothes that almost fell to dust in their hands were drawn from the chest as well as the decayed remains of a diary.

At last the chest was empty. What a day! Rick thought, as his eyes danced over the vast array of objects.

Carefully, the coins and other things were returned to the ancient strongbox, which was closed and set aside. Seeing the parchment letter, Rick carelessly glanced over it, then thrust it into his pocket without returning it to its waterproof pouch. Soon the tired youths tossed and turned in fitful sleep as the rain exploded on the hull of their boat.

Suddenly, Roy heard the grating of wood on rock and the shuffle of feet. He stirred and the sound abruptly ceased. The rain had stopped. Silence reigned.

Roy lay still. There was a whisper of movement. Then he seemed to hear the sound of a motor and the swish of water. It was only his imagination, he thought. With a groping hand, he felt about for the chest. To his horror it was not to be found! Hurriedly he crawled out from under the overturned boat.

Dawn streaked the sky with crimson lines. In the distance a speeding boat could be seen. Roy's soul sank in despair and his fists clenched.

"Rick! Wake up! The chest—it's gone! Somebody's stolen our treasure! Rick!"

"Whaaa-at??!! Are you sure—or are you kidding?" Rick threw off the drowsiness of sleep in a moment and sat bolt upright slamming his head against the boat with such force that the world swam before his eyes. He let out a howl of pain and scrambled out from under their temporary shelter, clutching at his head. A gleam burned in his eyes and his fists were clenched so hard his knuckles were white.

"So help me, if you're lying, Roy, I'll fix you but good!"

Rick looked puzzled. Suddenly he said: "Look here, Roy! There's a bow imprint on the sand. It isn't ours. I'm sure of that. And, look!" Rick pointed to the sand. "Here's the imprint of the chest. Whoever stole it must have set it down right here, then he loaded it into the boat and beat it."

"But how did they even know we had found a treasure?" Roy asked.

Rick looked away so as not to show the tears welling in his eyes. He felt bitter rage burning within him. His fingers were tensed and his face wrinkled with hate as the black spot of a speeding boat disappeared beyond the horizon.

"Let's go after them," Roy shouted. "We can overtake them, maybe, and then we'll teach them a lesson, for sure!"

Rick thought of how futile it would be to set out in pursuit of the robbers.

"No," he said flatly. His voice wavered and his tone was bitter. "Not now, at least. We're in for it as it is. Mom and Dad are probably worried sick. We'll catch it good, for sure, if we don't get home now."

* * *

It was a dead-tired pair of boys who moored their boat to the dock and faced a barrage of questions from their anxious parents.

"Why didn't you come home last night? Where have you been? What have you been doing all this time?" Their parents fairly shouted at the two youths.

"Do you realize that we couldn't sleep at all last night? Do you know half the people in town are out looking for you? How were we to know your boat hadn't capsized in the storm and you both drowned? Now, where were you? Speak up!"

"We were searching for sunken treasure," Roy blurted as his father and mother glared at him. "We took shelter from the storm."

"Nonsense! Don't lie to us! Has that old fool Neb been filling your heads with his wild tales again?"

"But we really did find treasure!" Rick said. "Golly, you should have seen all those coins and—"

"Found treasure, eh?"

"Where is it then?"

Both boys looked foolish, their faces crimson. They would have to tell the whole story. "It was stolen," Rick murmured.

"Stolen!" Their mother glowered at them. "A likely story!" The brothers squirmed.

"But I do have an old letter I found in the chest," Rick told her. He drew it out of his pocket. His father took the parchment and carefully opened it.

"Like I said, we found a treasure chest!"

Rick's voice was tense. "But somebody stole it while we were sleeping. Honest, that's the truth!"

Rick's father touched the boy's shoulder. "I think I believe you, son. Let's go home and look at this letter more closely."

Later, when they had cleaned up, eaten a good meal and studied the ancient letter with their father, the boys felt better. "Let's go show the letter to Neb!"

"Just a minute," their father said. "Do you understand what this letter means?"

The boys blinked and said nothing.

"It means," their father continued, "that the ship you say you found contained five hundred thousand dollars in gold coins! At least, she did when she sailed, over two hundred years ago. That's how old this letter is. The vessel was British. The coins were from several different countries and, I gather from this letter, were being used to pay British officers and troops serving in Upper Canada. Guess they didn't get paid that year, eh?"

Their mother said, "I'm sorry we doubted you, boys. But your story did sound pretty far-fetched at first!"

The boys brightened, and Rick said, "Mom, Dad, can we go tell Neb about the treasure and show him the letter?"

"I'll go with you," said their father.

They found old Neb in his little shack by the water. They heard him shuffling to open the door after they had knocked several times.

"Who is it?" he said curtly. "What do you want?"

"It's Rick and Roy," Rick told him. "Dad came with us. We have something to show you and a whole lot to tell you!"

Neb let them inside, waved them to chairs and re-lighted his pipe. They told him about finding the sunken wreck, bringing some treasure ashore, the storm, and then the crushing loss to some thief in a motorboat.

"It's a sad story, me lads. By thunder, if I could catch whoever took your treasure I swear they would be punished!"

Neb sucked on his pipe. "But I fear that pursuit would be useless. You might report it to the authorities —but, alas, I fear you've seen the last of that treasure!"

The boys' father produced the ancient parchment. "Here's an old letter the boys found, too. It's pretty interesting. Seems to back up what you told them about the ship."

The old mariner took the letter and opened it gingerly. He squinted over it for what seemed a long time. Then he sank into a chair.

Neb was about to speak when something rolled from his pocket, clinked to the floor and lay there, glittering.

"What's that?" Roy said. "It looks like a gold coin!"

Rick grabbed it before Neb could turn in his chair. "Hey! That's just like the ones we found! I remember now—"

He rummaged in his pants pocket and came up with the gold coin he had saved when he was underwater, when the old chest had fallen apart in his hands.

"Look, Dad! These coins are the same!"

His father agreed. Both were old British gold crowns, of a type described in the ancient letter.

"Oh, I've had that coin for many a year," Neb started, "and I don't rightly recall just where I came upon it—"

Roy interrupted with a whoop. He was kneeling in the corner, at the foot of Neb's bed. "Look here! It's our treasure chest! What are you doing with our chest, Neb?"

Rick looked Neb straight in the eye. "That was **you** in the motorboat, wasn't it? Why, Neb? Didn't you think we would share the treasure with you?"

Rick's father said, "Don't think too harshly of him, son. He's an old man and I guess he's been dreaming about treasures for a long time."

Neb's gaze was beyond any of them, beyond the room, far beyond that house. He spoke softly. "I never thought you'd really find it. But I couldn't take the chance that you might. So I followed you. Yes, me hearties, I took your treasure. But it was really mine, because I was the one who told you about it . . ."

"It isn't yours—" Roy shouted.

His father cut in. "Easy, boy. It doesn't rightfully belong to any of you, you know. These things have to be reported and until it's all straightened out I don't think any of you should be fighting over who owns it. Maybe the Crown owns it, I don't know."

Neb slumped on the edge of his bed.

"Let's go, boys. I think he wants to be left alone. Roy, you help Rick carry the chest. We'll take it to the museum in the morning and ask Dr. Kendall about it.

"Okay, Dad," Rick said. "But you're not going to tell the police about Neb taking the stuff, are you?"

"No, Dad, don't do that! He's our friend," Roy bleated.

"What do you say, Neb?"

The old man, his dreams shattered, raised his eyes, looked at the boys and then at their father. He smiled sadly, and said:

"All my life I've hunted treasure and never found gold or silver or jewels. I can stop hunting now."

"I'm sure you'll get your share of this treasure," Rick's father told him, "or a share of the reward for it, if there is a reward."

Neb looked at the boys again.

"Sure," said Rick, "we'll share it with Neb."

"You bet," cried Roy.

Their father stepped across the room and shook hands with Neb.

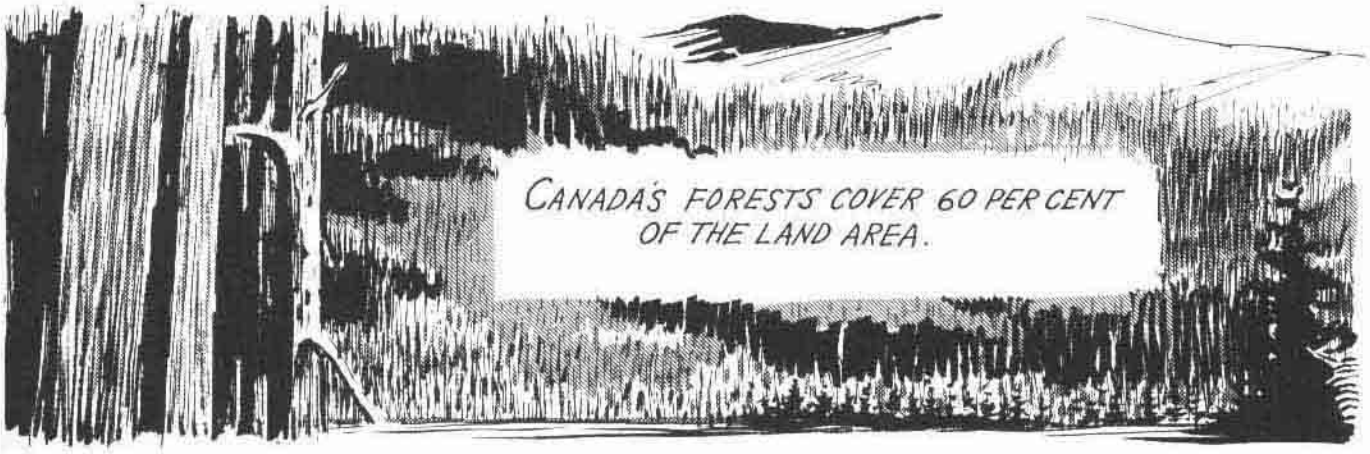
"It's a deal," he said.

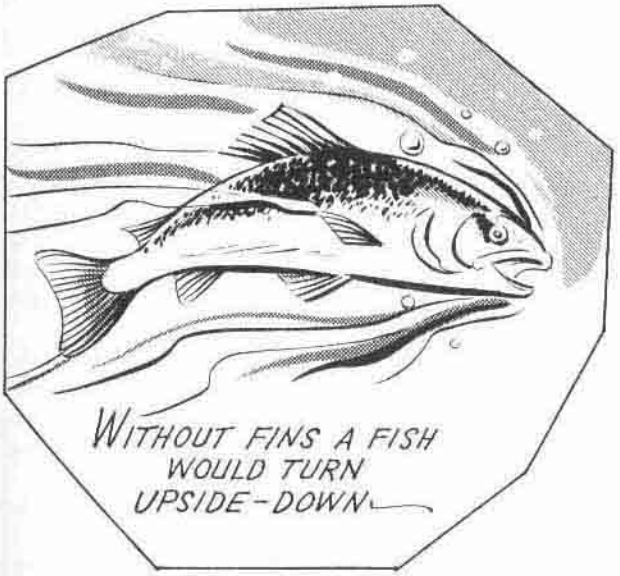
The old man was on the verge of tears as they left, quietly closing the door behind them.

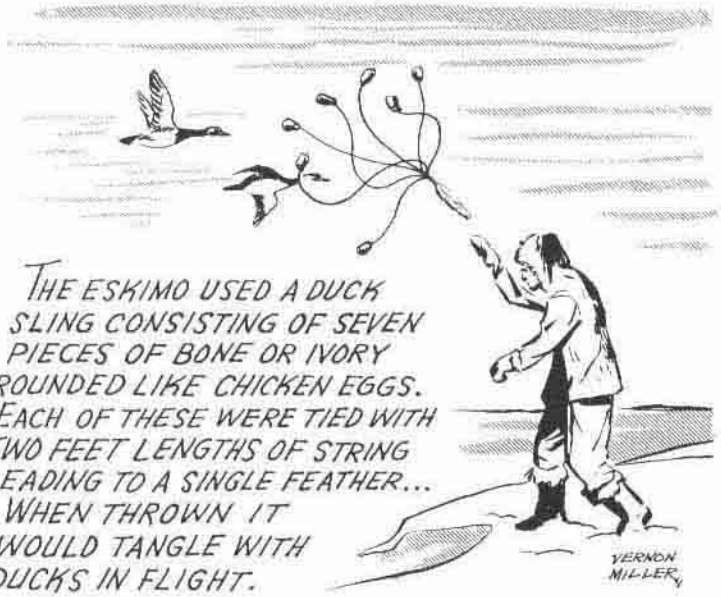
Canadata

The WHITE-TAILED DEER

IS DISTRIBUTED FROM NOVA SCOTIA TO BRITISH COLUMBIA... THE CHARACTERISTIC WHITE TAIL, FROM WHICH IT DERIVES IT'S NAME, IS LONG AND BUSHY... THE UNDERSIDE IS WHITE... WHEN STARTLED, THE TAIL GOES UP LIKE A WHITE FLAG AND FLAPPING FROM SIDE TO SIDE WARNS OTHER DEER OF DANGER.







Tom Jackson — Detective

With the chance discovery of a diamond in the sand our young hero helps police solve a jewel robbery

by C. G. A. Storey

Tom walked slowly along the beach on his way home. His mind was still on the game he and Jeff Carson had been playing on the sand hills.

Suddenly he stopped and looked down at his feet. There among the stones something glittered brightly as it caught the rays of the setting sun.

Stopping, he picked it up. Funny looking piece of glass, he thought, almost like a—a diamond!

He caught his breath. A diamond! His thoughts were in a whirl. That book he'd read last year about the diamond mines of South Africa. Supposing — and he almost stopped breathing at the very idea—supposing he, Tom Jackson, had found the only diamond mine in Canada!

He sat down on the pebbles and examined his find. There was a faint bluish tinge to it and, as he turned it this way and that, it flashed as though it were on fire.

Then he remembered his promise to be home in time for supper. Quickly he thrust his treasure into a pocket and leaping to his feet headed up the beach toward home.

"Now don't forget your homework," said his mother when the supper things had been cleared away.

With a groan Tom settled at the desk in his room. Arithmetic! When a fellow had something in his pocket that was worth thousands of dollars —maybe millions! Golly, he thought, I could be the richest guy in the world. He imagined all the things he could buy. Ice cream by the gallon! Candy by the ton!

A hand shaking his shoulder brought him back to earth. "Come on, Tom," said his father. "You can daydream when you've finished your homework."

Tom sighed and turned back to his arithmetic.

After school next day he showed

his find to Jeff.

"Jeepers," said Jeff. "Let's go see if there's any more."

Together they raced down to the beach. Up and down they searched but no luck. Tom's vision of himself as a diamond mine owner faded rapidly.

Finally they sat down. "Well, anyway," said Tom, "I've got this one". He pulled it out of his pocket and they both looked at it.

"How much do you think it's worth?" asked Jeff.

Tom wiped his diamond casually on his sleeve. "Oh, I dunno—maybe fifty thousand dollars."

"Golly," said Jeff in a hushed voice. He couldn't imagine fifty thousand dollars. "How're you goin' to sell it?"

Now this was something that had been bothering Tom all day. "I guess I'll have to tell Dad about it," he said. "Aw heck, Jeff, someone must have lost it. It doesn't belong to me at all."

Sadly he put the diamond back in his pocket and as the two boys sat gazing out over the lake Tom's dream of riches disappeared into the distance.

Suddenly a voice spoke to them.

"Say, kids, you seen a piece of glass on the beach here?"

The speaker was a rough-looking man, unshaven and dirty.

Tom and Jeff were so startled they just sat there. Then Tom realized the man was talking about the diamond. He doesn't look like the kind of man to own a valuable jewel, thought Tom.

Nudging Jeff's knee to keep him quiet, Tom said, "Glass? Gee mister, there's lots of glass round here. People are always breaking pop bottles and . . . "

"Nah," interrupted the man impatiently, "Not that kind of glass—a bright, shiny piece about the size of your thumb."

Tom shook his head. The man muttered something to himself and slouched away up the beach, searching as he went.

"Jeff," said Tom excitedly, "I bet you anything he's stolen that diamond."

Jeff's eyes opened wide. "What if he killed someone to get it," he breathed, "He sure looks tough—almost like a pirate. We'd better go get the police."

"We haven't got time. We've got to trail him and see where he goes—then we can get the police. Maybe he's got some more loot stowed away somewhere. Come on, we'll go over the sand hills then he won't see us."

They set off after the man. Jeff wasn't too keen, really. The man did look like a pirate—just like in a book he'd been reading — Black Bart's Treasure.

"Tom," he whispered, "What if he's got a ship—if he catches us we might end up walking the plank!"

"Shh," said Tom, his eyes fixed on the figure below on the beach. "Look, he's stopped searching. Now maybe he'll lead us to his hide-out."

The man had raised his arms as though in disgust and was walking rapidly from the beach.

"Come on," said Tom, "We mustn't lose him now—but keep as close to the ground as you can."

The man moved quickly toward the town with Tom and Jeff in hot pursuit and soon they saw him dodge down a dingy side street. Tom broke into a run with Jeff close behind. They reached the corner just in time to see their quarry going into a broken-down house.

"Now," said Tom, "We've got to get the police."

At the police station they found the sergeant in charge talking to a man who was not in uniform.

Seeing the two boys burst in very much out of breath, the sergeant broke off his conversation. "Well, lads, what brings you in such a hurry?"

"We've found a burglar," gasped Tom. "And we trailed him to his hide-out and we can lead you right to it . . ."

"Hold on, boy," laughed the sergeant. "Take your time."

"And he's a pirate too, I betcha," squeaked Jeff.

The sergeant and his companion smiled broadly but the smiles faded from their faces as Tom, fumbling quickly in his pocket, brought out his diamond and laid it on the sergeant's desk.

"Well now," exclaimed the sergeant, "You must have a story to go with this. Let's have it, lad, quickly!"

Tom took a deep breath and told the police officer all that had happened.

When he had finished the sergeant looked at his friend. "This looks like a break for you," he said.

Turning to the boys he went on: "This is Detective-Sergeant Williams and he's working on a jewel robbery case."

"Without much success, so far," added the detective. He reached for the telephone and, after a brief conversation on it, told the sergeant, "A squad car will be here in a few moments and then our young friends can lead us to the suspect's house."

Jeff nudged Tom. "Did you hear that?" he whispered. "We're going for a ride in a squad car. Wait 'til the kids at school hear about this!"

Tom didn't answer. His eyes were watching everything the detective did, because if there was one thing Tom wanted to be, other than a diamond mine owner, it was a detective.

The squad car was soon at the station with three more detectives and then, with Tom and Jeff sitting beside the driver, was quickly on its way.

Quietly Tom gave the driver directions.

"We'll park at the end of the street," said the detective-sergeant, "so as not to give the alarm. You boys will have to stay in the car—if the man sees you he'll try to get away."

Tom and Jeff could hardly keep still for excitement. They watched the detectives walk down the street one at a time. Sergeant Williams and one man went to the front door of the tumble-down house and the two other detectives went round to the back.

The front door opened at the sergeant's knock and then tried to shut again quickly. The detectives put their shoulders against it and burst in.

It was a matter of a few moments before the boys saw the police officers reappear. This time they had the jewel thief between them and one of the detectives carried a large bag.

"This is an old enemy of ours, boys," said Sergeant Williams as the prisoner was loaded into the car. "Slippery Sam Wilkes, he's called—though this time he hasn't been so slippery, thanks to you two!"

At the police station Tom and Jeff were congratulated again and given a ride home in the squad car.

Tom swaggered with pride as he walked into his house with Sergeant Williams.

"A smart boy you've got," said the detective to Tom's father after telling him about the capture of the jewel thief.

"I shouldn't be surprised to see him on the police force one of these days."

Tom's father smiled and ruffled Tom's hair. "As long as he doesn't have to do arithmetic, you may be right," he said. Tom grinned.

Canadata

LOBSTERS SHED THEIR SHELL WHICH IS REPLACED WITH A NEW ONE AT LEAST ONCE A YEAR.

THERE ARE ABOUT 525 KINDS OF OWLS LIVING THROUGHOUT THE TEMPERATE, TROPICAL AND SUBARCTIC REGIONS OF THE WORLD. OWLS KILL A VAST NUMBER OF RODENTS FOR FOOD AND THEREFORE HELP TO CONTROL THE RODENT POPULATION.....

IT IS NOT OFTEN THAT AN OWL WILL TAKE A CHICKEN OR KILL A BIRD SINCE THEY DO MOST OF THEIR HUNTING AT NIGHT WHEN SONGBIRDS AND POULTRY ARE ASLEEP..

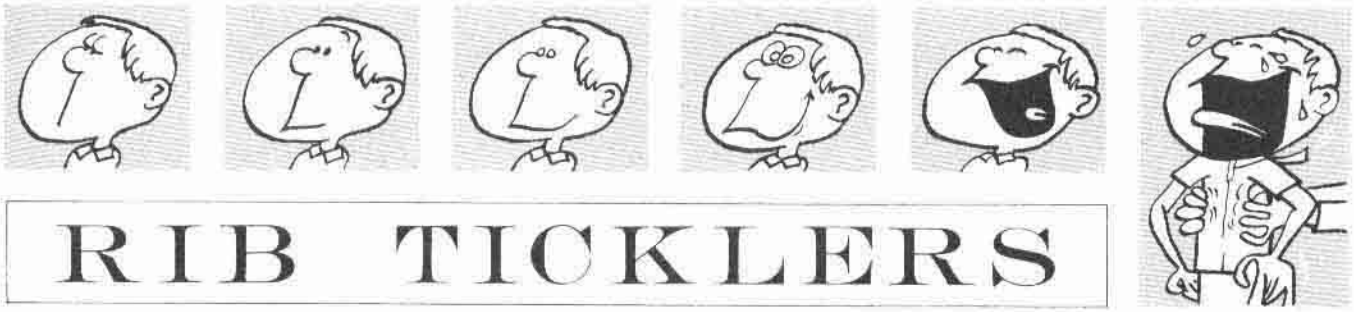
ESKIMO IS AN INDIAN WORD.

IN ALGONQUIN IT MEANS 'EATERS OF RAW FLESH'

IN THE CREE TONGUE IT IS 'ASKIMAWEW' MEANING 'HE EATS IT RAW'

SEA ICE

MADE FROM SALT WATER BECOMES FREE OF BRINE WHEN IT BECOMES OLD.



RIB TICKLERS

Teacher: What family does the walrus belong to?
Pupil: I don't know. No family in our neighbourhood has one.
Gordon Surkan, Prince Albert, Sask.

Mother Owl: Dear, I'm afraid there is something wrong with junior.
Father Owl: What do you mean?
Mother Owl: He doesn't give a hoot about anything!
Brad Capes, Beaconsfield, Que.

Q: If you saw a counterfeit bill on the sidewalk and walked past it, why would you be arrested?
A: For passing counterfeit money!
Roger Ganley, North Battleford, Sask.

Ross: I commute by train every day. I live in Fishhook.
Floss: Fishhook! Where's that?
Ross: At the end of the line.
Robert Keene, Toronto, Ont.

Q: Where can you find a used Camel?
A: Camelot.
Bruce Irons, Whitehorse, Yukon.

Customer: You said these pants are all wool, but there's a label saying "All Cotton".
Clerk: That's just to confuse the moths!
Kent Peyton, Gander, Nfld.

Father (talking to baby): "Goo, goo, da da, ma ma."
Baby: "I have a feeling you're trying to get something across to me."
Clarence Bobowski, Saskatoon, Sask.

Cecilia: What do you call a person who steals pigs?
Dianne: I don't know.
Cecilia: A hamburglar.
Armand Lorge, Thorburn, N.S.

Judge: "Have you ever been up before me?"
Prisoner: "I dunno. What time do you get up?"
Brian Tobin, Dorion, Quebec.

Will: Will you join me in a bowl of soup?
Phil: Do you think there is room for both of us?
Andy Lank, Arvida, Que.

An angry customer stormed into the pet shop. "Say," he said to the owner, "I thought you said that cat I bought was splendid for mice. Well, he hasn't caught one yet."
"Well," answered the owner, "isn't that splendid for the mice?"
Gerald Dobbin, Corner Brook, Nfld.

Prison Warden: I have been in charge here for 10 years. I think we should celebrate. What kind of a party do you suggest?
Prisoners: Open house!
Elaine Wolfram, Grand Forks, B.C.

Customer: Waiter. Will my spaghetti be very long?
Waiter: I don't know, sir, we've never measured it.
Saverio Pennino, Montreal, Que.

Panhandler: Ma'am, would you please give me 25c for a sandwich?
Lady: Let me see the sandwich.
Larry Martin, St. John's, Nfld.

In the middle of a performance a voice over the P.A. says: "Will the owner of the white Pontiac bearing licence plate number 8523178958973-5108953890 please remove his car from the parking lot, the licence plate is blocking the driveway."
Chris Wherry, Willowdale, Ont.

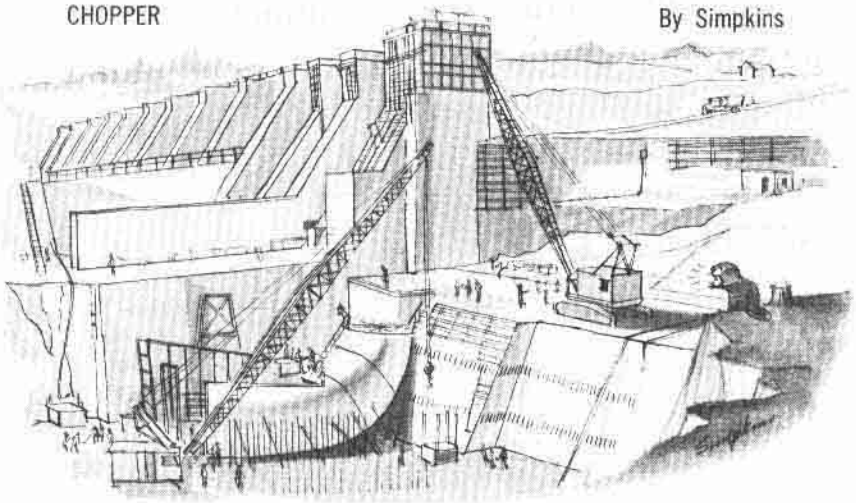
Voice over telephone: Tommy Hagan will not be at school today.
Teacher: Who is speaking please?
Voice: This is my father speaking.
Mark Cumberland, Agincourt, Ont.

Q: When does a doctor become very annoyed?
A: When he runs out of patients.
Patricia Faulknor, West Hill, Ont.

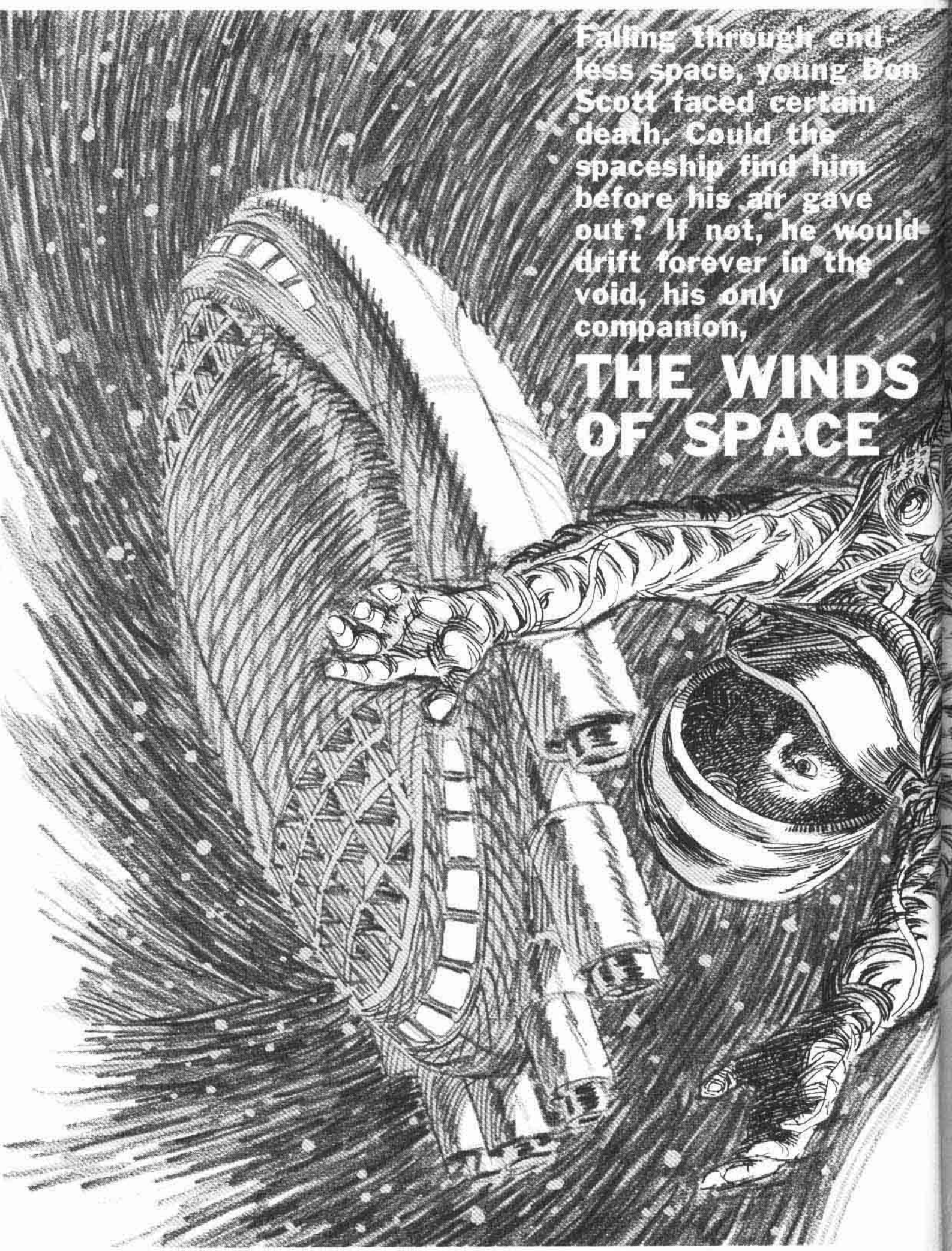
George: How'd you get that tire slashed?
Reggie: Ran over a milk bottle.
George: Why didn't you steer around it?
Reggie: The fool kid hid it under his jacket.
Rory Langton, Vancouver, B.C.

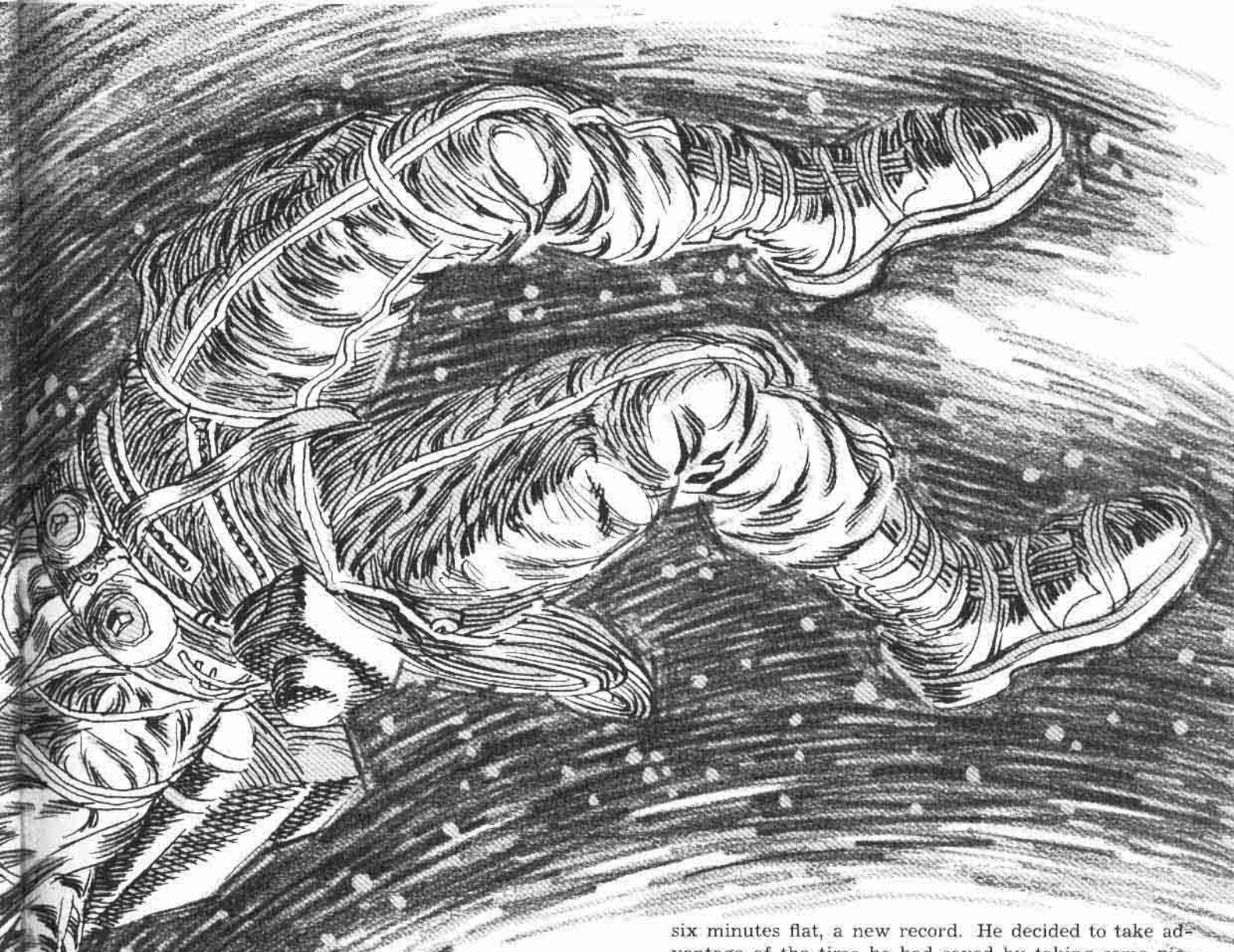
Tim: Well, I'm off on a safari to Africa.
Jim: Drop us a lion now and then.
Nikki Sones, Dundas, Ontario.

CHOPPER By Simpkins



"Showoffs!"


Falling through endless space, young Don Scott faced certain death. Could the spaceship find him before his air gave out? If not, he would drift forever in the void, his only companion,
THE WINDS OF SPACE



By Rae Parker

The winds of space echoed in Don Scott's ears. Except you could not call them winds, and they didn't really echo loudly. Besides, his ears were enclosed, along with the rest of his head, in the "iron-glass" helmet.

The "winds" were really a conglomeration of cosmic dust, invisible rays, gravitational pulls and counter-pulls, eddies of gaseous elements, and the millions of unknown "things" which form the gentle galactic currents. Spacemen get used to the sound they create. After a while they don't even hear it unless they think about it.

Don was "on the Mini", the hour-long Minor inspection tour of the ship's exterior. He had been responsible for this inspection since his thirteenth birthday, almost two months ago. His job was to look for skin damage and pick off the small bits of space debris attracted by the ship's slight gravitational pull. He pushed them into the research bucket strapped to his waist. If enough of these debris were allowed to gather, their resistance might eventually cause the ship to go slightly off the course for Vega, the ship's destination and his family's new home, and force the use of extra fuel to make corrections.

Don looked at his watch. He had finished in forty-six minutes flat, a new record. He decided to take advantage of the time he had saved by taking some pictures of the ship with the camera he had been given for his birthday. Quickly, he tied the thin, 500-yard utility-cord at his belt to a mooring eyelet, then flicked the switch cutting off the current to his magnetic boots. Pushing with his feet against the ship, he drifted away, tumbling slowly and dreamlike through space until he felt the slight tug against his utility-cord.

He unfastened the camera from his belt, set the aperture, and had to look all over the place before he found the ship was behind and "below" him, under his feet. Already it had drifted slightly ahead, so that he would soon begin to be towed. He took two or three fast shots, then used the jet-pack on his back to get above the top of the saucer-shaped spacecraft. From there he snapped more pictures, watching through the sights as the ship slowly pulled ahead of him, changing from a circle to an oval to a thinner and thinner disc.

Using his jet-pack again, he set it so he would spin in a continuous cartwheel. From all he could feel, he was not moving at all. There was no gravity to give him the sensation of spinning. It looked as if it were the ship spinning around, like looking down on a silver dollar twirling on a tabletop.

He took three shots before using his jet-pack to stop his spin. He glanced at his watch. Five minutes past four. He had gone five minutes over his hour. He pulled on the utility-cord, hauling himself hand over hand

toward the ship. Suddenly, the line felt slack. He looked ahead, startled, his eye following the cord. "I just pulled too hard," he thought, "and got ahead of the rope."

He continued pulling, waiting for the rope to tighten.

But it didn't tighten. Glancing again along the cord, he wondered what was wrong. He could not see the whole length, but it **looked** as if it were attached.

Again he pulled on the rope, and kept pulling.

His mouth opened in wonder when he saw the end of the rope. He pulled it in until the end was in his hand. He stared in disbelief. "I didn't tie it properly!" he thought. The ship was still about four hundred yards away.

His first reaction was panic at what his father would do to him for being so careless. That was the first thing he had been taught, to make sure he secured himself to the ship. In fact every time he made his inspection, he was supposed to use his clip-on **safety**-line, but the magnetic shoes had always seemed to be more than enough, so he rarely bothered. His father didn't know this. It would never occur to Mr. Scott that anyone could be so foolish.

And this time, in tying the longer utility-cord to the ship, he had done it too quickly, too carelessly. His father would be furious.

The distance between him and the ship was increasing, slowly now, but soon it would be rapid. Don flicked on his jet-pack and turned it to full power.

Anxiously, he kept his eyes on the ship, trying to see whether he was coming closer. It was hard to tell.

The ship cruised at nearly half the speed of light with the help of its eight atomic thrust-chambers. Don's jet-pack could manage only a fraction of this power, but his body had only a tiny fraction of mass compared to the ship's bulk, so the jet-pack's power should be enough.

He didn't know if he was catching up or not. He seemed to be getting closer, but he wasn't sure. Maybe he was only hoping for it to be true.

The ship had an almost unlimited supply of fuel. Don's jet-pack did not.

* * * * *

Within the ship, Don's older brother Ricky was bent over his desk, studying advanced stellar navigation. It was hard, exhausting brainwork, but he enjoyed it. Already at sixteen years of age, he was often able to help his father. Mr. Scott wasn't trained in the newest methods. It might take him two hours to work out a problem which Ricky, with the new methods, could work out in fifteen or twenty minutes.

But there was much Ricky had yet to learn. There were so **many** things he didn't know, and the more he learned the more it seemed to him that he knew next to nothing. "But one of these days," he swore to himself, "I'm going to have a ship of my own." With this, he buckled down even harder to his studies.

He became so interested in his star-maps that it seemed only minutes before his mother called that supper was ready. Already? He looked at his watch. Five-thirty. He shrugged, closed his books and started down the passageway, calling over his shoulder. "Come on, Don. Supper's ready."

"Where's Don?" asked his father, after Ricky had sat down.

Ricky peered down the passageway. "I called him. I guess he didn't hear me," he said, then turned to sniff at his food. Ugh. Turnips again.

"Mary," said Mr. Scott to Ricky's sister, "you go and tell your brother to hurry up or he won't get any . . ." he looked at his plate, ". . . or he'll have to eat two helpings of powdered turnips."

Mary scowled and slunk away from the table. She was eight years old, and didn't like having to do what other people were supposed to have already done. She came back looking even more annoyed. "He's not in his room, daddy."

"He's probably in the gym room," said Ricky.

"He ain't there neither."

"He **isn't** there **either**," Ricky corrected.

"I know. So where is he?"

Ricky and his father looked at each other blankly. Then they both looked at the mother. Then both Rick's mother and dad looked at him. His face went white. "I haven't seen him since his Mini," he said, holding his breath.

Mr. Scott jumped up. "Before? or after?!"

Rick's mouth opened, forming the word "before", but no sound came out.

"You idiot!" his father yelled.

"I forgot," whispered Rick.

"You forgot! **Forgot**? You're not **supposed** to forget! You're supposed to take his report as soon as he finishes his inspection, not **forget** to take it! 'I forgot' is no excuse! In space you **don't** forget. It's **fatal** to forget. It's **murder!**"

Ricky shrank back, frightened by his father's rage.

Mr. Scott looked at his watch. Ten to six. "Almost two hours," he muttered, "maybe three." Quickly he went to the passageway, ordering Ricky to come with him.

He ran into the pilot-room, Ricky right behind him, and slammed down the switch cutting off the power to the eight thrust-chambers. Dead silence immediately descended upon them. Now they were drifting through space, still at almost half the speed of light, but already slowing.

"You're the mathematician, Ricky. **You** figure out how long it'll take us to slow down enough for him to catch up."

"But dad! The currents of space! He may have drifted off course!"

"I'll get the space-maps and figure out which way he would drift, and how far. Don't stand there wasting time! The more time we waste the bigger risk we take of losing him. **Forever!**"

"It'll be like trying to find a needle in an Earth-sized haystack!"

"Well you start helping me search and figure, boy, 'cause if we don't find him I might just take a notion to chuck you out there with him, halfway between stars."

* * * * *

For a while, Don had thought he would be able to reach the ship. At full power, his jet-pack had brought him within a hundred yards, but it had taken more than half an hour to do it. Then, suddenly, the ship started moving away again. His jet-pack had run out of fuel.

Don watched the ship move away. Slowly at first, but ever faster and faster. The ship was going at the same speed it had been going for two years, but Don, without power to push his mass, was slowing down.

he looked at the gauge on his breathing-tanks. Less than five hours of air. He began yelling at the top of his voice. But sound doesn't carry in the near-vacuum of space. Soon the ship was like a distant needle among the stars. Then it was gone. Forever and forever, for the rest of eternity, gone.

He yelled and screamed into the emptiness for nearly an hour. Then he gave up. Four hours. "In four hours, I won't be able to breath."

* * * * *

Mr. Scott scowled at the maps in front of him. Already his son Ricky had figured out exactly how much the ship would slow down in every minute for the next two hours, and was starting to figure out what different speeds Don might be travelling through empty space. And yet Mr. Scott was having trouble with the easier task of figuring out how far the currents of space would cause them to drift, now that the motors were stopped. It would be even harder to figure out Don's drift!

Ricky worked furiously. He knew it was partly his fault that Don was lost. But he also knew Don's habit of not using his safety-line. He had no time to worry about whose fault it was though. He figured out what the total weight of Don and his equipment would be, then his pen flew over the paper as he began jotting down Don's possible deceleration, minute by minute for the next two hours. The trouble was, he didn't know if Don had been separated from the ship at three o'clock, four o'clock, or somewhere in between. Ricky put down two columns of figures, allowing for the minimum and maximum.

The breathing-tanks held a six-hour air supply. Already it was well past seven o'clock. Less than two hours left! The sweat poured from Ricky's brow as he worked.

By the time he had finished, it was eight o'clock. Only one hour left! Looking at his papers, Ricky realized that by twenty-five past eight the ship would have slowed enough so that Don could be catching up to them. That is, if he had been separated from the ship at four o'clock. If it had been at three o'clock, the ship wouldn't be going slow enough till ten to nine — when Don would only have ten minutes of air left. Too close for comfort.

Without a word, he went over to help his father figure out the possible drift.

They finished by twenty past eight. The most Don could drift away from them was almost a hundred miles, but that was unlikely. It could easily be ten, though.

"He could start catching up to us anytime now, dad," said Ricky.

They went to the radar screen, turned it up to a range of a hundred miles, set it to point behind and to one side of the ship, then sat down to wait and worry.

It didn't occur to either of them that Don might have used his jet-pack. And they didn't know that it had been **after** four when he was separated from the ship.

The radar was aimed to where they expected he would soon be, but Don had already passed by, at eight-fifteen, having drifted miles to the side.

* * * * *

Don listened to the winds of space as he drifted. He no longer felt frightened, or even sad. He didn't really believe it. It hadn't really happened. It was just a dream, he thought. Any minute now he would wake up.

For hours he drifted, tumbling through space, watching the stars. His eyes picked out Sol. "That's where Earth is," he thought, "And I'll never see it again."

"Not much longer," he thought. He was once more beginning to get frightened, and tears were straining at his eyes. "I **won't** let myself be frightened. I **won't** let myself cry. I won't even **think** about it." He refused to even let himself look at the gauge to see how much time he had before his air gave out. He concentrated on identifying the stars and constellations.

"That's Pisces. There's Ursa Major. Capella. Sirius. Ursa Minor. Vega." He gritted his teeth as he looked at Vega, then his eyes moved on. "What's that one?" he puzzled, noticing a tiny, odd-colored point of light not far from Vega. He couldn't remember seeing that one before. His eyes widened. Could it be. . .

He watched it, not daring to believe. Slowly, ever so slowly, it seemed to be moving. "It is! It's the ship!" He shouted for joy, calling his family until he remembered his sounds didn't carry. Even if they did, it was still perhaps a thousand miles away. He made himself stay calm. He could wait. He glanced at his watch. Seven thirty. He hoped they would reach him in time.

The point of light slowly grew larger. Then he realized it wasn't coming directly toward him. It was going to go by, miles to the side. "They don't know I'm here," he whispered, unbelieving. Then he began to shout again.

Almost eight miles away, the ship was going past. Don looked at his watch. Eight-fifteen. "Look at me! Here I am!" he shouted, waving his arms. But he knew they hadn't seen him.

Desperately frantic, Don thought of the set of three air-tanks strapped to his back. Quickly, he unfastened one of them. "Will I have enough?" he wondered. He had remembered seeing a picture of an air-tank with its top knocked off, flying through the air like a torpedo.

He hung on tightly with his legs and one arm and carefully opened the valve. It worked! He could feel the lurch of motion! He aimed his 'torpedo' at the ship, which had started to get farther away again, and opened the valve as far as he dared. The forward lurch was so sudden he almost lost his grip! Glancing over his shoulder at the gauge, he saw he had cut his breathing time down from forty-five to thirty minutes. But at the speed he was gaining on the ship, that would be plenty, he thought.

His heart almost stopped when he felt the acceleration end. Quickly, he kicked away the empty tank and unhooked the second tank. He opened the valve and again sped toward the ship, now only three miles away. The distance closed. Two miles. One mile. A half mile. Four hundred yards.

Then the tank was empty. "Oh no! I can't use the other one! I won't be able to breathe!" He looked desperately at the gauge. Only . . . two minutes of air left! **"What'll I do?"** he screamed.

* * * * *

Inside the ship, the minutes were achingly slow. Mr. Scott and Ricky watched the screen carefully. "Dad!" Ricky exclaimed suddenly. "What if Don had used his jet-pack to try to catch us when he was separated! He could be miles away in the **other** direction by now!"

Mr. Scott looked up, surprised. His face went white. "If so, we'll **never** find him," he said. "I forgot about the jet-pack."

Ricky felt no joy that he was not the only one who could forget things. With the little bit of air Don would have now, if they continued waiting in the hope that he hadn't already passed them, then he was doomed if he **had** passed. But if they turned on the rockets to go ahead, on the other chance, then he was still doomed if he **hadn't** passed them.

Mr. Scott made a quick decision. "We'll go ahead. We'll just have to take the . . ."

Then both of them heard a bang. They froze. Something big had hit the ship. Then they heard what sounded like footsteps on the ship's skin — Don's footsteps! — and the airlock opening! Neither of them could believe their ears.

* * * * *

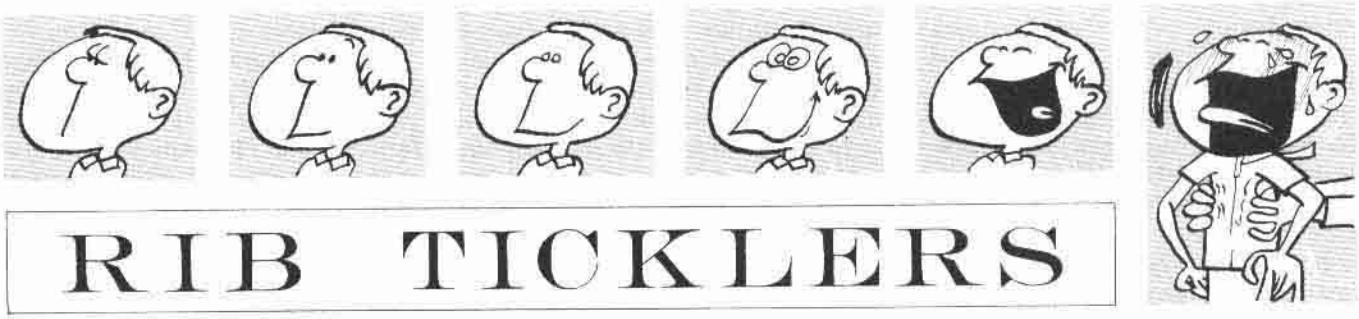
When the rejoicing was over, Don explained how he had used his air-tanks. ". . . Then when my second tank was empty, I thought I'd had it. But I didn't need any more! I **coasted** the rest of the way. And there wasn't a drop of air left to breathe when I reached the air-lock!"

"You should eat now, Don," said his mother. "You must be terribly hungry. In fact, none of us have eaten."

"I'm famished!" said Don, rubbing his stomach.

"Good," said his mother. "Those powdered turnips are still waiting."

"Oh no!" they all groaned together.



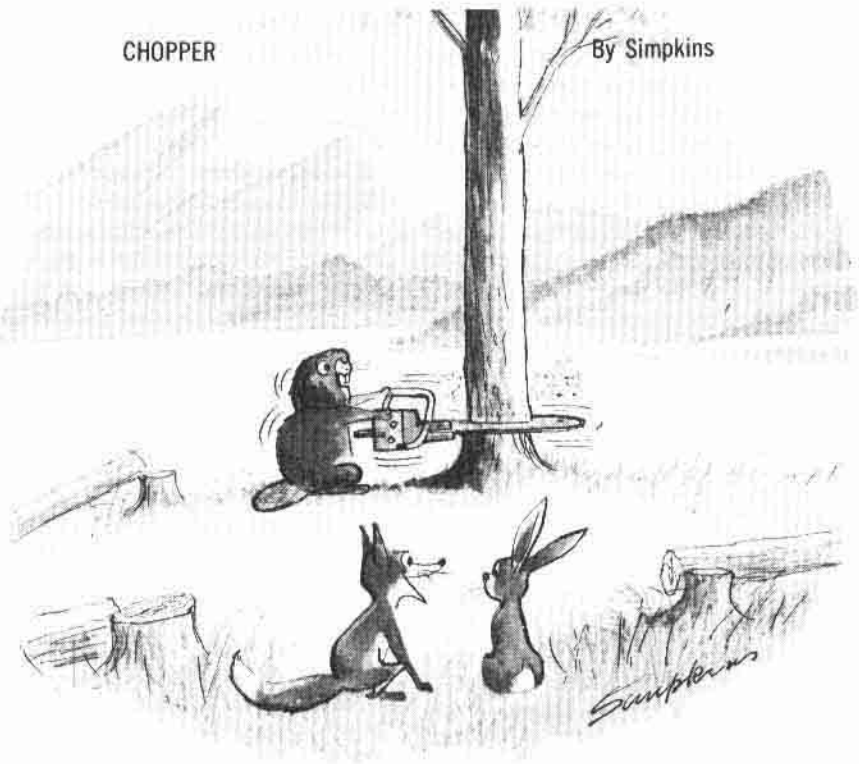
RIB TICKLERS

Jim: "My wife and I had a big fight last night and at the end she came to me crawling on her hands and knees."
Tim: "Oh, really. What did she say?"
Jim: "Come on out from under that bed, you coward."

John Luczak, Creighton Mine, Ont.

David: I lost my dog.
Peter: Why don't you put an ad in the paper?
David: That won't help. My dog can't read.

Walter Warkentin, St. Catharines, Ont.



"He got a chain saw so he wouldn't have to brush his teeth."

Husband: Is Halloween here so soon?
Wife: No dear.
Husband: Then your mother is standing by the front door.

Paul Sveinson, Winnipeg, Man.

A man walked into a clothing store. "And what can we do for you?" said the clerk.
"I'd like to try on that suit in the window," said the man.
"Well, sir," said the clerk, "we'd rather you'd use the dressing rooms."

Mark Stevens, Kenora, Ont.

One Cub to another: "The best way to make a fire with two sticks, is to be sure one of them is a match."

Bruce Joiner, Vancouver, B.C.

Q: What has 300 teeth and bites you?
A: A zipper.

Randy Bart, Windsor, Ont.

Bill: Name the 10 provinces of Canada.
Brian: I can't, they're already named.

Brian Richford, Prince Albert, Sask.

Doc: "You have acute appendicitis."
Patient: "Listen, Doc, I came here to be examined, not admired."

A. Stewart, Owen Sound, Ont.

Q: What did the balloon say to the pin?
A: "Hiya, buster!"

Kenneth Hine, Parksville, B.C.

SPORTS

A QUICK LOOK AT HOW TO FATTEN YOUR BATTING AVERAGE THIS BASEBALL SEASON

BATTING BEL

Coaches say the best defence is a good offence. And in baseball, most of the offence is summed up in one word — batting. To get on base and score those runs, you have to be able to hit the ball. To hit the ball in those clutch situations, you need to have everything just right — your stance, your concentration and your swing.

Here are a few tips to improve your average at the plate this spring, no matter what the situation. Swinging for the fences, bunting, or just concentrating on meeting the ball for a solid base hit, there are little things that will help you out.

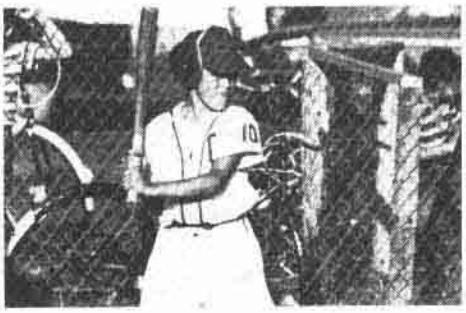
One more thing—a real necessity for good hitting is a certain amount of strength, especially in the hands, wrists and arms. Don't overlook this. To help you out, we have included some exercises designed to build up these parts of your body. Start on them now, keep at them, and watch it pay off this ball season in extra accuracy and power.

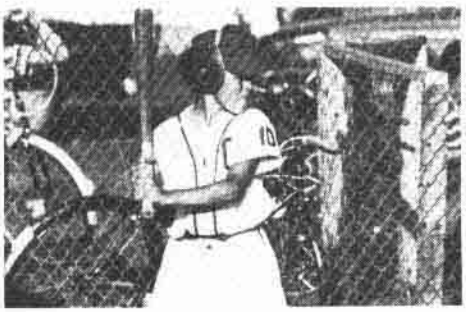
Batting for Accuracy

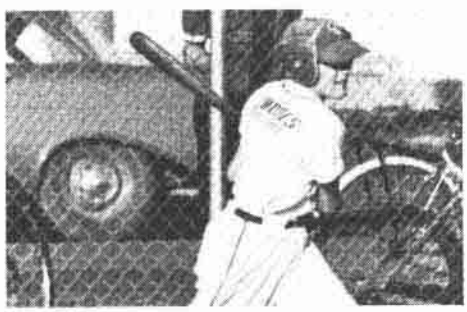
The first thing, of course, is the bat you use. Choose one that feels right to you. You should be able to give it a solid swing; but make certain it isn't so heavy it swings you.

Next, your stance. At first, use a parallel stance, with both feet about the same distance from the plate. This is the best basic stance to start from. Later on, you can try others if you feel they can improve your accuracy and power. Stand just far enough from the plate so that you can touch the outside corner with your bat by bending slightly. Spread your feet comfortably — not too far apart. Keep your arms away from your body, bent at the elbows, with the forearm of your bottom arm parallel to the ground. Keep the bat off your shoulder, and hold it well back in a 45-degree angle.

Your shoulders should be level, and the bat should be in a fairly high position. Remember, it's easier to drop the bat for a low pitch than to raise it for a high one. Another thing — don't wag your bat too much once you are ready to receive the pitch. Otherwise, you may find yourself out of position when the pitch comes.







Now, for the swing itself. Shift your weight to your rear foot. Your front foot reaches forward in a glide of no more than fourteen inches. At the same time, your hips, shoulders, arms and bat should swing back into a tightly coiled windup.

Then, as you start to swing the bat remember to keep your hands leading the other end of the bat. Your weight by now has transferred to your forward leg, which causes your rear heel to raise itself from the ground.

You should contact the ball squarely just in front of the plate, with your wrists snapping and rolling over. Continue your swing into your follow through. Your bat should still be in a flat swing, and your eyes should be on the ball.

Blasting for Distance

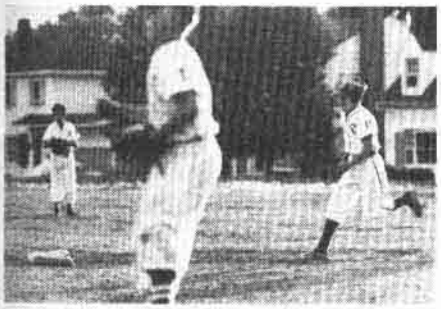
The rules for hitting the long ball are the same as rapping out a base hit. The same basic stance, same degree of concentration on the ball, and the same swing.

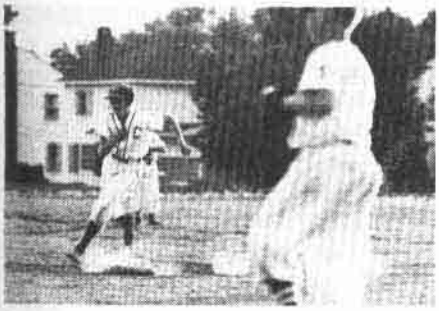
You may think you can't hit the long ball because you're not a big bruiser. But remember, neither are some of the most powerful hitters in the game. Willy Mays, Roger Maris, Stan Musial are all great home run hitters, and none of them are especially big.

The key to power hitting is coordination and strong wrist action. Another good thing to remember is to hold your bat right down at the end of the handle, with your hands together. This gives you that extra leverage for a powerhouse swing.

Watch the ball like a hawk watches a pigeon. You can be sure you are not

TING & BUNTING





swinging in proper form if you do not see the ball right up to the instant of impact and follow through. The old baseball rule "you can't hit what you can't see" also means "you can't hit what you're not looking at".

The level plane of the shoulders will help you get the level swing which is desirable. You will get more power by keeping the bat parallel to the ground through the course of your swing and will be easier to keep your eyes on the ball.

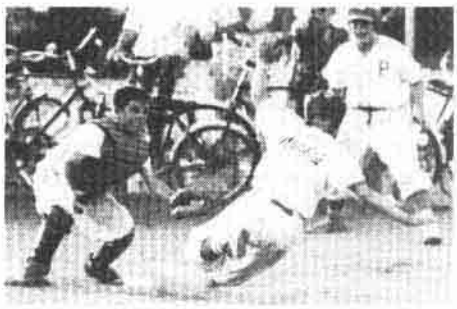
Keeping your eyes on the ball, not only helps you to hit, but also enables you to decide which pitch to swing at. The rules of the game force the pitcher to put the ball over the plate in a zone most favorable for you to meet the ball. Every time you swing at a bad pitch, you are foolishly giving up this advantage. Having a good eye for bad pitches is especially useful to a powerful hitter because, if the pitcher misses on the first two throws, it is pretty certain that he will be doing his best to get that third ball in there. Knowing this you can get set to give it a ride.

Bunting in Tight Spots

A bunt in the right spot can win a ball game just as well as a home run, so make it a part of your batting arsenal. The bunt starts from the same batting stance as ordinary batting does, but then it calls for entirely different skills.

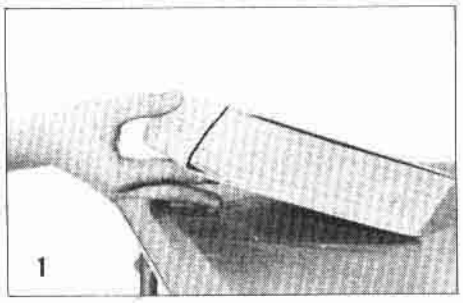
The sacrifice bunt is used to advance a runner already on base into a better scoring position. Just before the pitcher releases the ball, shift from your batting stance to your bunting position. Here's how.

Pivot on the ball of your rear foot, and swing to face the pitcher. At the same time, slide your upper hand up to the trade mark on the bat. Hold the bat loosely in both hands, keeping control through your fingertips. Bend over slightly from the waist, with your



STRENGTHEN THAT GRIP!

You need a strong grip to hit that ball the way you want to. Try some of these exercises to improve your strength. **1** Put a heavy book on top of your fingers, raise book as high as you can with your index finger alone. Keep back of hand off table. 20 times. **2** Roll up a newspaper lengthwise, pull it apart without tearing it sideways. **3** Chin a bar with one arm. Use other to help. **4** Take a newspaper sheet at the corner, crumple it into a ball. **5** Carry a rubber ball. Try to squeeze it 50 times a day. **6** Finger-tip pushups — and stay on your fingertips! **7** Grip bat in one hand, try to twist it out of grip with other. **8** "Walk" bat up through fingers. Start at big end, work bat upward.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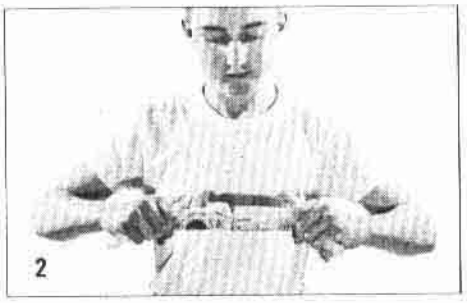
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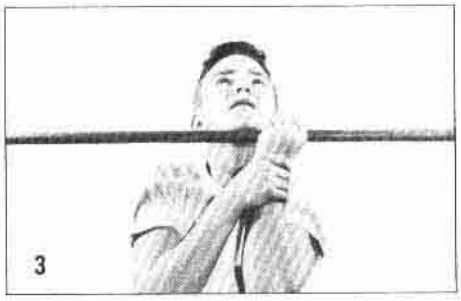
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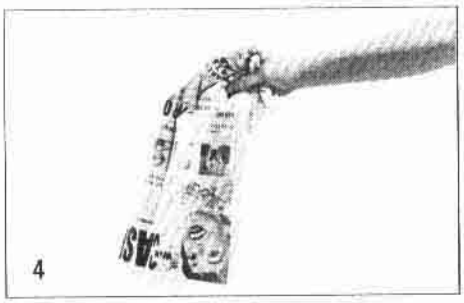
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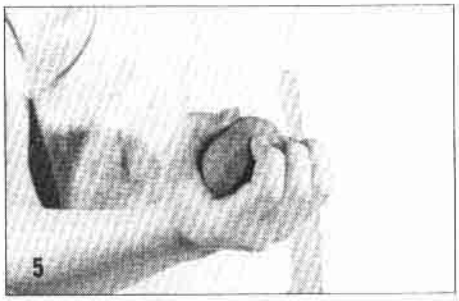
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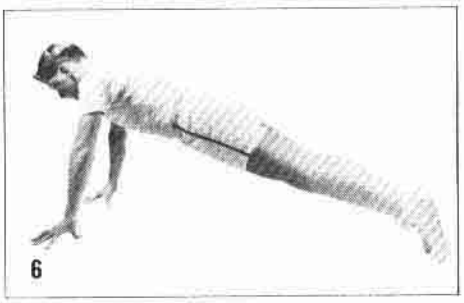
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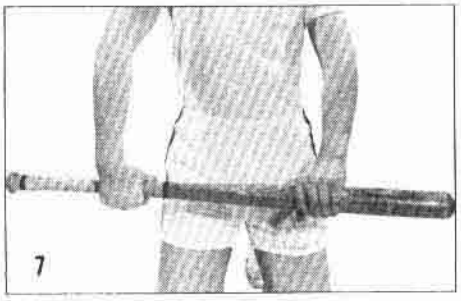
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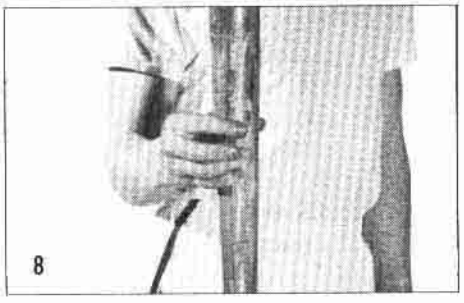
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knees slightly bent and your arms well out in front of your body. Keep the bat parallel to the ground, and hold it slightly below eye level.

For high or low pitches, your arms and body move up or down together. The direction of the bunt is determined by the hand at the handle end of the bat. Pull it back to send the ball down the baseline on your side of the plate, move it out to head the ball down the other baseline.

The key to the drag bunt is deception. Wait until the pitcher has just delivered the ball, then make your move. Thrust your bat in front of you, the same as in the sacrifice bunt, and move a half step toward first base. Try to push the ball between the pitcher and first base. Keep moving as you bunt. Although this is more difficult than the sacrifice, since you have less time and are also moving, if you do it correctly you should be able to beat it out to first.

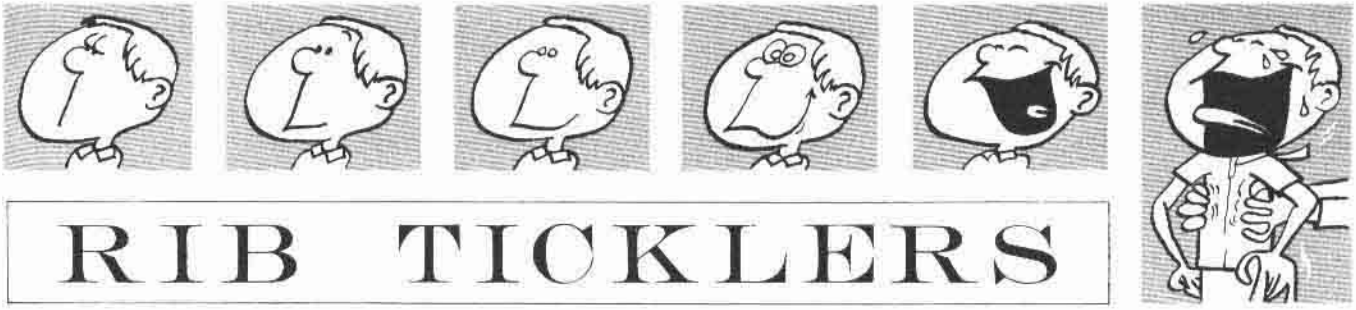
Here are a few ways to develop your timing and sharpen your eye!

Dry Run: Take your stance at the plate and imagine a pitcher throwing to you. Take swings at the imaginary ball while a friend checks on your stance, weight shift, wrist action and follow through.

Sitting Duck: Put a baseball in a strong, small sack and tie this to a ⅜″ piece of rope. Suspend the rope from a tree branch, or other projection which allows you to take a full swing. The ball should hang in front of you at about the belt buckle. Start the ball swinging and attempt to hit it as it comes past you. You can adjust the rope so that the ball will swing anywhere within the strike zone.

Buddy-up: Have a friend pitch to you while you hit. Use three or four balls and have a backstop so you won't waste time retrieving balls. Another buddy can field and return the balls to the pitcher. Change around every five minutes so that everyone gets a chance to bat.

The keys to all batting maneuvers are: the right stance, watching the ball, and the right swing. Practise and more practise is the way to achieve each one of these important skills. So, work at it and you might be surprised. You could end up the top batter in your league. Give it a try.



RIB TICKLERS

Doctor: Have you forgotten the $10 you owe me?
Patient: No, but give me time and I will.

Ian Brock, Montreal, Que.

She: What does a pipe cleaner look like?
He: A toothpick with long underwear.

Jimmy MacAleare, Holberg, B.C.

Wayne: "Today you're supposed to take little Melvin to the zoo."
Eddie: "Not me! If they want him they can come and get him."

Patricia Wawyn, Winnipeg, Man.

Q: What did the burglar give his wife for her birthday?
A: A stole.

Teddy Croll, Yorkton, Sask.

Vic: Pete, my wife dreams every night that she is married to a millionaire.
Pete: You're lucky, my wife dreams that when she goes shopping.

Roy Young, Edmonton, Alberta.

Sue: Dad, there was a man to see you today.
Dad: Did he have a bill?
Sue: No, just an ordinary nose like yours.

Billy Hall, Ottawa, Ont.

Tom: When does a woman never look in a mirror?
Bill: When she is backing out of a parking space.

Clark McKenzie, Calgary, Alberta.

Q: Who were the world's worst hill climbers?
A: Jack and Jill.

Michael McArdle, Pte. Aux Trembles, Que.

Q: Why is a snake smart?
Q: You can't pull its leg.

Diane Mogridge, Regina, Sask.

Teacher: Jimmy, your hands are very dirty. What would you say if I came to school with dirty hands?
Jimmy: I'd be too polite to mention it.

Jim Goodine, Camp Petawawa, Ont.

Cowpoke: "Hey! You're putting the saddle on backwards!"
Tenderfoot: "That's all you know about it, smarty. You don't even know which way I'm going."

Jimmy Brown, Winnipeg, Man.

A man who is born with a silver spoon in his mouth is very unlucky, most people have tongues.

Lorne Wald, Chomedy, Que.

Joann: Do you know what happened to the girl who fell into the glass-making machine?
Dana: No.
Joann: She made a spectacle of herself.

Colin Mackey, Stellarton, N.S.

Joe: I haven't spoken to my wife in three weeks.
Moe: Why not?
Joe: I don't like to interrupt.

Graham Young, Edmonton, Alta.

Q: What did the red light say to the green light?
A: I wonder where the yellow went.

John Crandall, Toronto, Ont.

Class President: "Congratulate me, Pop. I won the election."
Pop: "Honestly?"
President: "Oh, why bring that up?"

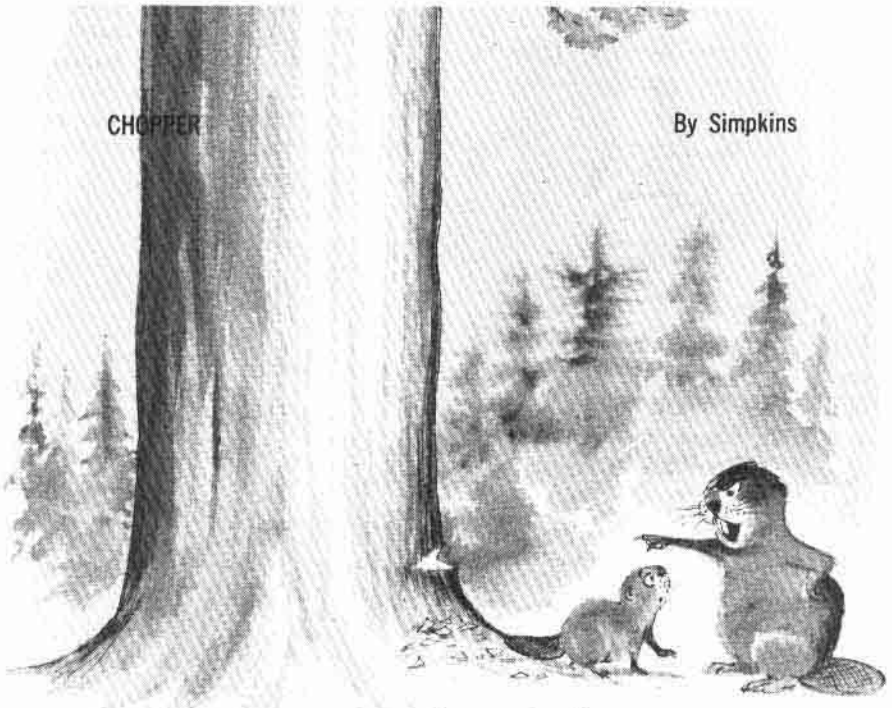
Brian Tobin, Dorion, Quebec.

Tommy: Can you stand on your head?
Bill: No. I can't step that high.

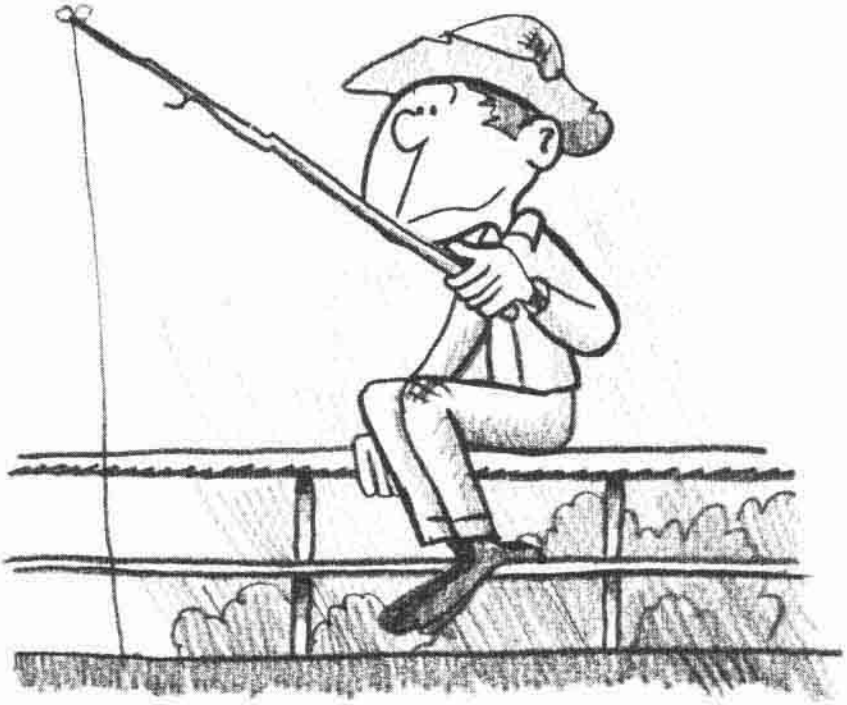
Arlo Grunerud, Milden, Sask.

Q: Can February March?
A: No, but April May.

Christine DeGagne, Exshaw, Alta.



"Nobody likes a quitter."



LET'S GO FISHING!

By Tom Campbell

If you believe that game fish are the only "respectable" fish to catch, and the only fish fit to eat, you are missing a lot of fun, and a lot of healthy outdoor recreation. A number of small fish like perch, suckers, rock fish, chub, mud cats, etc., can be caught in streams close to your house. They are always in season, easy to catch, and, except for suckers who go soft in

warmer weather, always good to eat.

Almost any rod and line combination will do, but an inexpensive spinning outfit is an excellent investment. Then if you graduate to bass and trout fishing later on, you will already be equipped. A light fiberglass spinning rod, an Italian type open-faced spinning reel, 100 yards of six-pound-test monofilament, a supply of hooks and a few small artificial lures, cost about ten dollars.

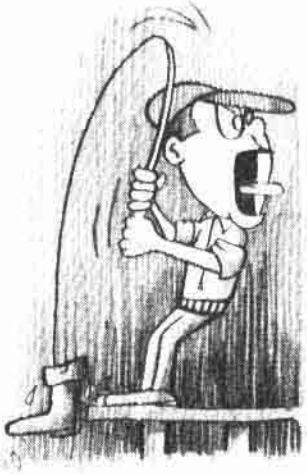
How about bait? Well, in spring, yellow perch will strike readily on either the common angleworm or minnows. With worms, generally, the bigger the better. However, for fish like suckers with small mouths, use small worms. Minnows can usually be purchased at or near the better-known fishing spots. You can dig the worms yourself. Or gather them at night with a flashlight on a lawn.

Where to go? A little local enquiry will usually lead you to a good spot.

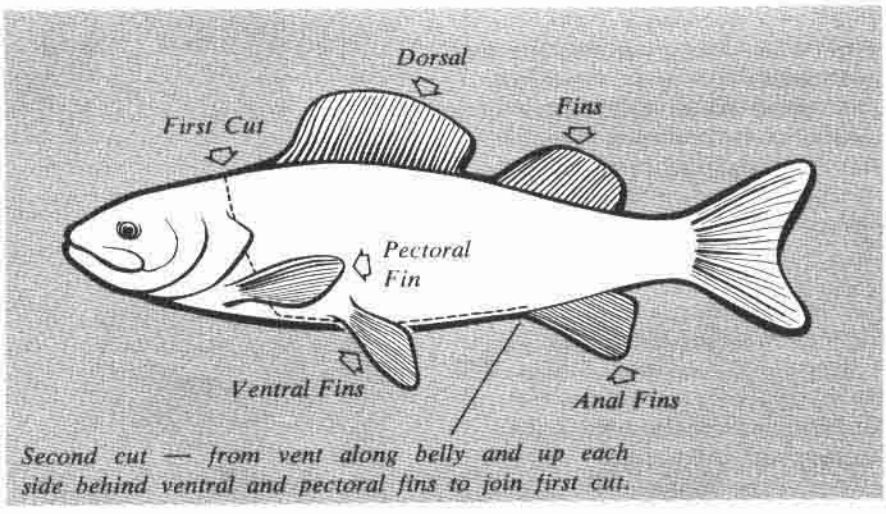
Most small fish prefer the quieter waters, sluggish streams, lakes and ponds, or the edge of moving water. They are seldom found in really fast water. In spring, they will be found in quite shallow water, close to shore, so it is not absolutely necessary to fish from a boat. A rowboat, however, is a great help in reaching the best fishing spots.

As fish tend to school, once you have located a spot at which they are biting freely, it is wise to remain there until the action drops off. "Where there's one, there's usually more" is a good rule to remember.

Fish close to shore, in water anywhere from four to twenty feet deep, with your bait close to bottom. If your line is slack, you will miss many fish. Look for comparatively quiet backwaters, where the current is not too strong, with moderate amounts of weeds and other vegetation among which the fish are likely to be feeding. Use a number four or number six hook, on which you have threaded an angleworm, so as to hide the hook. If you are using minnows for bait,



hook minnow in the back, just below and slightly behind the dorsal fin. Depending upon the strength of the current, you may or may not need some lead shot or other small lead sinker to take your bait near to the bottom



Second cut — from vent along belly and up each side behind ventral and pectoral fins to join first cut.

and keep it in approximately the same place. When you have located bottom, reel in enough to keep your bait a few inches above the bottom, and, as mentioned before, keep a taut line.

Fish will usually mouth the bait a few times, then attempt to swim away with it. A sharp jerk back on the rod at this point will set the hook. If

you are using a float or "bobber", you will see it dip a few times when the fish is mouthing the bait, then it will go entirely under water and move away at an angle when the fish starts to swim off. This is the time to set the hook. Without a float, you will soon know by experience the "feel" of a fish that has taken the bait, and will instinctively strike back and set the hook.

Let us assume that you have successfully hooked your fish, reeled in, and now you have him flopping about, either on the bank, or in the bottom of your boat. A little caution is required here, while you remove him from the hook. Spines in the fins can cause a painful wound if you grab a fish carelessly. Grasp the line in your right hand about six or eight inches above the fish. Then **slide** your left hand down over the fish's head towards the tail, compressing the back fins firmly against the body. Maintain a firm grip with your left hand, and use your right hand to work the hook free of the mouth.

I prefer to keep my fish on a "stringer", either of the simple nylon line type, or the more elaborate chain type with separate snap-fasteners for each fish, and keep them in the water until I am ready to clean and skin them. Yes, I said **skin** them.

Some fish have rather a thick skin, and large coarse scales, and scaling them can become a messy and long-drawn-out procedure. Skinning is not at all difficult, when done as part of the cleaning routine, and makes the fish much more pleasant to cook and eat. Your mother will probably be much more cooperative about cooking them for you if she is presented with a nicely cleaned and skinned string of fish.

HOW TO CLEAN A FISH. If you are cleaning the fish at home, make sure that you have plenty of old newspapers in which to wrap the heads and insides. A good-sized cutting board, and a slim, sharp knife, such as the Japanese fisherman's knife on sale in most tackle shops for less than a dollar, will simplify your job considerably.

First, make a cut immediately behind the head, down to, but **not** through, the backbone. Then turn the fish over and make an incision from the vent, right up the belly as far as the ventral fins. Try not to puncture

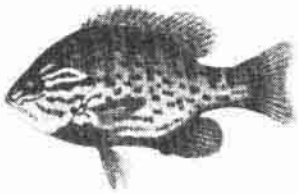
the intestines, just slit the belly skin. From the ventral fins, angle a cut up each side behind the pectoral fins, to join with the first cut which you made behind the head. A quick twist of the head now, and the head, intestines, ventral and pectoral fins should all come away in one piece.

Second, hold the fish under running water, and run the thumb along the backbone inside the belly cavity to thoroughly remove all dark-colored blood and the thin membrane which lines the interior cavity.

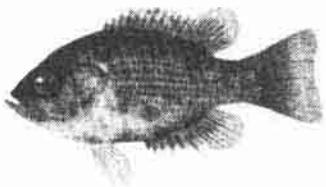
Third, with your sharp knife, start from the tail end of the dorsal fin, and remove the dorsal fin, along with a narrow strip of skin, right up to the head of the fish.

Remove tail and anal fin, again using your sharp knife. If you find that the anal fin has a sharp bone attached to it, remove it at this time. Your fish will now have skin left on two sides, separated by the thin slit you made when removing the dorsal fin. Grasp a corner of this skin at the top front end between your thumb and the blade of the knife, and peel the skin off right back towards the tail. Do this on both sides, and the fish will be completely skinned. The skin will peel off quite easily once you have it started.

Dredge the fish lightly with a mixture of flour, salt and pepper, and fry in a moderate amount of fat until lightly browned. They will be delicious, and the flesh will come away from the backbone and rib cage without trouble, leaving only the one piece of bone on your plate.

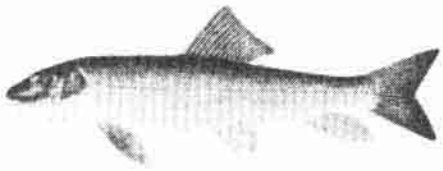


PUMPKINSEED (SUNFISH)

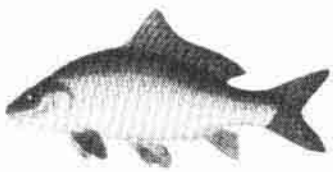


ROCK BASS

BROWN BULLHEAD (MUDCAT)



WHITE SUCKER



CARP

YELLOW PERCH

ice dive at seventeen

BY LORNE JOHNSON
AS TOLD TO FRED JOHNSON

IT WAS DARK DOWN THERE and the icy water against the bare skin of my face made a kind of achy chill go through my head. Looking up, I could see no hint of the five foot square hole in the ice through which we had entered the waters of Lake Simcoe. All was silent blackness except for the gurgling of the air coming out of my own and my buddy's air regulators.

As I slid down the weighted guide rope I strained my eyes through the darkness and could dimly see the yellow

stripes on the arms and legs of my buddy's wet suit. He was going down his guide rope only a few feet away from me.

My buddy was an experienced diver. This was my first ice dive. I wondered if he was thinking of our emergency safety rules, as I was.

"If my air supply fails," I thought, "I must immediately swim over to him and signal to start buddy breathing". If this happened, we would pass his mouthpiece back and forth so we could both breathe from his tank as we rose to the surface. There would be no room for fumbling the mouthpiece in the darkness. We would have to do this while being careful not to rise faster than the small bubbles we exhaled, otherwise we'd be liable to get the bends.

While I was thinking, my buddy suddenly swam over to me. "Holy smoke!" I thought, as I prepared to hand him my mouthpiece. "Will I have to save him?"

But he pointed to my depth gauge. He wasn't wearing one and wanted to know how far down we were. The luminous dial read seventy-five feet and he signalled to go up. I learned later his nose was bleeding.

But I was feeling fine and didn't want to surface until I had reached the full depth of ninety-five feet. So I decided to wait just under the surface to see if someone else would get in and be my buddy for a second try. It was very important that I didn't let my air regulator out of the water while I was waiting. Water might freeze in it and cut off my air. And I couldn't go down alone because it's a prime safety rule that scuba divers always work in pairs. This is called the buddy system.

I noticed that it was pretty dark even up close to the surface. What a frightening thing it would be to accidentally get off the guide rope and have to stay under that dark ice for someone to rescue you!

If this should happen, the diver rises to the surface and stays in one place against the ice. He doesn't try to find the hole, he waits. He is rescued by another diver who comes in on the end of a long rope with the other end anchored at the hole. This diver swims out from the hole until the rope is tight. Then he swims in a big circle, keeping the rope tight. Eventually the rope contacts the lost diver who swims back along it to the hole.

These thoughts were broken by the welcome sight of another pair of feet and fins entering the hole near me. I was getting another buddy.

Entering the water is the most unpleasant part of an ice dive. The diver has to wait for the cold water to penetrate between the foam rubber insulated wet suit and his body. Once it's there the skin heats it up and there's no particular discomfort. But for the first little while, as it rises inside the suit like mercury in a thermometer, it's a bit unpleasant.

It is sometimes hard to get down for the first few feet because of the buoyancy of the wet suit. After that it gets compressed a bit and the diver tends to sink rather than float. I wanted to overcome this buoyancy quickly so there would be no chance of my regulator rising above the water and becoming clogged. Being directly under the hole, I turned head down and gave two mighty kicks to get started. On the first kick my feet shot up through the water, spraying the chilly bystanders including my mother. She had some well chosen words for me when I finally surfaced.

This time my buddy and I made it to the concrete blocks at the bottom of our ropes. I could just barely see mine in the darkness. I knew the actual bottom was just four or five feet below that block. But I had no desire to take any chance of losing my guide rope by trying to touch it!

After the dive I found it was much colder in the air than it was under water. Somebody handed me a cup of hot soup and my hand shook so much I could hardly drink it. I wasted no time in getting into the heated change tent to put on my dry winter clothes.

I felt real good about the ice dive because it qualified me as an experienced scuba diver. At seventeen years old, I not only could take part in a very interesting sport, but I had a trade I could work at if I wanted to.

Last summer scuba diving was real fun when I dived with the Toronto Blue Fins club to a number of old shipwrecks. It was like going back into history to be able to prowl around the old hulks; some of them dating well back into the 1800's.

I wondered why there were no more members as young as me in the club. Later I learned that the good clubs are very cautious about letting teenagers join. It seems that a lot of younger fellows want to show off and take risks they shouldn't. Personally, I found there was too much to learn and too many interesting things to do to waste time cutting up. I was glad I did, because last summer we found a lot of interesting things. For instance, there was the one-hundred-year-old revolver with the bullets still in place that we found in one captain's cabin. I found an old bottle of wine that had been down so long the hand-blown bottle was actually frosted. The club has brought up ship's lanterns, anchors, tools and a lot of other things.

Most of the diving I have done has been at Tobermory at the tip of the Bruce Peninsula in Ontario. Dozens of ships sank in the clear rocky waters up there, in the days of sailing vessels and early steamboats. Imagine going down one-hundred feet for the first time and finding a sunken boat, three-hundred feet long. This one had been sunk for about sixty years and was still in relatively good condition. I saw it on my first deep dive!

how to become a scuba diver

MAYBE YOU'D LIKE to be a scuba diver. If you would, the first thing you must be able to do is swim well. Here are some beginning tests you must pass:

1 Swim 200 yards without swim aids.
2 Swim 10 yards underwater without swim aids.
3 Swim 50 yards with a ten pound iron or lead-weighted belt around the waist without swim aids.
4 Tread water for 5 minutes.
5 Tread water with the hands out of the water for 30 seconds.

An experienced diver must pass more difficult swimming tests, plus underwater safety and life saving tests.

The first training a beginning diver gets is in the use of the face mask, foot fins and snorkel. This teaches him that the air in the snorkel tube keeps most water from coming in when the open end is under water. And he keeps enough air in his lungs to blow out any water that does get in, after he surfaces. He learns how to equalize pressure under the water by moving his jaws or swallowing. Skill is gained in using the fins to best effect. The diver learns how to put on a mask under water and clear the water out of it by blowing air through the nose.

Perhaps the most important piece of equipment at this stage is the mask. It allows the diver to see clearly under water, while without it he's almost blind.

The mask covers both the nose and eyes so that if water gets into it, it can be cleared. With the nose inside the mask, pressure inside is automatically equalized to the outside water and the air pressure being breathed. At one-hundred feet down, air must be supplied to the diver at about sixty pounds pressure per square inch to equal the water pressure.

When you consider the pressure problem you can see why goggles can't be worn. These have a pocket of air at surface pressure trapped inside them. When air pressure being breathed is sixty p.s.i., it will force the eyes out of their sockets into the low pressure space in the goggles.

Scuba training should start with a healthy respect for the 2,000 to 2,500 pounds pressure in the air tank. Scuba, by the way, means Self Contained Underwater Breathing Apparatus. . . .

If the valve on the tank is accidentally broken off, the escaping air can make it behave like a deadly rocket. In one case on record, a tank jetted through a cylinder charging room wall, flew through the air for three city blocks, ploughed a hole in a front lawn and went through the side of a house before it came to rest.

When these cylinders are carried anywhere, they are securely tied to prevent damage to the valve.

The regulator is the second vital piece of equipment needed. This has the breathing mouthpiece at one end and a special valve at the other end which attaches to the tank. The regulator valve controls the pressure, fed to the diver, to be equal to that of the surrounding water. With the mouthpiece in the mouth, the diver breathes without trouble. His outgoing breath is discharged into the water.

If the mouthpiece of the regulator is taken out under water for buddy breathing or other purposes, it doesn't release air. A gentle suction by the diver is needed to make it flow. But to avoid getting a mouthful of water it is necessary to breath into it before taking air out. Here, experience in surfacing with a snorkel is needed.

Here are some of the tests you must pass before you can take pleasure dives with a club like the Blue Fins.

1. Two divers without face masks must buddy breathe for 10 minutes, using one tank and regulator, without surfacing.

2. Place five tanks and regulators at the deep end of a swimming pool, spaced as far apart as possible. Swim under-

water from one to the other without wearing a face mask and without surfacing, taking air from each.

3. Stay under water with scuba for half an hour without surfacing, while under attack. The instructors swim around and try to put you in difficulties by turning off your air valve. You must be able to turn it on yourself. They also take off your mask and foot fins and pull out your mouthpiece. You must be able to find and put on everything they take away from you.

This training prepares you to meet any emergency that may come up in a real dive.

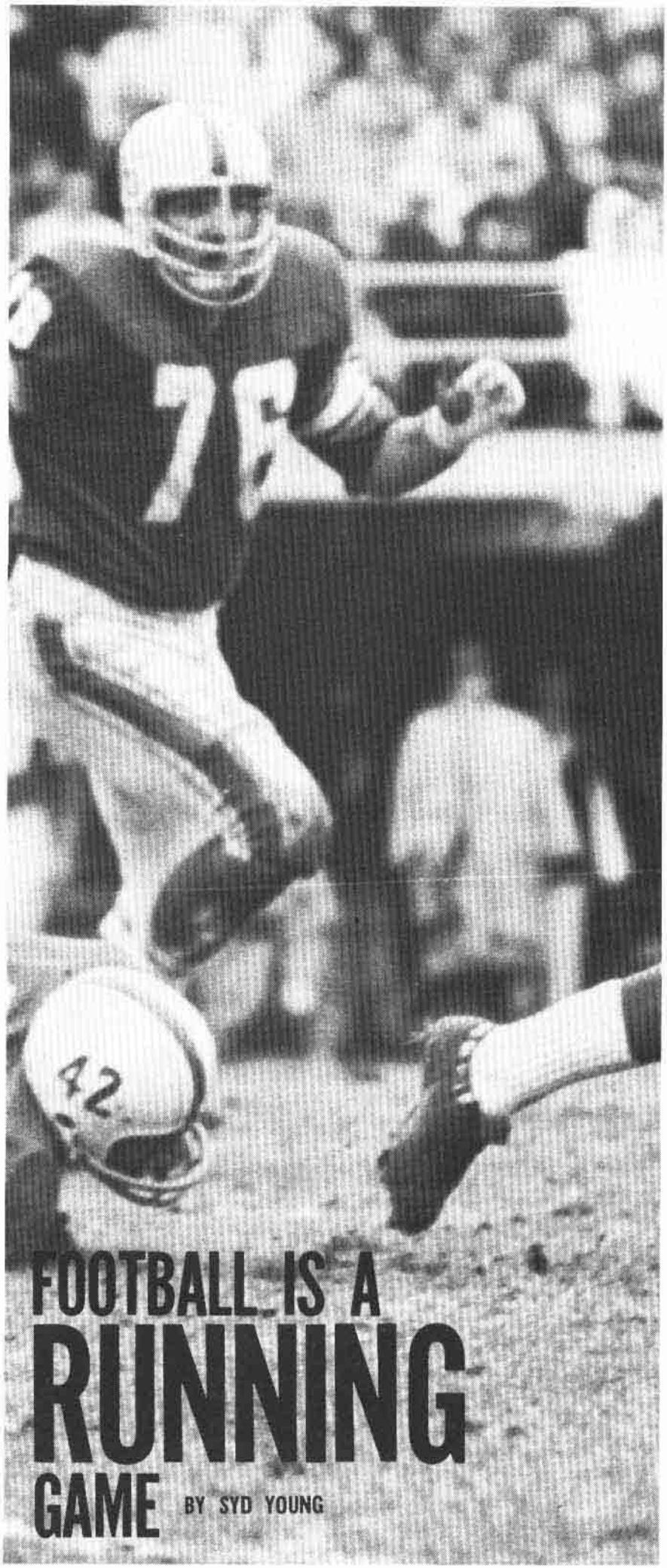
After the swimming tank training you're ready to take dives in open water with an experienced buddy. While the water on the surface may be warm, once you pass the thermal barrier about twenty feet down, it gets just about as cold as in an ice dive. For my first deep dives (over fifty feet) I bought a wet suit for $65. This was made to fit me skin tight. I used the same fins and mask as I had for snorkelling. The snorkel is used too for inspecting the bottom while swimming on the surface. This saves compressed air. I rented a tank and regulator.

Later I got "hooked" by the hobby and saved enough money to buy a tank and regulator. This cost about $170. Altogether the basic equipment costs about $300. This doesn't include extras like a diving knife, pressure gauge, underwater watch and a self-inflating life preserver. These can run the cost

well above $400. Cheaper equipment can be bought but it doesn't pay, I think, to risk your life using junk.

Some day I may take up scuba diving as a profession. If I can qualify as an instructor there are a lot of wonderful jobs in tropical tourist resorts. They hire instructors to teach their guests.

Then there's commercial diving like working on foundations of bridges and piers, salvaging underwater wrecks; and repairing boats and underwater equipment like the gates of canal locks. Divers working on small jobs by the hour get paid about $15 an hour. On bigger jobs they can get anything from $30 to $250 a day. The high pay is for very skilled and dangerous work like placing underwater explosive charges. The lowest pay is given to helper-buddies, like I would be at the start.



FOOTBALL IS A RUNNING GAME

BY SYD YOUNG

Most of the great runners of Canadian football are "naturals". Fabulous broken-field runners like Willy Fleming, Leo Lewis, Don Clark, Jackie Parker and others are only doing "what comes naturally" when they leave opponents strewn all over the field on their dazzling touchdown runs.

Runners like these seem to have a sixth sense which tells them when to change direction, change pace, cut, or pivot away from tacklers. They do amazing running tricks that cannot be taught by a coach, since they are something that a player is born with.

Something you may not have realized, though, is that all of us are born with a certain amount of this sixth sense. And while you aren't all Flemings or Lewises, you can develop your running ability by means of practice to the point where you can be a pretty darn good football player. Remember—your natural talent will lie dormant unless it is brought out by repeated practice with the help of a good coach.

Football is basically a game of quickness, agility and mobility, and most of the top ball carriers are men of speed. Football running requires a good 100 yard sprinter, not a half miler or a miler. That is why football players spend a great deal of time practicing short sprints at top speed.

When you have to get some place on the football field during a game, the faster you get there, the better you can accomplish your purpose — to knock down a pass, tackle a runner, evade an onrushing tackler, or cut down a defensive opponent. Once you are launched on serious football practice your slogan should become "sprint."

THE ART OF EVASION

Ball carriers should learn to start moving quickly, like a sky rocket, and run with knees high, head up, and weight forward and low. Between sticks, tie a number of lines at eye level and another set of lines about six or eight inches above the ground. Run this course at top speed. You will learn to keep low and well balanced and to keep your leg action high.

Car tires or boxes placed close together could help you train for broken-field running. Learn to run this course while stepping into each tire, keeping your head up. At first, lay the tires out in a straight line so that you can learn to run straight. Then you can add a few new features. Arrange the tires so that you learn to cross-step. Place a series of markers along the course so that you can learn to shift the football from one hand to the other in order to keep it on the side away from potential tacklers. The shift is made opposite each marker in the course.

From the early sessions, backfield runners must practice the "stiff arm". This is a technique which will often enable you to get past the tacklers, especially if he is not thoroughly aggressive. A stiff arm is usually combined

with a pivot step to aid in the evasive manoeuvre.

To execute the stiff arm, strike out with your hand at arm's length and try to force the tackler to run into the hand of your outstretched arm. Try to nail him somewhere on the head or shoulders. He will usually be moving toward you and your stiff arm should knock him off balance.

When executed with a cross step to the right, in which your left leg crosses over to your right, this heel-of-the-hand contact with a jab or a short arm shiver will often enable you to keep the tackler off. If the tackler ducks down under your stiff arm in making his charge, bring your hand down harder on his shoulder or back and push him into the ground while you vault or swing your legs clear of his clutching arms. Occasionally, an unthinking tackler will make a grab for your extended arm. If he is that foolish, simply pull it away and keep right on going.

The change of pace is a manoeuvre designed to trick tacklers into slowing up, or misjudging your rate of speed. Ronnie Stewart of the Ottawa Rough Riders is an exponent of this manoeuvre. Sometimes the change of pace will make them try to intercept you at an angle which is impossible once you pour on your real speed; other times it may enable you to combine it with the pivot or cross step for very good results.

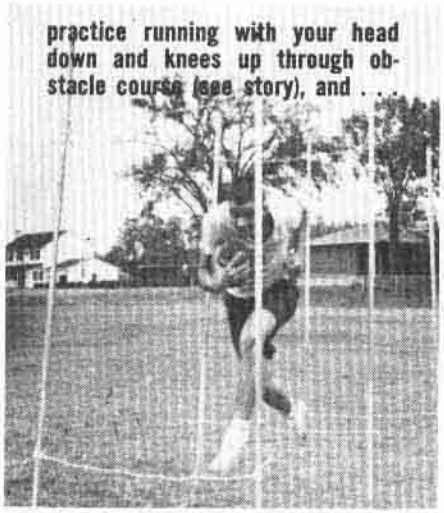
SOME TRICKS TO TRY

As you approach the point on which you and the would-be tackler will meet, run a little slower than your best speed. Two paces before you meet, burst into your top speed and try to run right past him. If you are very fast you can often get away with this trick.

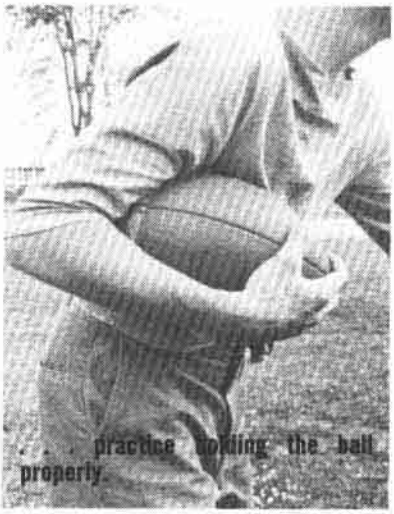
An adaptation of this is used when you are approaching a tackler who is dead ahead of you. You must run over him or veer off to give him an angle shot at you. Your best bet here is to get him to stop dead by feinting quickly, first to the left, then to the right, while you continue running straight towards him. He will very likely plant himself and wait to see which way you will cut. This is just what you want. Keep running straight at him until you are within a few steps, or, until he begins a forward run preparatory to his tackling lunge. Then you cut sharply at an angle toward one of the side lines. Since you already have a running start and he is starting from a standstill you should be several yards ahead of him on your race towards the side line, which is enough of a margin of safety to enable you to cut back straight down field again without being overhauled.

Your stiff arm will often be a valuable aid in completing the job which your change of pace starts. You should certainly learn combinations of all your evasive manoeuvres after you have made them part of your natural running game. The pivot is an especially

Winnipeg's great Leo Lewis (29) shows proper running form and ball holding in sweep around end . . .

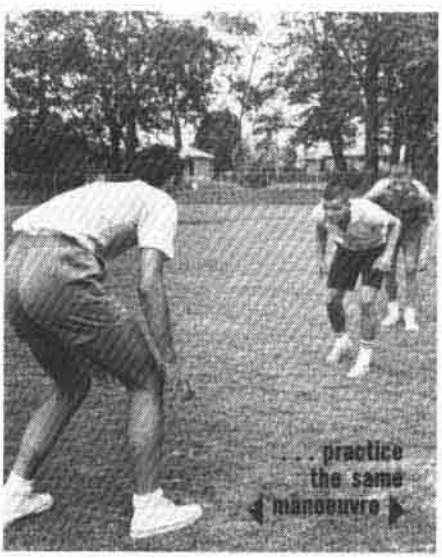


practice running with your head down and knees up through obstacle course (see story), and . . .



. . . practice holding the ball properly.

Ottawa's Ron Stewart veers to the left to let his blocker take out number 17 . . .



. . . practice the same manoeuvre

valuable manoeuvre for a back who has just burst through the line. Straightarm the man who is coming up to plug the hole, turn sharply on your inside foot and run in a new direction; make your spin and run with short, high steps, keeping low to avoid injury in case you run into a new man coming in from the outside to get you.

A pivot may also be made with your shoulder establishing contact. If you hit the line and find solid resistance, drive a few hard, choppy steps with legs well spread. Then pivot on the outside foot, using the resistance as a lever, and try to go around it. Always practice these manoeuvres with a football under your arm.

The hip fade, the limp leg, and similar dodging techniques are based on the principle of offering the tackler a target which you withdraw after he has committed himself by lunging at it. Sometimes a violent wrench of your hips away from the tackler will get you completely out of his reach. If your opponent tackles you loosely, or with an arm tackle, you can often break loose by driving hard with knee action to break his grasp. Always drive extra hard when you are hit. This is the moment in which it is still possible for you to break away. At the very least, you can gain those extra yards that may mean first down.

USING YOUR INTERFERENCE

A ball carrier must remember that he has eleven other fellows on his side. His teammates will be carrying out their blocking assignments to help his journey down field, but with some help from him their jobs will be much easier and he can run for longer gains. When you are carrying the ball, learn to use your interference properly by feinting potential tacklers into a position where your blockers can best handle them.

One of the best bits of broken-field running ever seen was done by Ron Stewart of the Ottawa Rough Riders in a game against the Montreal Alouettes at Molson Stadium in 1960.

Stewart broke through time and time again and set a new Canadian rushing record. In many instances, five or six Montreal players had a shot at him but Stewart side-stepped, pivoted, straight armed, bulled through opponents, feinted and used every device in the repertoire of a skilled broken-field runner.

But more important, he knew how to utilize the help of his team-mates. He wove back and forth setting up blocks for his mates time and time again. He used his change of pace to enable his own blockers to catch up, and always he was moving forward. There was no unnecessary dancing and dodging. Even when he ran laterally across the field, he was keeping the running angle on the tacklers, forcing them to run to a point ahead of him. Always before they got to this interception point, Stewart managed to manoeuvre

one of his blockers between himself and the would-be tackler. When that was impossible he got past on his own swivel-hipped shiftiness and speed.

RUNNING DRILLS AND GAMES

Young ball carriers can learn much from running like this. If a tackler is approaching you from the right and your nearest blocker is on your left, cut to your left so that the blocker can get a good angle on the opponent. When the tackler is coming straight towards you and you spot one of your mates away off to the side, cut sharply towards that sideline, drawing the tackler along with you to where your man can get a crack at him.

Stay behind your interference as long as it is needed, but put on your best burst of speed and run away from it when there are no more opponents in front of you. Let your blockers protect you from behind and from the side in such instances. Occasionally, you'll have one blocker in front of you and an enemy attacker approaching from dead ahead. It is easier for your blocker to make an angle block rather than a straight away one, which might even pile you up with the entangled men. Try to keep in directly back of your man until you are ready to cut, then show your opponent one of your shoulders to make him think you are going to cut over in that direction. Simultaneously, in a low voice you may be able to call your interferer indicating the direction in which you will make your cut—always the direction opposite to the shoulder which you have shown the tackler. Now, the tackler will be drawn over far enough for your man to get a good blocking angle on him while you will go around them, shielded completely by your blocker's body.

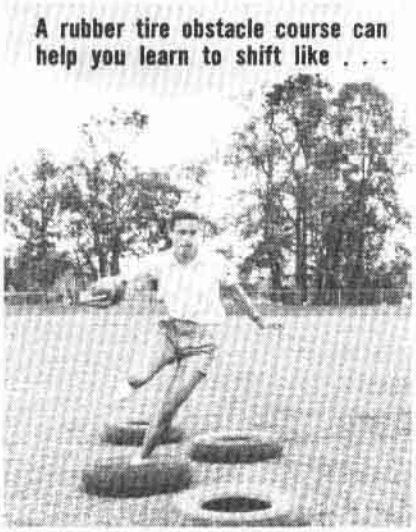
The set of boxes or tires is basic equipment for practicing broken-field running. A charging sled or blocking dummy is used for practicing the stiff arm in combinations of evasive pivots, and cross steps. If you have no charging sled available to you, it is possible to get some practice with a heavy hanging dummy which you stiff arm as you cut away. A friend may steady it for you.

Touch football will give you some good broken-field running practice without exposing you to the battering that a similar amount of "live bait" tackling might bring.

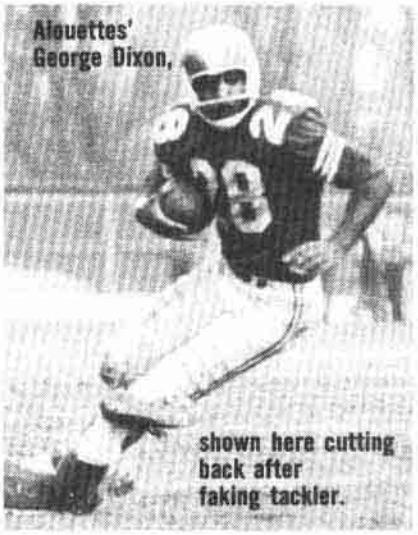
The worthwhile game for your own back yard is to set sheets of newspaper all along a course laid out in the yard and sprint at top speed around this course without touching any of the papers. If the day is windy you can get some dodging practice trying to keep from touching any of the shifting papers.

PROTECT THE PIGSKIN

Always carry a football in practicing your broken-field running techniques. Learn to carry it properly and practice with it until

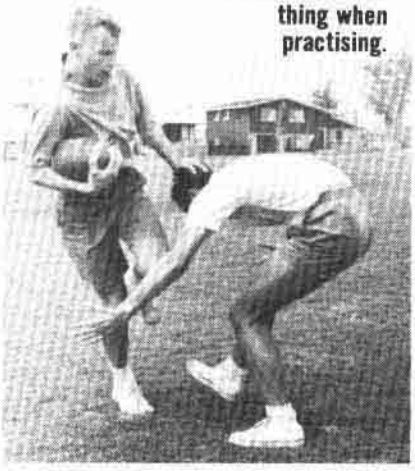


A rubber tire obstacle course can help you learn to shift like . . .

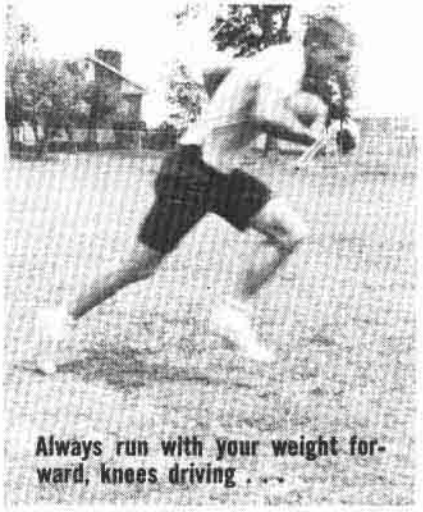


Alouettes' George Dixon, shown here cutting back after faking tackler.

Ron Lancaster demonstrates correct straight-arm techniques . . .



. . . do the same thing when practising.



Always run with your weight forward, knees driving . . .

carrying it correctly becomes as automatic as breathing. Plant it firmly under your arm, away from the tackler. Carry the ball with one point firmly held by the spread fingers and the other point in the armpit or high up under and against the arm. Use both hands to hold ball when hit.

On smashes through the line, hold the ball against your body with the tips pointing towards your elbows. The right hand is spread over the tip which is near the first elbow and the left hand covers the point nearer the right elbow. The forearm covers and protects the length of the ball. If you break into the clear you can shift it then to the one-arm grip under either arm. You'll find that through practice and observation of star players in action you can develop your running game immensely.

Canadata

OUR BEAVER IS A VERY GOOD WEATHER FORECASTER...

NATURALISTS HAVE SEEN THEM WORK FURIOUSLY TO PATCH UP A DAM JUST AN HOUR BEFORE A VERY HEAVY RAINSTORM STRUCK...

DAYS BEFORE, THE BEAVERS HAD IGNORED THE WEAK SPOTS, BUT, WHEN A STORM WAS SENSED, THEY GOT TO WORK QUICKLY!

MORE DUCKS ARE KILLED BY LEAD POISONING THAN ARE SHOT... LEAD PELLETS FROM HUNTERS SHELLS SINK TO LAKE BOTTOMS WHERE THEY ARE PICKED UP BY THE DUCKS.

VERNON MILLER

THE WHITE MAN CONTRIBUTED THE MACHINED TOOLS OF CIVILIZATION TO THE ESKIMO IN THE ARCTIC BATTLE AGAINST FROST .... THEY FROZE UP AND SO THE ESKIMO HAS GONE BACK TO HIS CENTURIES-OLD BOW AND DRILL.

POLAR BEARS

HAVE BEEN SEEN FROM PASSING SHIPS, SWIMMING MORE THAN 42 MILES FROM LAND OR ICE.

GENERAL

TRAIN YOUR DOG THE MOUNTIE WAY

"HEEL"—The aim of this command is to have the dog walk at your left side with his right shoulder opposite your left knee. Try walking your dog on leash, beside a fence or wall, giving the command "heel". Use the leash as a control and pull him back smartly if he runs out, repeating the command. When the dog gets used to walking beside you, make right and left turns and repeat the command as often as necessary. Soon he will associate the action with the sound. Praise him immediately if the action is correct. Practice leaving a slack leash, except for actual correction. This will prepare your dog to "heel" without a leash.

"SIT"—The dog should sit straight beside you each time you stop. Try walking at the "heel" position and suddenly stop. At the same time repeat the command "sit" and pull up on the leash. If the dog doesn't sit, press firmly on his hindquarters while pulling upward with the leash. This will force the dog to sit while you repeat the command and praise him.

"DOWN"—Starting from the "sit" position, give the command "down", pulling forward and down on the leash. You may have to push down on the shoulders or pull the two front legs forward into the "down" position. Repeat the command for short periods each day. A hand signal command may also be used, by sweeping forward the extended hand, accompanied by verbal command. With practise, a dog will respond to this signal at a considerable distance.

SLOWLY and cautiously, Springer was lowered down the black length of the shaft, into the heart of the abandoned coal mine. The old wooden platform creaked and swayed as he descended, then stopped with a jerk at the entrance to the main tunnel. All around him was darkness and silence, broken only by the occasional dripping of moisture from the clammy, crumbling walls. Springer hesitated—erect and alert. The rescue team stood waiting behind him. Without further delay, Springer fearlessly started out, the rescue team following. His progress was swift at first, and he was undaunted by the large network of tunnels which constantly crisscrossed and backtracked over his route. Suddenly he stopped. One of the side tunnels had captured his attention, and he entered it. Then it was not long before he found the three boys who were huddled together against the wall, completely lost, and badly frightened. Springer had been successful once again! And why not? Springer was a Police Service Dog!

Now, you may ask, "What is a Police Service Dog?" Well, that is a good question, and quite easy to answer. Of course, once you know the answer you will probably take a new look at your own dog and say "We can do that, too!" Now, back to answer your question.

A Police Service Dog is a full-fledged member of the Royal Canadian Mounted Police Force. To become a member he must be a German Shepherd dog, with a heavy fur coat and good intelligence. He is trained at a special school in Sydney, Nova Scotia, where he will be kept in reserve and ready for action.

Each dog has one master, to whom he is loyal and obedient at all times. He and his master work as a team, at key points across Canada and they are always ready, night and day, to answer calls for assistance. Anything from locating lost persons, lost or stolen articles, illegal possessions, to guarding prisoners or trailing criminals.

One dog answered the last kind of call in the following way:

Butch was a large and handsome dog, well-known for his strength and agility. When the report came in that three dangerous prisoners had escaped from a Manitoba jail, he was immediately taken to the spot where they were last seen. Running loose, sniffing the air and the ground, he soon picked up a trail which led him for about a half a mile near to some abandoned buildings. Suddenly the escapees were sighted hiding in the shadows. Upon seeing the dog, they quickly split up and ran in different directions. Butch had the good sense to pursue just one of these men whom he brought to a stop and held, until his master arrived. The other two men, in the meantime, had slipped back into prison property and were captured.

Butch was the hero of the day!

You and your dog can be a happy, efficient team, too, if you follow a few simple rules. These rules can be remembered easily from the letters of the word TEAM.

T *stands for Training.*
E *stands for Effort.*
A *stands for Animal.*
M *stands for Master.*

Let's begin with Training.
The first thing to learn is voice control. Three main tones can be used.
1) The ordinary but sharp and definite "command" voice, for orders.
2) The soft, slightly higher voice for praise.
3) The lower, louder and harsher voice for scolding.

"UP"—Give the command "up" while pulling up on the leash from "down" position, so that the dog reaches "sit" position. If he is slow, a tap on the forepaws will make him withdraw his feet and assume "sit" position. Praise and repetition at this point is a good idea. Hand signals can again be used by an upsweep of the extended arm, bringing the dog to "sit" position.

"COME"—Your dog should come to you and sit in front of you on this command. If he is slow, or tries to move away, a long training line may be used. As the dog runs, he will hit the end of the line. Repeat the command "come" and at the same time pull the line towards you to bring the dog to "sit" position. With repetition the line becomes unnecessary.

"STOP" or "STAY"—The next step means that the dog must stop in a desired spot and stay there until told to move. Place your dog in the "down" position and repeat the command "stay". Then walk around him, near him, and even step over him. During this time the dog is praised and the word "stay" repeated. Gradually, move farther away, still talking and praising the dog. As he learns the meaning of the command, walk away a few times and call him to "come".

Train Your Dog

After the dog understands the "stay" command, call him from a distance. When he reaches halfway, command him to "stay" and hold your right arm straight up with the palm of the hand forward. He should immediately stop and wait for another command. If he does not, try the following: Drive low pegs into the ground, and attach a long line from a peg to the dog. Walk far away from the dog and call him to "come". As he approaches, give the command "stay", with the hand signal. If he doesn't stop, the line will jerk him to a stop. Repeat exercise daily, until the line is no longer needed, except for periodical corrections.

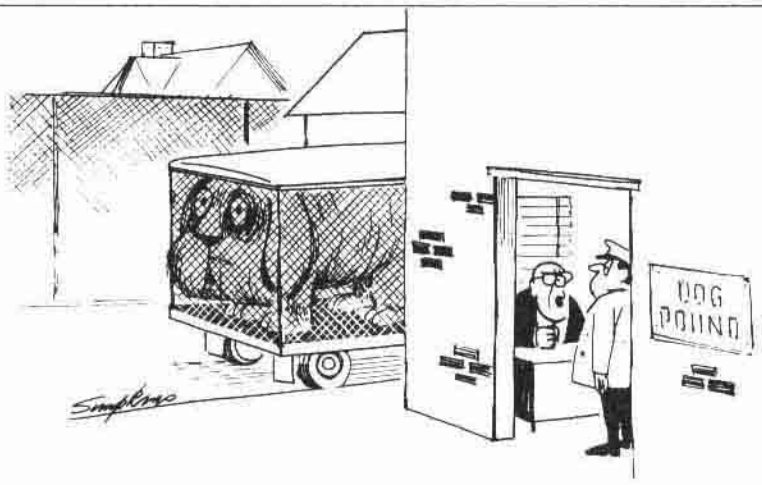
Sometimes you should alternate this exercise by having the dog come directly without the "stay" command. Otherwise, the dog may come only halfway, where he expects to be stopped.

E for Effort is what creates the team. If you make a real effort to treat your dog fairly, give him plenty of exercise, praise and encouragement, he will respond to you as a devoted and loyal friend. You must be patient and understanding, and must begin slowly in order to gain the dog's confidence. Each command must be definite and have a purpose. Some dogs become sloppy if commands are not used properly. It is not good training to dismiss a dog before he completes an action required by a command. It is much better to give no command at all, than to allow the dog to disobey or only partly perform the action required.

A for Animal tells his side of the story. Usually, training begins when a pup is between six and 14 months old. Every dog has a different personality and can only be trained at the speed he can learn. Although a dog does not understand words, certain sounds remind him of certain actions. Once he learns the different tones, and their results, little force will be required. If punishment appears to be needed, it should be given at once. This allows the dog to link the punishment with the action. Punishment should be given only as a correction and praise should be given only when commands are obeyed properly.

M stands for Master and means YOU. You are the most important part of the team, especially in your dog's eyes! After a dog has been working on obedience for a few days, he may try to run away or return to the kennel, perhaps even growl or bite. This is the breaking point with most dogs and proper handling is extremely important. You, as the trainer, must win, because after this the dog will either accept you as master completely, or ignore you altogether. You must be firm.

Since the beginning of the Police Service Dog section of the RCMP, many people have been grateful to the dogs for finding lost or missing persons and the dogs have proved to all of us what a worthwhile service they are doing for Canada. By now you can see what makes up the team, and how you yourself can make it. You will find that your dog is an eager and devoted partner — good luck!



"You mean to tell me Jones, you've been out all day and brought back only one dog?"

HOW TO MAKE SPOT

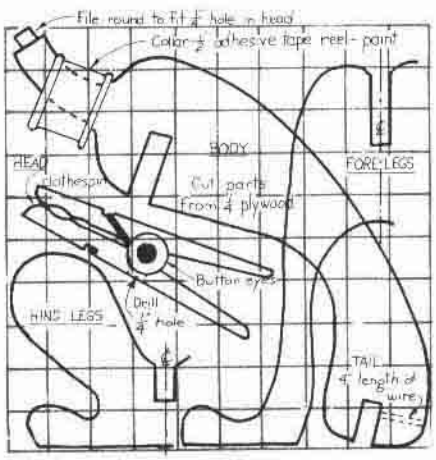
the Post Office Pooch

Here's a pooch that needs no looking after. Yet he'll hold Mom's and Dad's letters so they'll never get lost. He's made of ¼" plywood with a spring clothespin for a head, button eyes and a wire tail. The core of a ½" adhesive tape reel makes a good collar.

Using the patterns shown, trace onto a piece of ¼" plywood by drawing a grid similar to the one below. However, make the squares of the grid ½-in. square instead of the size shown. Then cut out the pieces with a coping saw.

On these patterns, we've shown only half of the fore and hind legs. To make the legs for the other side, all you need to do is reverse the pattern. The body and legs notch together, so remember to make the joints a snug fit. It's important.

Now he's assembled. Paint Spot any dog color you like — we make ours black with white spots.



The World's Biggest Explosion

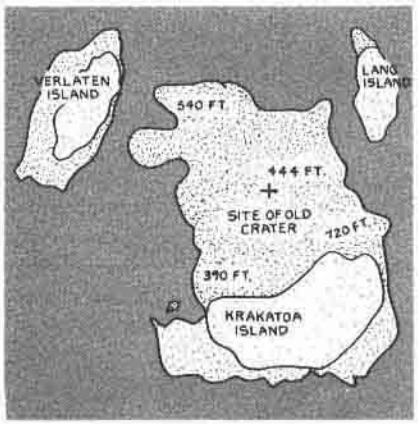
BY MARY TAYLOR

Not daring to sleep, they stayed awake all night, listening for what was to come

The greatest single explosion generated by the military might of the United States and the Soviet Union sounded like the pop of a toy pistol compared to nature's biggest blast. In 1883 an explosion ripped apart the East Indies Island of Krakatoa and shot volcanic debris fifty miles into the sky. The noise of this biggest boom was heard 3,000 miles away, across the Indian Ocean on Rodriguez Island.

History records no radioactive fallout but it does record an ash fallout as far away as Asia and Africa. The waves in the sea caused by this explosion were recorded 8,000 miles away. For over a year afterward dust filled the high atmosphere over most of our planet, resulting in sunrises and sunsets of unusual beauty all over the world.

Krakatoa was part of a volcanic structure built up from the bottom of Sundra Strait between Java and Sumatra. The original volcano was more than 2,600 feet high. In some unrecorded time it was reduced to a crater eight miles in diameter and a few hundred feet above sea level. Later activity built up a number of cones in and around the crater, and three of these merged to form the island of Krakatoa.



In 1680 an eruption dropped the crater below sea level. The new cones and the next highest part of the rim formed an island group, of which Krakatoa was the largest. They lay dormant for two centuries before a series of earthquakes indicated that Krakatoa and its neighbors were awakening from their 200-year-long nap.

Then, in the spring of 1883, came the ominous rumblings that were to terminate in the biggest explosion on earth. Lava overflowed in a river to cut a path through the jungle. But the Dutch authorities saw little cause for alarm; volcanos were common in the area.

By the following August Krakatoa's rumblings were continuing without let-up and the straits between the islands were covered with a layer of cinders a foot thick. In Buitenzorg, 61 miles distant, the residents prepared for the thunderstorm they felt sure was imminent. Then, in the afternoon of August 26th, sharp explosions interrupted the rumbling. *Now* nearby residents had reason for terror, for the noise drowned out every other sound. Not daring to sleep, they stayed awake all night, listening for what was to come.

Shortly before seven on the morning of the 27th there was a tremendous explosion. A few minutes later it was followed by a second of equal violence. Then, for the first time in weeks, there was silence. Krakatoa had ceased to exist.

To those within one hundred miles the noise was deafening. To persons over a thousand miles away it sounded like artillery fire. The air waves resulting from the blast were felt around the world, over western cities such as London and Berlin, for a period of thirteen days.

The human death toll in this disaster was over 36,000. The town of Anjer, on the west coast of Java, was completely wiped out by a tidal wave over one hundred feet high. On the coast of Sumatra, the warship *Beroun* was swept inland by the force of the water and deposited in the jungle two miles from the sea. The wave was still over a foot high when it reached Capetown, 1500 miles away. Rounding the Cape of Good Hope, it finally spent itself in the North Atlantic.

Two of the three cones of Krakatoa were blown to bits and the third split vertically. Parts of the island that had stood as much as 2600 feet high were now submerged beneath water from 900 to 1,000 feet deep. Some of the neighboring islands were enlarged by deposits of the disgorged volcanic material; others sank below sea level, and some were completely destroyed.

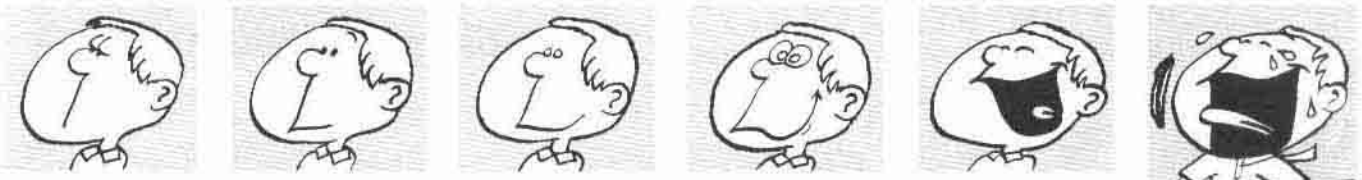
William J. Cromie, scientist, traveller and oceanographer, believes that the extreme violence of the explosion may have been caused by the sudden inrush of sea water through the side fissures. This could have produced an enormous amount of superheated steam, expanding in all directions, which created the force that tore the island apart.

On the other hand, says Cromie, the water may have been chilled, causing it to form a solid plug in the mouth of the crater. This would not have stopped the volcanic activity, but it could have confined the steam and gases below it. When the pressure built up to a point where the plug could no longer hold it down, Krakatoa was blown apart in the world's biggest explosion.

Left a lifeless rock, Krakatoa was re-populated again within a few

months. Beetles, butterflies and birds came by air. Worms, snails, insects and reptiles arrived by sea. Plants were brought as seeds by birds to reforest the knoll. By the late 1920s the island was again a tropical jungle with all the plant and animal species typical of such a region. Such a chance to study a new "world" being populated might never occur again. The Dutch authorities proclaimed it a nature reserve and it became a closed territory to all but accredited scientists. The biologists recorded every species and studied them in relation to their environment and to each other. They even discovered several new sub-species of birds and butterflies that were unknown elsewhere. Krakatoa, the destroyer of life, was creating life of its own!

But the giant that startled the world is not dead. In 1928 a submarine cone broke the surface, and a geyser, spouting steam and ashes, was born in a portion of the ancient crater. So far the casualties have been confined to minor life forms and fish. But if Krakatoa does decide to go on a rampage again who can tell what latent forces it might release? Who can predict what further catastrophe might occur that would dwarf any explosion ever created by man?



RIB TICKLERS

Paw: "Maw, get the shovel quick."
Maw: "What in heaven sakes for?"
Paw: "Junior is stuck in the mud up to his shoe laces."
Maw: "Why doesn't he just walk out?"
Paw: Stop arguing, he went in head first."

Rennie Kermath, Elora, Ont.

Pat: What should I wear with green and purple socks, dad?
Pop: Hip boots.

Neil Bradshaw, Halifax, N.S.

Lady: "Doctor, when I get well, will I be able to play the piano?"
Doctor: "Of course."
Lady: "That's marvellous. I never played before."

Eugene Jarrell, Kingston, Ont.

Tim: Why did the little shoe leave home?
Jim: I don't know.
Tim: He found out his father was a sneaker and his mother was a loafer.

John Thompson, Cooksville, Ont.

Ned: Do you know I lit my cigar with a twenty dollar bill?
Ted: How extravagant!
Ned: Not really, it was a bill from the dentist.

Philip Smith, Lennoxville, Que.

Phil: They toasted our mayor at the banquet last night.
Jack: Really, was he badly burned?

Chris O'Neil, Windsor, Ont.

Q: What is covered with salt and has a twisted mind?
A: A thinking pretzel.

George Klima, Victoria, B.C.

Lady: Can you give me a room and a bath?
Clerk: I can give you a room but you'll have to take the bath yourself.

Wayne Lee, Ottawa, Ont.

Mother moth had scolded baby moth and baby moth started to cry. "Moths do not cry," said mother. "Oh yes they do," said baby, "haven't you ever seen a moth-ball?"

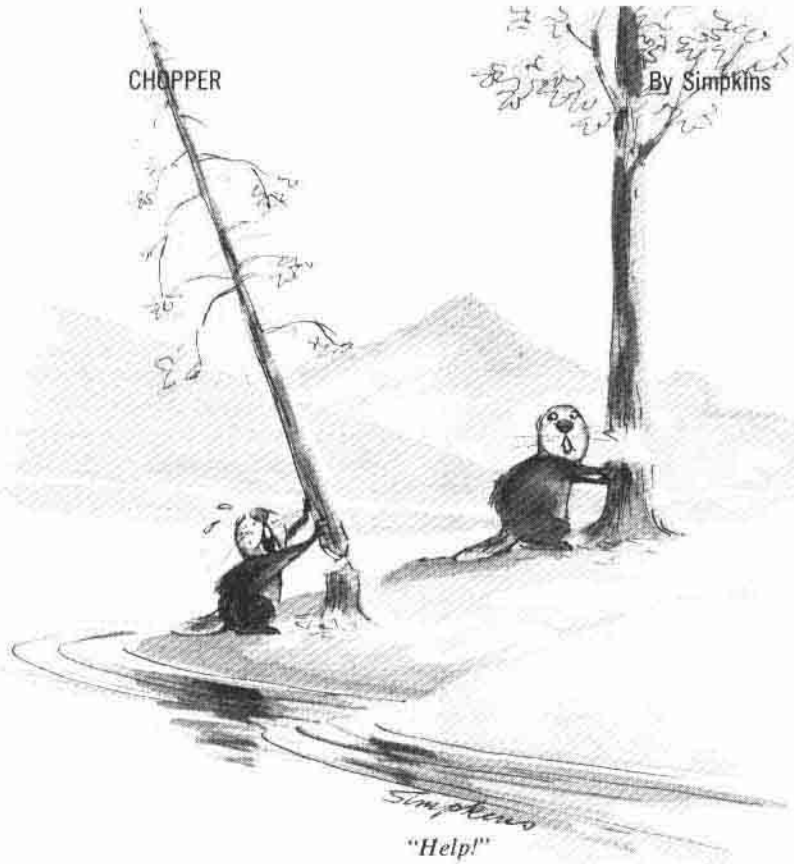
Arthur Rottenbiller, Medicine Hat, Alta.

Tom: What did the grasshopper say when he hit the window of a speeding car?
Terry: I don't know, what?
Tom: If I had the guts I'd try it again.

Jerry Meagher, Winnipeg, Man.

Joe: Won't your wife hit the ceiling when you get home tonight?
Bill: She probably will, she's a poor shot.

Gary Wood, Mindemoya, Ont.



"Help!"

table-top general

People of all ages, from four to ninety-four, are starting collections of lead soldiers. They're not toys, but a serious business.

BY HAROLD MORRISON

"Wait a minute! Lead soldiers are toys! My kid brother plays with them!" But you're wrong. They're a big-time business now. Canadian boys — and men — are making the collecting, home-manufacturing and converting of model soldiers one of the fastest growing hobbies in the country today. You might even end up making money from it. Lead soldiers often increase in value with age. Or, if you get really good at making your own soldiers, or converting them, you could sell them. Especially good ones can bring two dollars apiece.

For about 35 cents each, you can buy models of the Fort Henry Guard, the Princess Patricia's Light Infantry, Governor General's Horse Guards and the Royal Canadian Mounted Police. One manufacturer has even issued a series of Second World War Canadian soldiers with individual biographies, telling the story of the real soldier they are supposed to represent.

If you have patience, and are good with your hands, you can make your own soldiers and create ones which no manufacturer has issued. Another way is to "convert" soldiers. Here is an example of a minor conversion:

There are no Fort Henry Guards in "firing" positions. You take the head of a Fort Henry Guard who was standing at attention. You cut off the head of a British Grenadier Guard, standing, firing. Then you solder or use epoxy glue to fix the Fort Henry head on to the former Grenadier body. That's a simple conversion. Expert converters can change a cowboy into a trooper of the Lord Strathcona Horse.

Unlike model racing cars speeding over the same track again and again, there are many things which can be done with your soldiers. You can set up a model depicting anything from a battle scene to a parade square. You can play "war games" with your

Table Top General

soldiers, and if you think this is kid stuff, you might be interested in knowing that many famous battles of history were fought by generals who learned their tactics at the table top. Frederick the Great of Prussia, who lived from 1712 to 1786, perfected war games that way, and incidentally, helped father the modern "toy" soldier of today.

A battle scene could be an interesting project for a history class, and if you sit down with your platoons of soldiers and an "enemy" general and work out sets of rules for the different periods of times and weapons, you will find yourself not just playing with toys, but engaging in a battle of wits and skill with your opponent. Chess, for example, is a refined war game.

As for being a "boy's" hobby, some never give up their soldiers. Sir Winston Churchill, one of the greatest men of our time, was a collector. The Ontario Model Soldier Society includes a rear-admiral of the Royal Canadian Navy, artists, lawyers and doctors among its membership. One member of the society, Gordon Dumbleton, recently put more than 3,000 soldiers on display at Casa Loma in Toronto. He is an officer in the Royal Canadian Signal Corps reserve and is a veteran of the Second World War.

Sizes of soldiers vary. Most collectors favor the standard 2¼-inch high (54 mm) soldiers, but others are available in 6 cm, 20 and 30 mm and even in 00 and HO scales.

Proof that lead soldiers are a serious hobby is that soldiers are dying out in the toy counters, but are being carried on by professional craftsmen and custom - manufacturers. Several years ago lead soldiers could be purchased for five cents. These models could easily be repainted or converted. Today, only one British company has maintained a full line of lead soldiers (mainly because of demand from North America). The company is Britain's, whose founder, William Britain, pioneered in "hollow cast" lead soldiers late in the 19th century.

Still, the new plastic, or more correctly polyethylene soldiers are exciting. Instead of being all one piece, many have moveable heads, arms, kit, and rifles and can be twisted into many positions. They can do anything except run.

Most collections centre on Napoleonic times, the American Revolution, U. S. Civil War and the Victorian era. Samuel Jackson of Niagara Falls is sustaining interest in distinctive Canadian soldiers by manufacturing his own. Since his work is all hand crafted, his figures are $2 each, but indications are that other manufacturers are taking notice of special Canadian demands.

To date, though, most Canadian companies produce crude one-color polyethylene soldiers which they call "Canadian Army" soldiers, but which are not true to life. Distinctive Canadian soldiers come from England, South Africa and Hong Kong.

There are many interesting sidelights to the production of soldiers. After the Second World War, Germans were forbidden by Allied laws to produce toy soldiers. Times have changed. West Germany now shares a substantial part in European defence and German manufacturers now produce distinctive German soldiers and receive stiff competition from British companies which manufacture Afrika Korps, Waffen Storm Troopers, and other German army units from the Second World War.

To complete collections of lead and plastic soldiers, many plastic model manufacturers sell lines of artillery, tanks and trucks. A Japanese manufacturer for example, has produced a scale model of a German tank-killer, the "Hunting Panther" which can be operated by remote control and even fire shells.

HOW TO MAKE YOUR OWN SOLDIERS

Take a figure you have made or converted yourself, or an existing model, and cover it with at least 20 coats of heat-resistant latex or neoprene compound, obtainable from a hobby store. Allow an opening either at the head or base, into which lead can be poured. Figures standing at attention are easily cast in one piece, but action figures are better cut separately. If you were going to have a man charging, it would be best to cast the body, arms, and rifle separately. Allow for air escapes in your mold which let the lead flow freely into all parts of the mold.

Have a form into which you are going to pour plaster of paris. Mix water with plaster of paris, then half fill the form. Set latex-coated model half into the wet plaster of paris. Let dry. Rub vaseline or oil over the dried plaster of paris half-mold. Fill form with plaster of paris. Let dry.

By using a knife edge, you can split the two halves of the mold apart. Remove latex coated soldier.

Carefully slice through the latex mold material, preferably on the side of the soldier. Make the cut from head to toe so that the mold can be peeled off like a banana skin. Cure the latex mold.

Put the latex mold into the plaster halves. Bind with rubber bands.

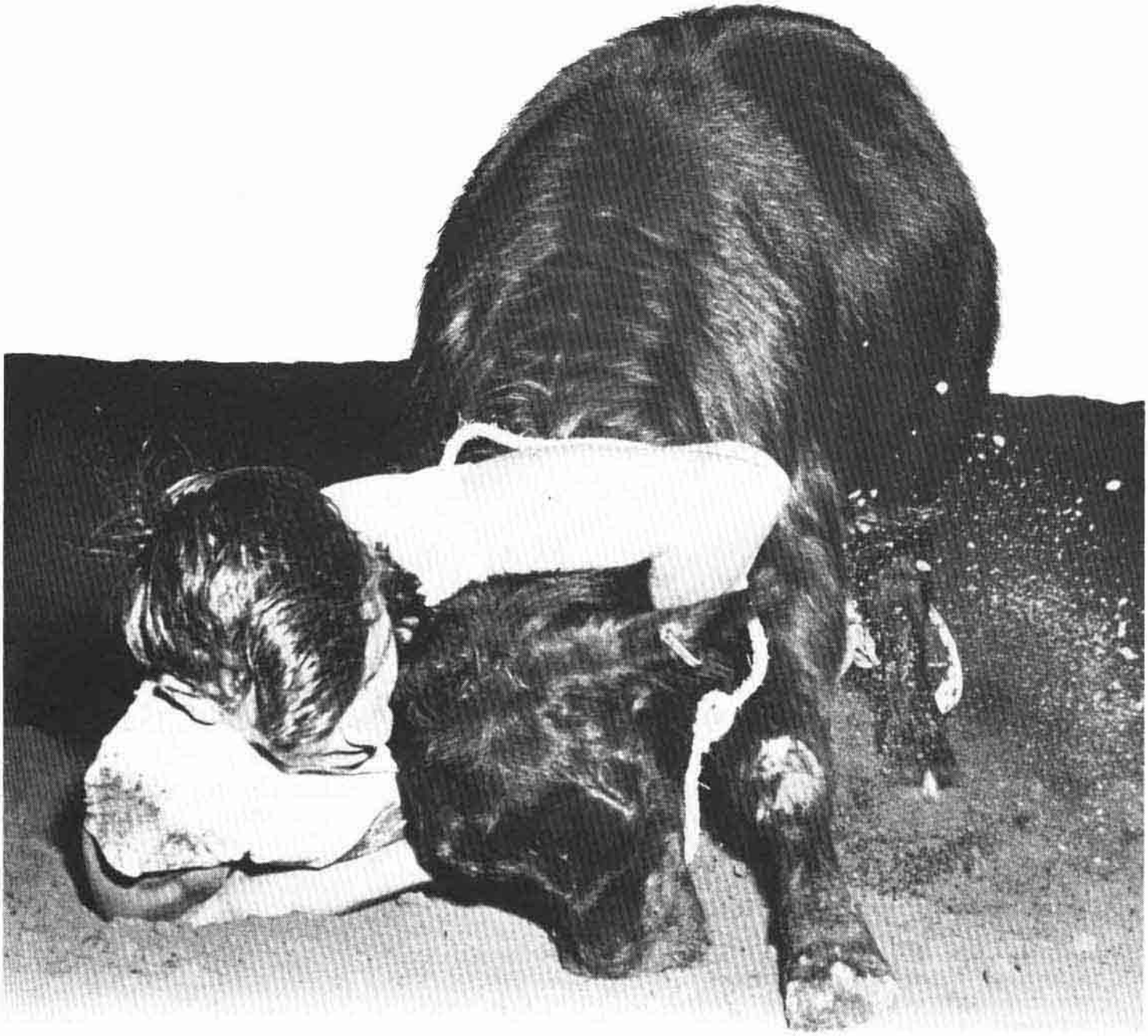
Pour molten lead into the core opening. Allow a few minutes to cool.

Remove and file away excess lead. Use solder or epoxy glue to join figure to component parts. Give base coat of paint, then paint the soldier.

Plain plaster of paris molds can be made, but these allow for only an extremely limited number of poses. Plaster molds, however, are useful for making special accessories such as rifles or even heads.

WARNING: Do not pour molten lead into a new plaster of paris mold. Let it dry for a few hours, otherwise the lead will bubble and spray when it contacts wet plaster of paris.

BY ALICE MULVEY



How to scramble a calf

"Go!", yells an official, and 21 boys dressed in white shirts and jeans take off after 10 Aberdeen calves eighty feet away at the other end of the arena. The crowd yells and cheers and another Junior Farmer's Calf Scramble is on at London's Western Fair.

The calves are fresh from the pastures and have never been handled before! The boys must catch them, halter, and lead, pull or drag them to the finish line.

One boy may bring down his black adversary and halter it in quick fashion only to have it escape. Then he has to go back to the sidelines and wait for another chance. Another boy may wrestle with a 300 pounder for 10 minutes before he gets it over the finish line.

Some boys tackle as many as three different calves. They have plenty of battle scars before they get their calf roped and hauled to the finish line.

The earth churns and the dust flies, boys and calves go down fighting, each determined to outdo each other. The crowd screams and yells encouragement. When the battle is over 21-mud-splattered and battle-scarred boys stand limp over 10 panting, roped steers.

Each boy who successfully gets a calf is given a $100 certificate. With it he must purchase an Aberdeen Angus calf and show it at the fair the following year. The eleven losers are each given a consolation prize.

Horses of History

How they helped shape the real (and mythological) past.

BY LOUISE PLUMB

Man's taming of the horse, long before he could record the event, was one of the great turning points in history. At first the horse was merely a beast of burden. Later, with the invention of the wheel, he was harnessed to a chariot. Finally, Man conceived the idea of riding a horse.

Stories of famous horses have come down through the centuries, beginning with the mythology of ancient Greece. The Greeks worshipped their ideal as Pegasus, the winged white horse of the gods. Pegasus sometimes descended to earth where a blow of his hoof could create a fresh-water spring, but only once did a mortal ride him. The gods took pity on Bellerophon, a handsome young prince who was unjustly accused of treachery and sentenced to fight the Chimera, a fire-breathing monster. This was virtually a death sentence. However, astride Pegasus, Bellerophon slew the Chimera with a sword and arrows. Afterwards, the winged horse again ascended into the heavens where he is still seen as a constellation of stars.

According to Homer's Iliad, Xanthus and Balios, the chariot horses of Achilles, were as swift and immortal as their sire, the West Wind. During one engagement of the Trojan War, Achilles loaned his chariot and steeds to his good friend, Patroclus, and Patroclus fell in the battle, mortally wounded by Hector. When Achilles rebuked the horses, the goddess Juno was so moved by their plight that she granted speech to Xanthus. Xanthus not only explained that he and Balios were powerless to prevent Patroclus' death, but he foretold the death of Achilles himself. In spite of this knowledge, Achilles plunged into battle and killed Hector before he himself was slain by Paris.

Alexander the Great (356-323 B.C.), conqueror of the Persian Empire, tried to pattern his life after the mythical Achilles and he, too, was fortunate in possessing a devoted horse. Bucephalus, meaning ox-head, was first purchased for Alexander's father, but the horse bucked so fiercely that nobody could mount him —until Alexander, then 12, realized that Bucephalus was merely frightened of his own shadow. During the next 20 years, Bucephalus bore his master victoriously across Asia Minor to the Hindi Kush. There, in a battle against an Indian king, the horse was mortally wounded with a spear in the neck, but still managed to carry Alexander clear of the enemy cavalry before falling. Alexander buried Bucephalus in an alabaster-and-gold tomb and founded a city, Bucephala, in his memory.

One horse in the Roman Empire was accorded even greater honors by the Emperor Caligula (12-41 A.D.). Although an unbelievably cruel tyrant, Caligula was fond of horses, especially Incitatus, his favorite. Yet he was a poor rider. One day, while out riding, Caligula's courtiers flattered him extravagantly on his fine horsemanship. Incitatus reared up and unseated the emperor. In tribute to Incitatus' honesty as well as his intelligence, Caligula made the horse a

Roman citizen, then a senator and only the emperor's assassination kept Incitatus from becoming a consul.

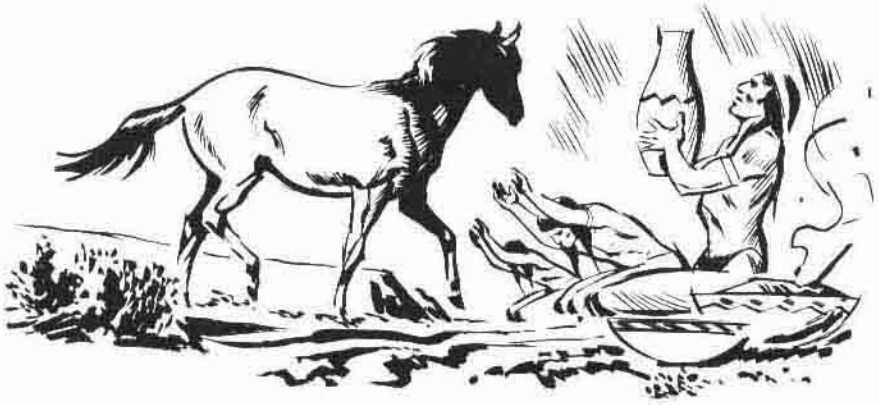
Centuries later, a horse named Bayard so bedeviled the Emperor Charlemagne (742-814) that the animal's destruction became almost an obsession. Bayard belonged to Renaud of Dordon, the eldest of four brothers who feuded with Charlemagne for 15 years. The horse's speed, strength, stamina and boldness became legendary. In hand-to-hand combat, his slashing hooves often brought victory to his master. Once Renaud and Bayard, both disguised, entered a race sponsored by Charlemagne and, winning handily, ignored the prizes but seized the emperor's crown.

Charlemagne at last besieged the brothers in their castle. When food ran out, the brothers, their families and followers killed and ate all their horses except Bayard. During the last four days, Renaud bled Bayard to sustain the children. When Renaud was then forced to capitulate, the emperor granted amnesty to all Renaud's kinsmen and followers, even agreeing to knight his sons as they reached manhood. He demanded only the surrender of Bayard. Then Charlemagne, although ordinarily an amiable generous man, ordered that a millstone be chained to Bayard's neck and that the horse be thrown from a bridge into the Meuse. However, once under water, Bayard smashed the millstone with his hooves, swam from the river and escaped into the forest of Ardennes.

Babieca, the battle-charger of Spain's El Cid (1040-1099), also became a legend in his own lifetime, renowned for his speed, grace and beauty. Yet he performed perhaps his greatest service after the Cid's death of a lingering illness in Valencia. At that time the Moors had surrounded Valencia and were trying to storm the city. In a strategem outlined the day before his death, the Cid's captains saddled Babieca and fastened the Cid's body in the saddle. The horse bore his burden proudly and gently. The appearance of the Cid so rallied his soldiers that they fell upon the Moors and drove them into the sea.

Through all this time there were no horses in the New World. Cortes introduced horses to continental America as a small troop of cavalry in 1519. As the Conquistadores fought their way across Mexico, the Indians feared the horses almost as much as the Spaniards' firearms. When Cortes' favorite horse El Morzillo, fell lame in 1525, Cortes left him reluctantly with a tribe who had never before seen a horse. The Indians pampered El Morzillo, housed him in a temple and offered him their greatest delicacies — spiced fruit and chicken. The horse soon died. Mindful of the Conquistadores' muskets and fearful of retribution, the Indians hastily carved a stone statue of El Morzillo as a substitute for the original. The Conquistadores never again passed that way. But when Jesuit missionaries reached the tribe more than 100 years later, they found the Indians worshipping El Morzillo as their god of thunder and lightning.

As the result of selective breeding, modern draft horses are more powerful and modern race horses swifter than their forebears in the ancient and mediaeval world. What they lack is the aura of romance that turned oldenday horses into popular heroes and even gods.



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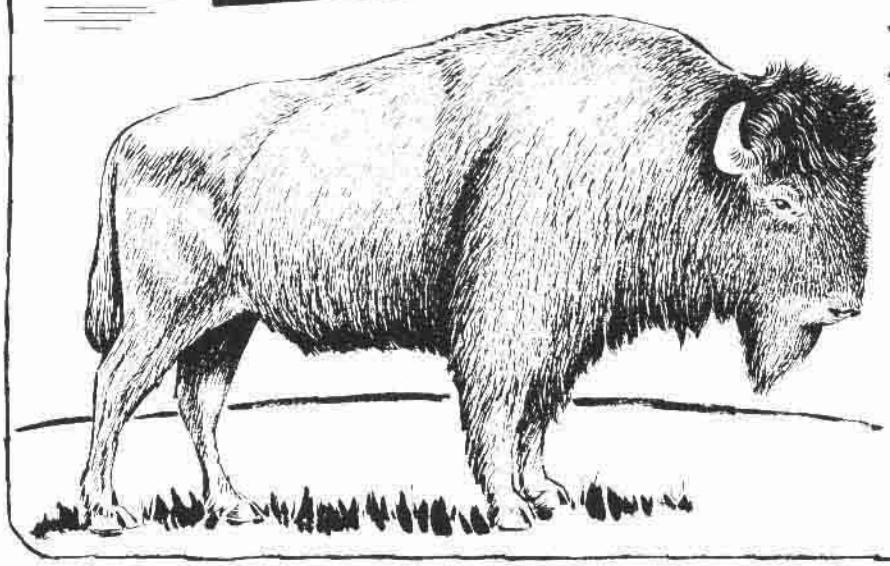
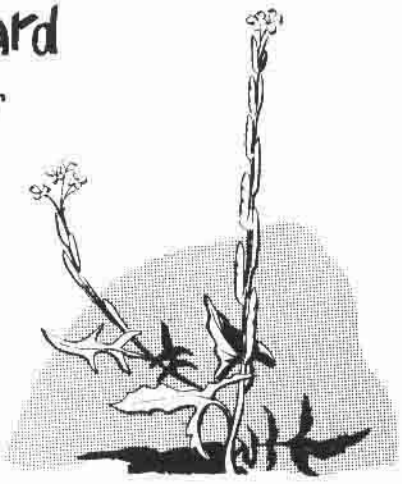


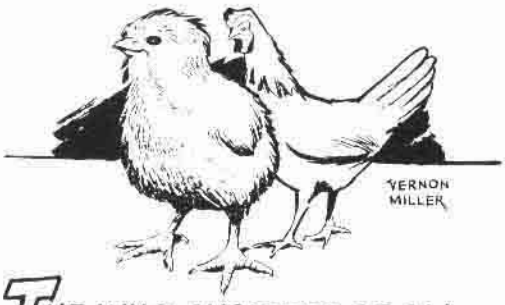
The BUFFALO

WAS A GREAT SOURCE OF SUPPLY TO INDIAN ARTISTS.... POROUS NOSE BONES MADE GOOD BRUSHES. SHOULDER BLADES BECAME A PALETTE... ITS FAT WAS MIXED WITH COLORS. GALL STONES BECAME A BEAUTIFUL YELLOW PAINT AND ITS HIDE WAS SCRAPED TO PAINT ON.

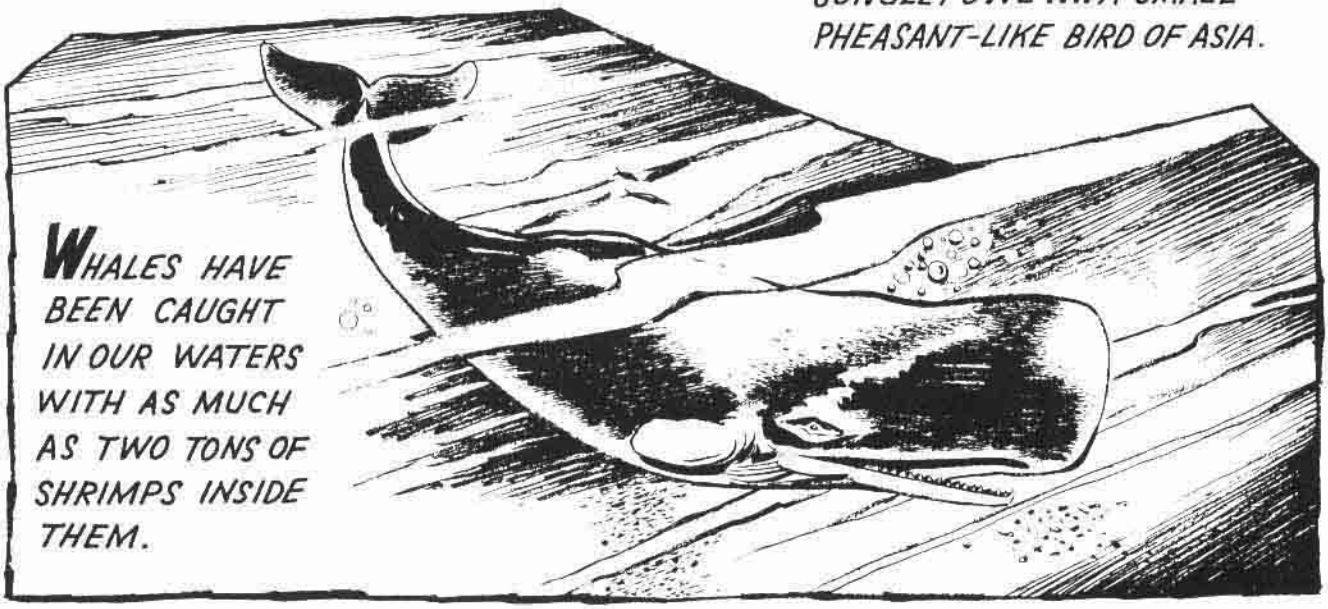
Hedge Mustard

A SINGLE PLANT OF THIS OFTEN BEARS UP TO 750,000 SEEDS... IF THESE ALL SPROUTED AND GREW BEARING SEEDS IN TURN, THE ENTIRE SURFACE OF THE EARTH WOULD BE COVERED WITH MUSTARD PLANTS IN THREE YEARS.





THE WILD ANCESTOR OF ALL BREEDS OF OUR DOMESTIC POULTRY WAS THE RED JUNGLEFOWL .... A SMALL PHEASANT-LIKE BIRD OF ASIA.



WHALES HAVE BEEN CAUGHT IN OUR WATERS WITH AS MUCH AS TWO TONS OF SHRIMPS INSIDE THEM.

Name: Cilroy

Occupation:

Event:

"Cilroy" and rider, John Rumble, clear two of thirty-three obstacles on the thirty-eight-mile cross-country course of the three-day event competition held at Stockholm, Sweden, in 1956. They finished the course with no faults.

Only eleven entries out of fifty-five starters held this record. Because of performance of "Cilroy" Canada placed third and won bronze medal, the first Olympic medal for this country in an equestrian event.

Fred said today all plans have been cancelled for men and horses from Canada to compete in the 1968 Olympic Equestrian Events. The news made me sad, even though I'm too old to go this time.

"What a thrill it was at Stockholm, in 1956!" said Fred. "Do you remember, m'lad?"

I nickered and rubbed my head against his sleeve and he laughed. "Upon my word, I believe you *do* remember!"

I remember a lot of things. First, John Groat's farm near Cheltenham, Ontario, where I was born in 1947. And my mother, "Groat's Peggy", who told me my strong build came from her German Coach Horse strain. She said from my thoroughbred sire, "Candar", I would inherit speed and courage. But courage failed when I met my first sheep, though I put on speed and leaped over my first high fence to get away from it.

Hearing John Groat boast I'd make my name as a jumper, I galloped off to tell my mother. "Not if you stay scared of sheep all your life," she warned.

People came to see "John Groat's good brown colt". Some, like Sam Stanley of Weston thought me "gangly and awkward". Sam bought me as a two-year-old. "He'll grow into himself", he said.

With work across country and over jumps, I put on weight and height, improved so much that Sam entered me for the Governor-General's Cup at the 1950 "Royal", was proud when I placed second.

After that, I went to "Glenville Farms", near Newmarket, Ontario, as hunter for Mr. J. H. Crang, "the boss". Fred Hughes, his manager, trained and cared for me. Foxhunting with the Boss, I galloped across country, flew over fences and gullies. He called me "bold and courageous".

Fred said I needed discipline . . . tried to teach me manners . . . thought he'd cure my fear of sheep by hanging a hunk of stinking wool over my manger. Fed up, I jumped the paddock rail, hid myself in the woods. Later, remembering the kindness I'd received at "Glenville", I let Fred catch me and bring me back. We've been friends ever since.

A fall on snow-covered ice injured my hoof. Forbidden by the vet to hunt or jump for a year, I got bored. Fred decided to teach me Dressage. Three months later, I placed second in my first Dressage class, one-quarter point behind an Olympic winner. Later, winning my Dressage Test at the "Royal", Madame Lis Hartel pinned on my ribbon. "You can have no higher honour!" said Fred. (Little did he know!)

Back in the hunting field again, I quivered with excitement at the music of horn and hounds, carried some of the Boss's most important guests, was said to be "a great hunter", heard talk of "The Olympics", "Badminton", "Stockholm", "The Three-Day Event", "Our Canadian Team".

I remember Fred's excitement when the Boss loaned me to the Olympic Team. Major L. J. McGuinness was team captain; John Rumble, Brian Herbinson and Jim Elder, team members, and "Major" Anatole Pieregorodski, our trainer. Brian rode "Tara", an Irish horse who had been on the Olympic Team in 1952. Jim rode "Colleen", another import. John Rumble was to be my rider. As we toughed it out together — he wanting his way, I wanting mine — he told Fred he was doubtful that I'd make the team. "You need a thoroughbred for those courses, Fred. I know, I was at Helsinki." "Major" was worried because I rushed my jumps — "On an Olympic Course, it could mean death to horse and rider!"

It was touch and go, but I gradually improved, was finally chosen to go to England for further training at Badminton, over the Duke of Beaufort's Three-Day-Event Course.

Loading us on to the plane, I heard Brian's father say if Canada placed near the top, and I were on the Team, it would help promote Canadian-bred hunters. I knew then I must do my best — not only for the Boss and Fred, but Canada.

Arriving at Badminton, I was shocked at the size of the jumps. "Tara" warned me Olympic jumps were twice as formidable. As my jumping continued to improve, I was finally chosen to go to Sweden.

On the plane I cut my leg near the hock. Infection set in and it swelled from hock to hoof. Again the vet ordered complete rest. Fred looked anxious, the boys worried, and "Major" fretted because final choice of men and horses must go in. Once official, no changes were allowed. An ailing horse could mean team elimination.

Fred tended me day and night — hot compresses, cold water hosing, each half hour. His devoted hard

work won out when (with just one day to go) the vet said he thought I'd be O.K. I cleared a few practice jumps, felt no ill effects. Prancing and dancing, I took my place in the Opening Parade with "Tara" and "Colleen", saw the Queen's horse, "Countryman", with the British team, met "Iller", one of the Swedish horses. Afterwards, "Major", Fred and the boys discussed rules, points, weather and jumps, and I remember John saying the Trakener or "Coffin Jump" was worst of all.

Fred woke me early the first day, and John and I entered the arena for our Dressage Test shining like apples. "Major" was delighted when I finished sixteenth out of fifty-six entries, with no serious mistakes.

Thunder and lightening kept us awake that night, and rain still pounded on the roof as Fred got me up at 3:30 a.m. on the second day, for our all-important Endurance Test across country. The Dressage had limbered up my leg and both John and I felt fine, in spite of lack of sleep.

Horses were being sent out at five-minute intervals. As we waited in the Assembly Area, we watched "Iller" start off, heard with shock, not long afterwards, he had lost his life at the dreaded Trakener.

Now, it was our turn! Standing under the big clock, listening to it tick off the seconds, our hearts pounded. Only three seconds left . . . now two . . . now one . . . WE WERE OFF!

Thundering through the town of Stockholm, rushing over the Steeplechase jumps, galloping down the Roads and Trails, I fought John's hands as he tried to slow me down.

Rushing on, I faced a post-and-rail fence, the first of thirty-three Cross-Country jumps, and cleared it. Then, tiring, I scraped the second jump — a stone wall.

Slowing my pace a bit, I cleared two more post-and-rail fences on either side of a road. My bad leg felt as good as the others, and, spurred on by the cheers of spectators, I bounded easily over a pile of oil drums, high as a car.

Next, I jumped what looked like a simple fence, only to nose-dive into an unexpected pool on the other side. But I made a good recovery and leaped the opposite jump with room to spare.

Galloping along a forest trail, greasy from heavy rain, I bounded over two great tree trunks . . . cantered through a barn, to jump straw bales on the far side . . . then a chicken coop . . . another post-and-rail fence . . . and a ditch.

Then, ahead of me, I saw the formidable "Coffin Jump" — high, solid fences on either side of a cavernous gully, and at the bottom a jump over a creek. I decided to jump the whole thing, even though the takeoff was slippery and the spread was twenty feet — but I've always hated slithering down the sides of gullies.

Remembering the fate of "Iller", I shuddered. Then, gathering my courage, standing well back, I gave a mighty leap — pushing from my hocks with all the strength in me — and flew through the air.

Landing three-quarters of the way up on the far bank, I scrambled to clear the last fence. The Trakener safely behind me at last, I faced a huge crowd of cheering spectators. Through their roars, I could hear John's voice as he said, between gasps, "You're the *greatest*'. Boy, you've got *heart!*"

Relaxing, now the strain was over, I approached a drop-jump, took it carefully, and faced the *queerest* jump I ever saw — tea-table, chairs and garden umbrella — but took it in stride. Next, I jumped a board fence, bounded over a gate, "banked" a pile of logs, high as a boxcar, and cantered on to clear two great tree trunks with room to spare. No mistakes against me so far, and I was facing my last jump — a castle wall, and, beyond it, a drop-jump over a ditch.

As we got closer, I saw a man lying very still in the ditch, two men trying to drag him to safety. It was too late to slow up now, so, in perfect stride, I sailed over — man, ditch and all!

Then, the last mile home! John slapped me on the shoulder, shouting, "We made it! We made it!", and guided me through the great arch, to be clocked-in to the cheers of a milling crowd. Fred fussed over us like a hen with chicks — "I saw you take the Trakener — *what* a jump!" and laughed when I started to graze — " . . . after a thirty-eight-mile course, with thirty-three jumps!"

Out of fifty-five starters, just forty finished the course, only eleven without a mistake — and John and I were among the eleven! They said I had done better than the other two, scoring –19.78 against Colleen's –42.49 and Tara's score of –75.30.

On the final day, Stadium Jumping to prove our fitness. Stiff with fatigue, I dawdled. As they called my name over the loudspeaker, John urged me on. "Speed it up, fellow — we're late already!"

With just one minute to go, a shoe came off! John vaulted out of the saddle and grabbed it, moaning, "This does it, Fred! We'll be eliminated!" Suddenly, (like a guardian angel, Fred said") Bob Armstrong, farrier for the British Team, came on the run, snatched the shoe, opened his kit, took out a hammer and nailed the shoe on again — I was saved!

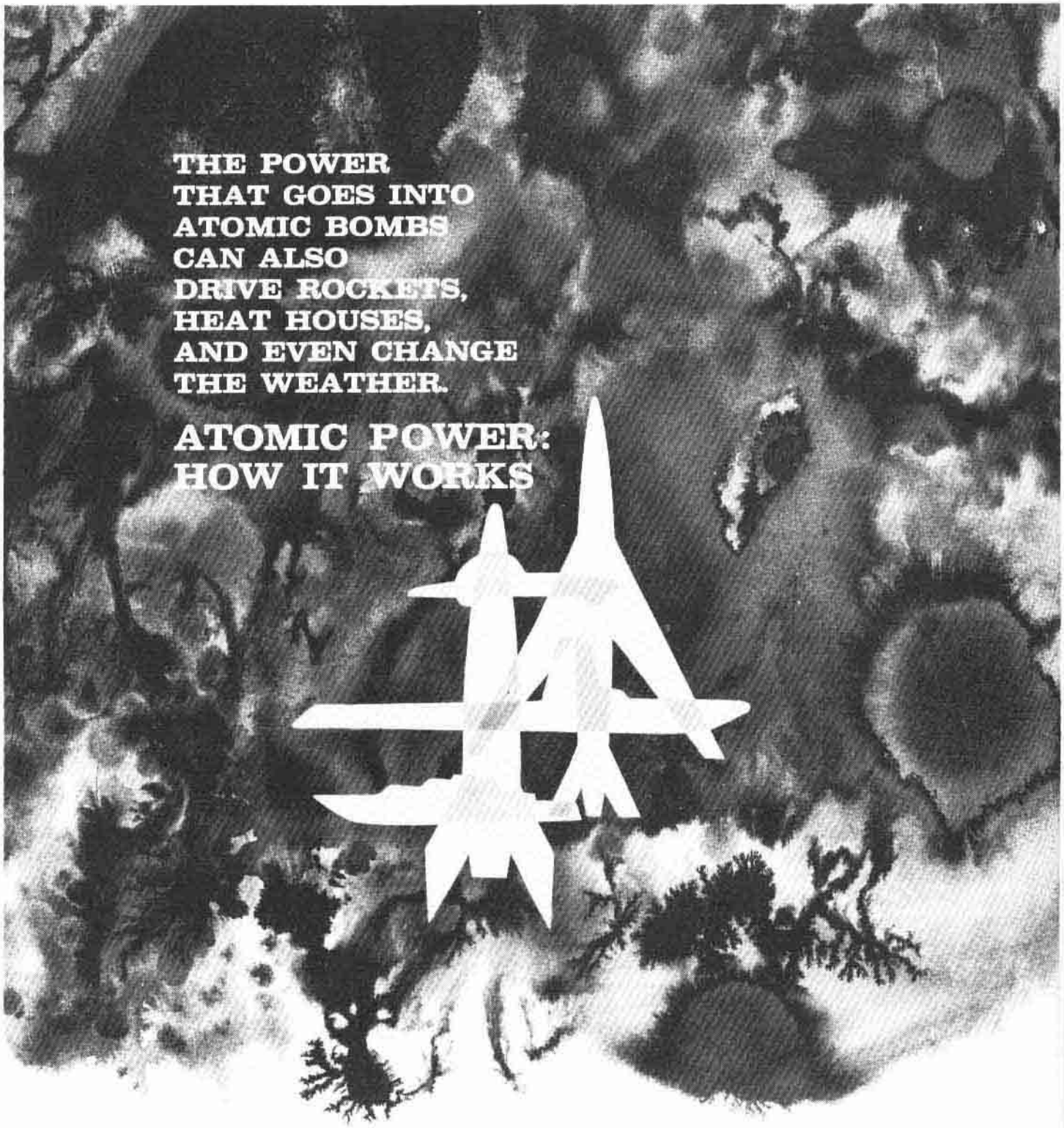
Of twelve obstacles jumped, I knocked down two. When "Major" totalled our scores, I had placed sixteenth with –162.53. "Colleen" was nineteenth with –193.69, and "Tara" twentieth, with –216.50. Great Britain, "Countryman" helping, had taken the Gold Medal with a team total of –355. Germany had the Silver Medal with –475. And, whooping like Indians, the boys brought the news that our team total of –572.72 had won the Bronze Medal for Canada!

That all happened in 1956. I'm a lot older now — 19 on my next birthday. But I'm fit and strong and still able to give the Boss and his friends a good day's hunting; and, as long as I live, memories of my Olympic Year will live with me.

I'll never forget the night John came to visit me at "Glenville" after we got back. He brought me a Bronze Medal and says I'm the only horse in the world to have an Olympic Medal of my very own. But he won't tell anyone where he got it — not even me!

After John had gone that night, Fred said "We fooled them, didn't we, Cilroy — those people who said a Canadian half-bred wouldn't stand a chance against European Olympic thoroughbreds!"

I lifted my head and whinnied loudly. We fooled them all right!



THE POWER THAT GOES INTO ATOMIC BOMBS CAN ALSO DRIVE ROCKETS, HEAT HOUSES, AND EVEN CHANGE THE WEATHER.

ATOMIC POWER: HOW IT WORKS

BY
HUGH McINTYRE

The power of an atom bomb can tear a great city apart in seconds. But power from the same materials used in these bombs can also light our homes, run factories, drive space ships, change the weather, and open new mines and canals. These are the really exciting uses of atomic energy. We're just beginning to try them.

If you live in Ontario, part of the electricity that lights your living room is generated by atomic energy. It's still a very tiny part. Only one atomic power plant, quite a small one, is working at Rolphton on the Ottawa River. But this year a bigger one will be working at Douglas Point on Lake Huron. And Ontario Hydro is going to start building another, that will be the biggest in North America when it is finished in 1970.

But atomic power isn't just for big plants. Right now, far off on the icy Arctic island of Axel Heiberg, is an automatic weather station. It sends a radio signal that tells what the weather is like there. The sta-

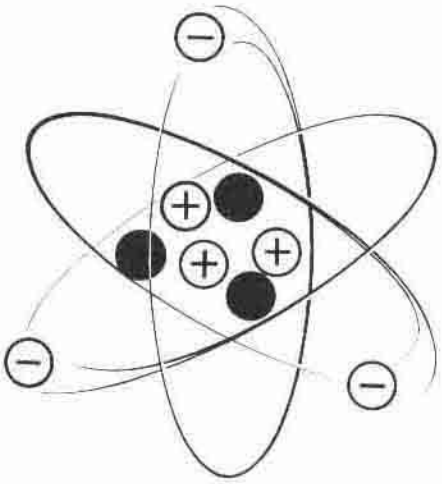
tion is always warm. It is powered and heated by strontium-90.—a radioactive material or "isotope" that gives off heat as it slowly turns into something else.

What is atomic energy? Many people who have read about what atom bombs can do think atomic power is dangerous. This just isn't so. The fuel used at the Rolphton power plant, for instance, is as different from atomic explosive as the coal that drives a steam engine is different from TNT.

To understand atomic power you have to know what an atom is. Atoms seem to be mostly made up of three things. The first is called a "proton". It is often drawn as a small white ball, though no one knows what it really looks like. It has a positive electric charge.

The second is a neutron. It is generally drawn as a small black ball. No one has ever seen a neutron either. It has no electric charge.

The third is an electron. It is drawn as a smaller white ball. It is also invisible. It has a negative electric charge.



As you see, the protons and neutrons clump together in the middle of the atom to form the "nucleus." The electrons spin around this nucleus the way planets spin around the sun. Everything we know on earth is made up of atoms.

To get heat from the atom, we need the same three things we use to build any fire. We need fuel, a stove or fireplace, and a match, or some other way of starting the fire. In atomic language, fuel is called "fissionable material". The fireplace is called a "reactor". To start the fire, or "fission", we need a "trigger".

In some atoms, you see, the nucleus breaks up into pieces quite easily. They do this when a single neutron is added to the nucleus. This neutron is the "trigger". A uranium atom has more protons, neutrons, and electrons than any other atom found in nature. When it breaks up, or "fissions" nearly all the pieces reform into smaller atoms. A lot of the energy that went into tying the big atom together is released as rays of energy. A few neutrons are left over when the smaller atoms are made. They can go on to hit more uranium atoms, making more energy and more neutrons. This process goes on steadily in a nuclear fuel, making it very hot. We get power from this heat.

Even the "ashes" of an atomic fire are useful. They are "isotopes" of elements which are radio-active. Isotopes are atoms which have more or fewer neutrons in them than the usual atoms of a substance. This makes them unstable and they by themselves change into some other kind of atom. While doing this, they give off rays, either of energy, or beams of one of the tiny atomic particles we've been talking about. Such isotopes can be used for long-life batteries or heaters for weather beacons or satellites. They can also be used for killing cancer cells and treating other kinds of illness.

Also, the invisible rays they send out can "look" inside a closed tank and tell how much material is there. Or they can tell how heavy an object is without weighing it. This helps to make machines which work by themselves without anyone controlling them — the "automation" you read about in the papers. For instance, one company has a mechanical "eye" filled with a radio-active isotope which "looks" at cans of detergent passing on a conveyor, to tell if each can is full. If not, the can is automatically sent back for a refill. The cans are made of dense opaque plastic — but the "eye" sees right through it!

Right now, Canada is one of the leading countries in the world in using atomic power. Partly this is because we have more uranium, the atomic fuel, than most other countries. Partly it is because we have very clever scientists working for Atomic Energy of Canada at our big nuclear centre at Chalk River. They have developed a "reactor" which many people believe is the best in the world. In fact, far-off India just recently bought one of our reactors for a power plant in that country. People hope that by the time you're grown up this will be a big industry. Thousands of Canadians may be making "reactors" and digging and manufacturing the uranium fuel for them. People all over the world may be using t h e m for electric power and heat.

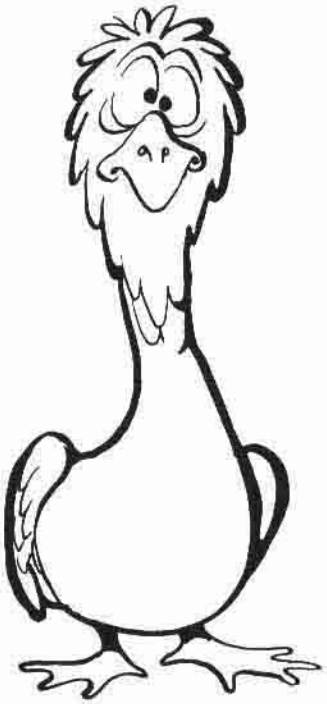
But by that time, lots of other exciting things will be happening in atomic energy. Atomic space ships, for instance, are just around the corner. Ordinary rockets aren't strong enough to send rockets to Mars and back with people on them, unless they take years and years. So atomic power will be needed. The first atomic rocket motors have already been tested on the ground in the United States. They are small reactors that will heat a gas or liquid and shoot it out the nozzle of the rocket. Maybe some day a rocket ship will be pushed by throwing small atomic bombs out the back and letting the explosions push the ship ahead. But it will have to have **very** thick walls!

You probably won't see atomic-powered automobiles, however. As we know, fission makes radio-activity, and reactors need lots of heavy walls around them to protect people from the rays. But if you take a trip on an ocean liner twenty years from now, it will probably be an atomic ship. Ocean ships are big enough to be able to carry the heavy walls needed by reactors. The U.S. already has an atomic merchant-ship, the **Savannah,** and lots of atomic-powered warships and submarines. The Russians have them too, and other countries are building them.

The really big changes brought about by the atomic age you are growing up in, will happen when people find out how to break up atoms of ordinary substances like water and get power from them. In the sun, for instance, we know that small atoms are joined together to make bigger ones, releasing great floods of heat and light. This is the opposite of fission. It is called "fusion". When we can produce power from nuclear fusion, we will truly have the power to move mountains, change the climate, and make this world the kind of place we want it to be.

PUZZLE & GAME PAGE

Read the answers in your mirror!



It's for the birds

Our topic today is birds. Let's see what you know about them!

1. Name two well-known birds that never fly.
2. Does a parrot really know what it is saying?
3. What is the "nose" of a bird called?
4. Name two animals that can fly, but are not birds.
5. What is the name of a scientist who studies birds?
6. What bird can imitate the calls of many other songbirds?
7. Each year (usually in the fall) birds shed their old feathers for new ones. What is this process called?
8. What is the "top" of a bird's head called?
9. Are the feathers of a bird weak or strong?
10. What Canadian bird is a water bird, honks, and can fly as well?

Single line crosswords

Nearly everyone has worked a crossword, but have you ever tried a single line crossword? The word suggested by the clues is made up of the letters in the positions as numbered. Can you discover the final solution?

1	2	3	4	5	6	7	8	9	10	11

Clues

Original American taxi	6, 3, 5, 6, 7, 8, 1, 2, 9
not night	5, 4, 11

Correct answer

our common interest	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

1	2	3	4	5	6	7	8	9	10	11	12

Clues

. . . . . of 20 is 10	2, 11, 7, 12
to come together	4, 3, 8, 1
jump, or . . . . . through the air	9, 10, 5, 6

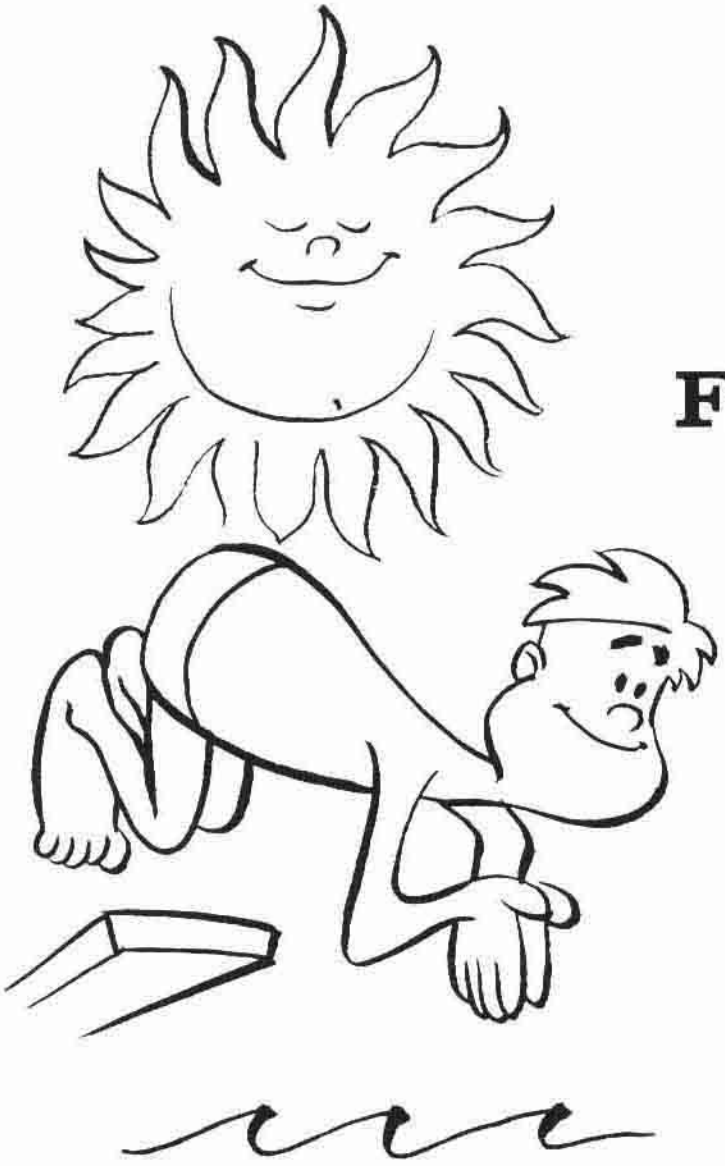
Correct answer

symbol of Canada	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

w	f	l	e	b	r	a	l
p	i	l	a	l	s	m	p
r	n	o	m	k	a	p	o
e	b	i	w	p	p	l	m
a	l	r	e	a	e	r	u
s	r	h	c	d	a	l	l
h	y	c	d	l	w	o	y
t	s	u	o	o	h	w	e

You can't see the Forest for the Trees.

But once you find all the trees, you have your forest. The names of the trees are spelt by moving from one square to another in any direction, sideways, up and down, or diagonally. Any square can be used only once for each name, but may be used again for other trees. **Canadian Boy** would like to thank Paul Stephan of Hamilton, Ont., for sending in this puzzle.



FITNESS

training for skiing

Skiing is one of Canada's top winter sports, and is gaining in popularity every year. This winter, thousands of teenagers and younger boys, from the Maritimes to the West Coast, will take to the snow-covered slopes. Many of them will have trained before the season to be in top shape. But some will be out of condition and some will be trying skiing for the first time.

On these pages are shown some of the basic things to do to get in shape for this winter's skiing. The exercises could be done at home and require no equipment. Start slowly and build up to the number given under each diagram. Do not try to do them all at once. A good idea is to do each until you feel your muscles getting tired, then switch to the next exercise.

Good physical condition gives you the ability to make your skis go where you want them to, and also gives you the best protection against accidents. Remember, when your family car goes on a trip, you check the oil, battery and radiator. In the same way, these exercises can be a good check on how ready you are to start skiing.

Chair Raiser. Kneel and take bottom of back chair leg. While keeping arm straight and stiff, lift chair out to side, rise to stand. Do with each arm. Five times.

Toe Touch Jump. Strengthens thighs, stomach, Achilles' tendons, help co-ordination and timing vital to rythmic shortswing. Stand erect, jump up and touch toes with knees as straight as possible, land on the toes. Five times.

Cradle Roll. Stretches all muscles in front of body. Lie on stomach — bend knees — reach back with hands and clasp toes. Rock five times — rest — rock five times.

Balancing Act. Prepares skier for turns and traverses. Stand with feet together, left hand on head and slowly bend to right until left leg is parallel with the floor. Hold for count of five — five times a side.

Body Bend. Strengthens those muscles used in basic traverses. Start with feet spread and arms over the head. Shift weight to left leg and slowly bend left knee, with right knee straight, at the same time bending body to the right. Repeat right and left — five times each.

Back Stretch. Stretches the Achilles' tendons, back muscles, also helps with balance. Bend and grasp toes; keep the knees straight, then start walking. Take ten steps.

Cruncher. Feet parallel, three inches apart. Rise to toes, roll down on outside edges of feet to heels. Ten times.

Foot Clasp. Toughens stomach muscles and stretches thigh and hip muscles needed in rythmic turns. Sit on floor — feet together — knees spread to sides — hands grasping toes. Roll over on one leg and down on to shoulder and then roll back. Repeat five times each side.

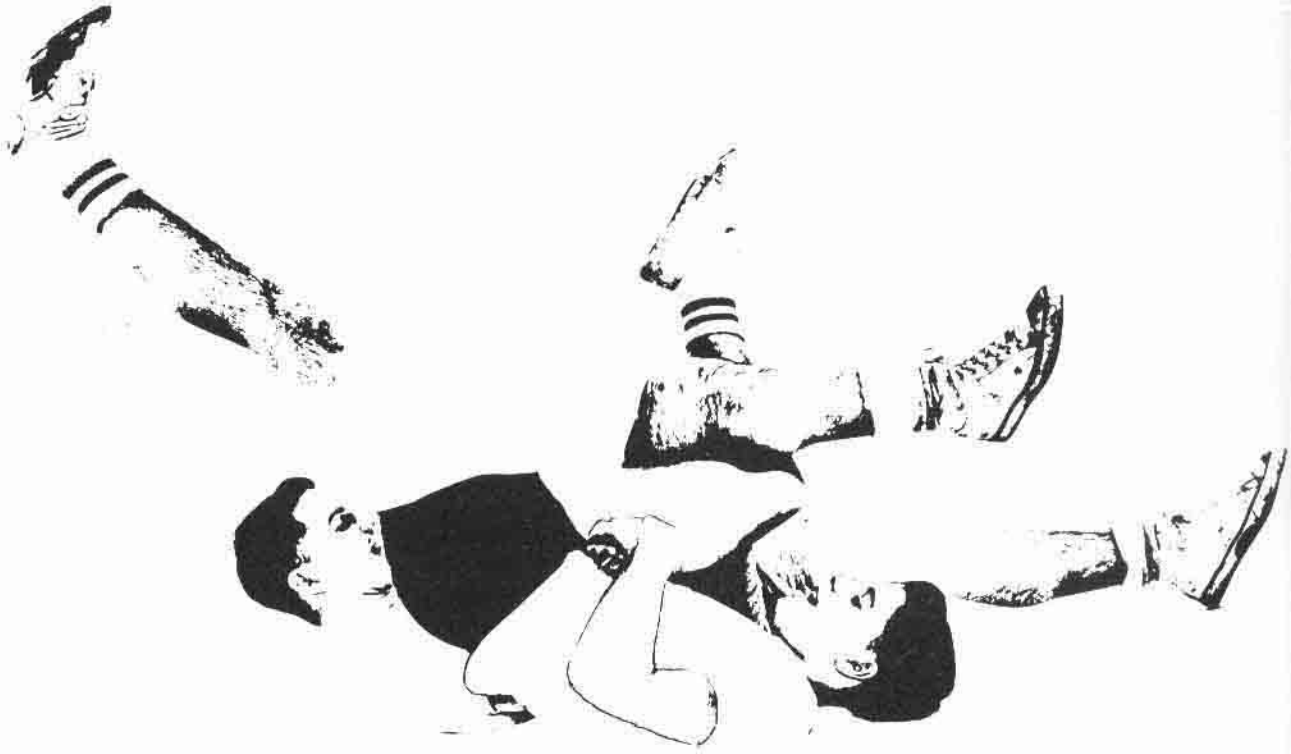
Thigh Toughener. Strengthens thighs for bumping runs. Place heels 15 inches from a wall or put back against the wall and sink to sitting position. Aim for 25 seconds

Practice Rolls. Use this to prepare for falls. Lie on back — arms out — raise legs with knees stiff until toes touch floor beyond head. Return to original position. Repeat five times.

Stride Grab. Feet apart, legs straight. Bend, hold ankle; feet further apart on each try. Ten times.

Hurdler Lean-back. From hurdler position (sitting on floor, one foot out, other tucked back), lean backward to touch floor with head. Support body with free arm. Do twelve times, then switch legs.

Heel Lift. From toes on books, rise up until you feel pull in calves; down slowly. Ten times.

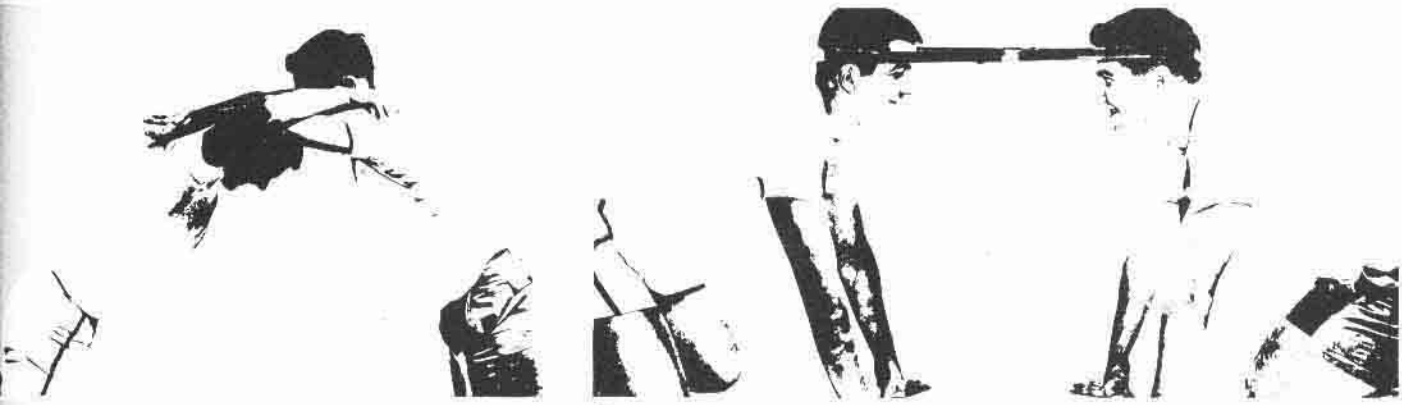


1

SOMETHING NEW IN SCOUT FITNESS -

Physical fitness exercises are okay, but sometimes you get a little tired of doing push-ups and knee-bends by yourself. Right? Well, here are some exercises designed to keep you in shape and give you a little competition at the same time. Competing against one of your buddies can make you put out that extra effort that goes a long way to getting you in top-notch condition. ■ For a fair contest, you and your opponent should be of almost equal size and weight. This way you will not only test your individual strengths but also build muscles. The loser can try a few individual exercises so that he can do better next time. ■ If you haven't got these exercises in your programme already, ask your Scoutmaster if your patrol can try them. You'll get a lot of fun out of it.

1 Indian Leg Wrestle. Lie on your back and link your right elbow with your opponent's. Raise your right leg three times and, on the third count, catch opponent's heel and flip him.
2 Shoulder Push. Face your opponent, who stands six feet away from you. Then lean forward with your hands on each others shoulders. Try to push your opponent back at least three steps.
3 Belt Tug. Boys fasten belts together and place them as a loop around their heads. Try to push the belt over your opponent's head without your knees or hands leaving the ground.
4 Stick Pull. Contestants sit on the ground, facing each other with the soles of their shoes pushing. The winner must push his opponent forward to his feet.
5 Duck Fight. Grasp both your ankles in a low squat position. Butt your opponent with your head or shoulders. The winner must force the other to let go or fall.
6 Arm Wrestle. Lock arms at elbows and try to force the other to the ground. Keep arms stiff for maximum force. Tripping is not allowed.
7 Push Back. Stand back to back, your arms linked with your buddy's. Conduct this contest between two lines 20 feet apart. The winner is the one who pushes his opponent back over the line.
8 Hand Tussle. Clasp hands at arm's length. Try to move your opponent out of position. The first to move his feet is the loser.
9 Back Pull. Stand back to back, locking hands over shoulders. Then try to push your opponent off his feet and keep him over the finish line 10 feet ahead of you.
10 Indian Arm Wrestle. Try to force your opponent's hand to the ground or raise his elbow without moving your own elbow, then try it with the other hand.
11 Stick Fight. Grasp the stick firmly with both hands, force the stick and left hand of your opponent to the ground. Repeat several times.



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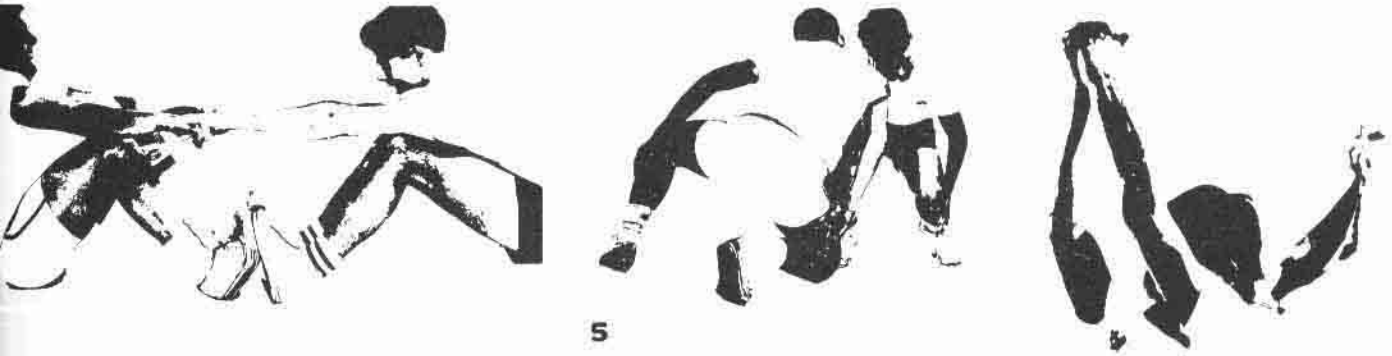
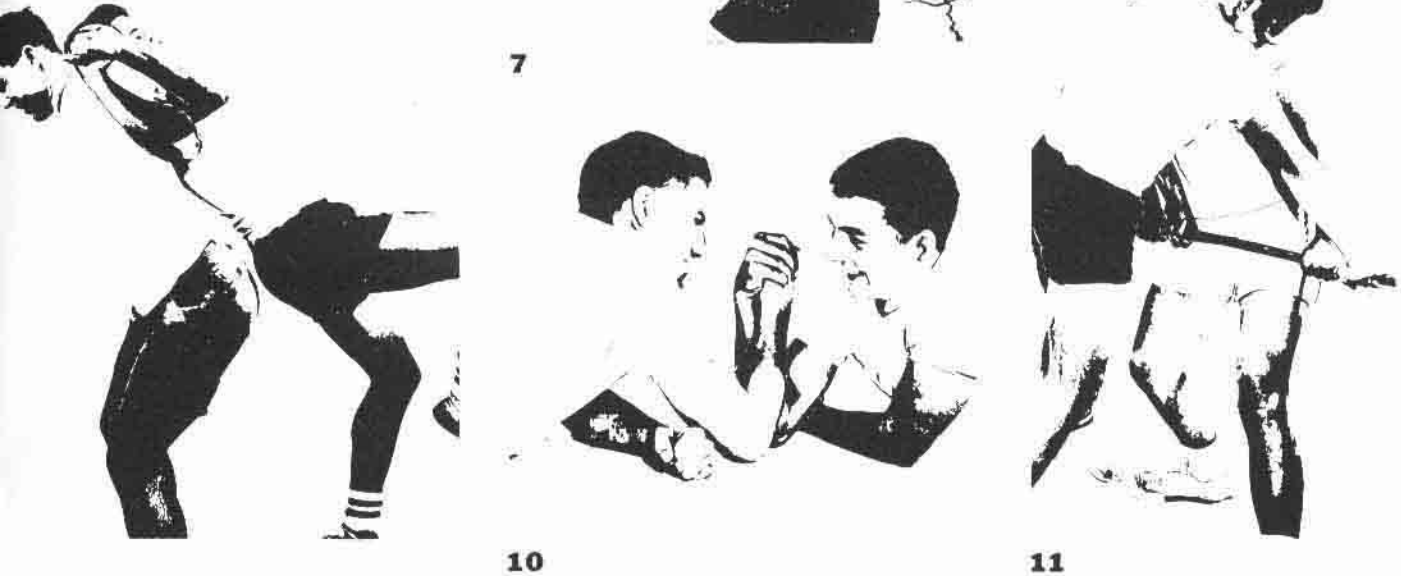


5

TRY TWO MAN CONTESTS

7

8



10

11

Fitness for Cubs

Here are some activities for you to do at home, at school, at play and even at Cubs. Some of them are regular Cub tests—others are mainly for fun, but done often, they will help you to develop your strength and some body skills.

SKIPPING—used by boxers, footballers and other athletes to keep fit and quick-footed.

HEADSTAND—hard to do, but good for body balance.

HEEL CLICK—for fun—jump into the air and see if you can click your heels twice before landing.

BLAST-OFF—for fun—squat—countdown from 10—on zero, yell "blast-off" and leap into the air.

HOPPING—good for balance and for toes and leg muscles.

ONE-LEG BEND—good for leg muscles. Raise right leg and slowly squat on left with right leg extended. Try to get up again without putting hands on floor.

SOMERSAULT—good for flexibility. Put back of hand on floor and roll over. Come up to the alert.

TOE TOUCHING—good for back and thigh muscles. Try to touch toes but don't force yourself for the first few times.

KNEE BENDING—good for balance, leg and feet muscles. Go slow and go down on toes with hands on hips.

CRAB WALK—good for leg and arm muscles. From a squat position, reach back and put hands on floor. Without sitting down, walk in direction of hands.

SOMERSAULT

BLAST-OFF

HOPPING

TOE TOUCHING

SKIPPING

KNEE BENDING

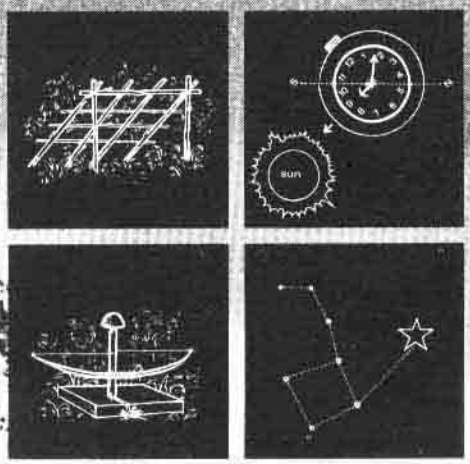
HEADSTAND

HEELCLICK

CRAB WALK

ONE-LEG BEND

THE OUTDOORS



Lost in the bush, there's only one thing for you to remember — that is

objective survival

BY GORDON PRIESTMAN

You're alone. You don't know where; you don't know for how long. For miles around is forbidding, trackless forest. It's a strange and terrifying feeling! You know that soon someone will miss you, but it may take several days to organize a full scale search. Bad weather may keep searchplanes grounded for even longer, and then, when everything is fully mobilized, it still may take days to locate you. Your job — to survive!

With the tremendous increase in bush vacations, camping, and air travel, the chances of this happening are greater than ever before. Each year thousands of people are lost in the vast wilderness areas of this continent, and tragically, because they do not know a few simple rules, some die.

Being lost in the bush is frightening and panic rises quickly. This is natural and common, but fight it! Panic is probably the greatest danger you'll have to overcome. Stay where you are, relax, and study your situation. The cardinal rule of survival is this. Use your head, not your feet!

Basically, your problem is three-fold; to obtain help, to protect yourself from the elements, and to locate sufficient food and drink. Let's examine these points in detail, for if you know how to cope with them, chances are good you'll come out alive.

DISTRESS SIGNALS

There are many ways to attract attention in the bush. For example, a series of shouts, gunshots, or fires, is widely recognized as a call for help. Of these, unless you are very close to people, fire is the most effective. Your signal fires should be built, if possible, on high open ground. This makes them easier to control and increases the chances of having them seen. Regardless of the weather your fires should burn twenty-four hours a day, for they might well be spotted by aircraft after nightfall. In daylight hours you should heap the flames from time to time with moss, wet grass, or evergreen boughs, to produce a thick column of smoke. There are very few areas where such smoke would not be quickly noted by planes or forestry stations.

In discussing fire it has been assumed that matches are available, because anyone travelling through, or over, bush regions should carry a water-proofed supply. However, if you are stranded without them, there are still ways to produce flame. Nearly everyone is aware of the flint and steel used by our ancestors, and those with Scout training will be familiar with the firebow method which follows.

First fashion a bow from a stick and a length of cord such as a shoelace. Next you need a "drill", which is simply a straight piece of dry softwood. This should be tapered slightly and looped through the bow-string. Finally you require a base of dry softwood which you notch, your cut running from one side to the centre. To produce fire, place tinder at the base of the notch, and spin the drill rapidly by a sawing action with the bow. Friction between the drill and the base will produce heat and powdered charcoal will drop down the notch to your tinder, where it can be quickly blown into flame.

Most of us have, at one time or another, burned a hole in a leaf, a paper, or a new shirt, by concentrating the sun's rays through a magnifying glass. This principle can be used by people who wear glasses. Place your tinder on the ground and invert your glasses about six inches above. The easiest way is to rest them on two little pillars of earth for support. Then fill the lenses with water, and you have created a crude magnifying glass through which light can be directed.

If you have a flashlight you have a miniature "solar furnace". Remove the reflector and hold it so that a small intense light is beamed onto your fire-starter and when it begins to glow, blow it into a flame. Aluminum foil can be used in the same way, whether it be regular cooking foil or the wrapper off a chocolate bar or a package of cigarettes. Scoop a depression in the ground or snow the shape of a flashlight reflector and mould your foil to the desired form, keeping it as wrinkle-free as possible.

Your fire-starter can be almost anything which is readily combustible, paper, leaves, bark, or shredded wood. In winter or rainy weather, firewood is a little more difficult to obtain, but even under the worst conditions a few dead underbranches will be reasonably dry, and old stumps and dead trees will usually yield enough dry pieces to start a fire. Then it is relatively easy to dry your supply as you go.

Another method worthy of consideration is used if you have any large open spaces nearby, such as a frozen lake or a bare ridge. There is a series of signs recognized by practically all pilots which can be tramped out in the snow or formed by rocks, logs, or anything readily visible from the air. The four most common and useful signs are as follows: I — require doctor. II — require medical supplies. X — Unable to proceed. F — Require food and water.

Assuming that you were lost, but otherwise in good condition, you would use the sign X, making it at least ten feet long, and if possible thirty or forty feet. If space permits you should also use the old standby, S.O.S.

No matter which of these methods you use, stay put. Don't waste your strength and energy blundering through the bush. People are looking for you, and you've done your part to help them succeed. Your job now is to keep alive and healthy.

SHELTER

It is an old and wise rule in the bush; shelter first, food second. You can go much longer than you believe without food or water, but die of exposure in a very short time.

The type of shelter required will vary with locales and season. In temperate zones a simple lean-to will suffice. Your support stakes can be driven into the ground with rocks, and the cross-pieces secured with thin sapling, vines, or reeds. This frame, when thickly piled with evergreen boughs, will be very snug and cosy, particularly if you make use of natural features such as large rocks, to provide protection from the wind.

A bed of boughs in your lean-to will prove well worth the effort in improved rest, and at the same time offer protection from the dampness of the ground. Fir and balsam are the best materials, but any evergreen will serve. Your bed should be about three feet wide and six feet long. Begin with fairly heavy branches, about an inch and a half in diameter, as these have the necessary strength and spring to support your weight. They should be piled to a height of about a foot in a crossways manner, with the butt ends sticking out each side alternately. This will create a depression in the centre which will keep you from rolling off in the night. Next cover the large boughs with smaller ones until the total height is about eighteen inches and you have a bed far more comfortable than you would have believed possible. If you have any kind of waterproof garment it would be wise to place it beneath you on the bed, as most of the cold and dampness comes from underneath.

In wintertime don't ignore the insulating qualities of snow. Men have been known to pass a night safely in sub-zero weather, curled inside a hollowed-out snowdrift. Just to be sure, provide plenty of ventilation. Many trappers cold-proof their cabins by packing several feet of snow about the walls, and this will work equally well for a lean-to, especially if you barricade the entrances against the wind.

If the nights are cool, build a fireplace in the entrance to your shelter, backed by a pile of rocks or green logs to reflect the heat back toward you. If you wake up cold in the night, force yourself to move. Wiggle your hands and feet. If necessary, get up and tramp around and around your lean-to or a tree (to avoid getting lost in the dark). The increased circulation caused by your exercises will gradually warm you. One word of caution. If you intend to sleep, restrict your activity before you begin to perspire. Sweaty clothes are damp and uncomfortable and in extreme temperatures they could freeze.

If the weather is too cold for the clothes you have, the fluffy down from

the heads of mature cattails is an excellent insulating material. A light spring jacket lined in this manner can be worn comfortably in the depth of winter and will not only be warm, but waterproof as well. If cattails are not available, clothing stuffed with any kind of weeds or grasses will offer some increased protection.

With a little thought, and the materials that nature has provided, it is fairly simple to make your situation bearable under almost any conditions.

FOOD AND WATER

It is next to impossible to starve to death in the wilderness. Nature is generous with things both animal and vegetable, which will not only keep you alive, but strong and healthy.

Probably the easiest foods to obtain are vegetable, so let's consider them first. Berry bushes of one kind or another cover most of this continent, and the majority provide safe food. As a general rule, any black or blue berries which do not grow in clusters may be eaten, while white berries should be left strictly alone. Reds defy generalization and therefore don't touch them unless you know what they are, or see animals eating them.

There is great variety in wilderness greens and many are more beneficial than much of the commercial foods we eat. The tender middle shoots of plants such as ferns, watercress, plantain, and cattail can be eaten raw, like lettuce. Water weeds such as coontail, duck-potato, wild celery and pickerel grass are extremely high in food value and are delicious cut up in stews. Pine seed and acorns can be eaten raw, but are even better roasted, or ground into flour and baked. Roots are a fine food, and easily obtained. Cattail, arrowhead, cow-lily, burdock and many other plants supply roots which are excellent roasted. I know one lady in northern Canada who does all her baking with flour ground from cattail roots, and her family delights in the results.

If you tire of drinking water, or desire something hot on a cold night, a forest tea can be brewed from many plants. Among the best are the leaves from wild strawberry or raspberry, alder, birch or ferns; the inner bark from an elm; or the flowers from the goldenrod, elderberry or clover.

So you see, there is enough quantity and variety in plant life alone to sustain you in an emergency.

remember

There is virtually no limit to the number of things which can be done in the bush to ensure your safety and increase your comfort. All that is required is the basic materials from nature and your own ingenuity.

Quickly, then, let's sum up the most important points.

1. Being lost is a terrifying experience and fear is your most dangerous enemy.
2. Sit down. Relax. Use your head, not your feet!
3. Build fires as soon as possible. Build them in the open spaces and keep them going.
4. Make a shelter to protect you from the elements.
5. Locate food. Greens, berries and roots. Hunt and fish and put out as many snares as you can.
6. Keep your clothing dry and in good repair.
7. Keep up your morale by keeping busy.
8. Stay close to camp and conserve your energy.
9. Think! Keep your head and the chances are good you'll come out alive.

Meat is not too difficult to obtain, and will make a welcome addition to your pot. Porcupines, for example, are very common and because they move slowly and are easy to kill (even with a heavy stick) are considered a staple survival food.

Almost every boy, and certainly one with Scout training, learns to make a snare for trapping. Snares can be fashioned from almost anything available. Fine wire is the best, but lacking that, you can use fishing-line, shoelaces, or even a homemade line of animal skin or cattail fibres. The latter incidentally is extremely strong, and can be made into an excellent rope.

Novices often neglect two impor-

tant details in constructing snares, and as a result their efforts prove fruitless. First, always have your snare attached to a bent-over sapling or similar device, so that the trapped animal is jerked off the ground. This chokes him and at the same time, the awkward position prevents him from biting through the snare and escaping. Secondly, you must realize that animals are much like people. When they see something strange in their path, they are likely to walk around it. Therefore, you should construct a fence of bush or whatever is handy, stretching several feet from each side of your snare. Then it appears easier for the animal to go straight through, rather than to walk around or climb over.

Rabbits and other animals use definite "runs" through the bush so if you can locate one of these paths you are almost assured of a supply of fresh meat.

Ponds, lakes and rivers, of course, provide endless quantities of food. In addition to the various plants, you have your choice of clams, crayfish, and frogs. Or you may try your hand at fishing. If you've had the foresight to carry an emergency pack, it will almost certainly contain a line and hooks. Then, with natural baits, or flies constructed of threads from your clothing, foil, or even human hair, you should have no problem.

Even without equipment it is still quite easy to catch fish. If the water is shallow you could make a spear from a piece of hardwood sharpened and fire-hardened. If the water is deeper you could fashion a line from shoelaces or weave one from those same useful cattail fibres. If your snaring has been successful, rabbit hide can become your line and the curved jawbone, sharpened to a point, your hook.

Without a hook of any kind you can catch fish in the following way. Take a small stick, about one-sixteenth to one-quarter inch in thickness, and from one to six inches in length, depending on the size and type of fish you're after. Sharpen it at both ends and attach your line to its centre. Then thread onto this stick a minnow, a worm, or whatever bait you can find and secure it with a piece of thread to keep it from sliding off. Give a fish plenty of time to swallow your bait and then yank hard. This will drive the pointed stick through its insides, often killing it, and it can then be hauled in with ease.

For cooking purposes a small fire is far superior to a large one, and whenever possible should be built in front of a large rock to take advantage of the reflected heat. Failing this, a few green logs will serve the same purpose. Probably the quickest and easiest way to cook meat is to barbecue directly over the flame. The main fault with this method is that most of the good juices are lost in the fire, so a much better way is to bake your meats. This can best be done with foil, but lacking that, clay or wet leaves will do nicely. One simple method is to place your wrapped meat on heated rocks in a hole in the ground, then cover with coals and pack the opening with moss and earth. This takes much longer than barbecuing, but the results are worth waiting for.

If all else fails, if you are unable to obtain meat, fish or berries, there are still many things in the bush that will keep you alive. Because they sound drastic, I have left them until the end, but when faced with starvation, there is not time for squeamishness.

Insects, grubs and snails are available everywhere. They keep animals healthy and they'll do the same for you.

The green scum found in stagnant ponds is actually algae, an important source of food in many lands, notably in Japan. It contains over fifty per cent digestible protein and can be made into soup, or dried and eaten raw. You could, if necessary, survive on a diet of this alone. But don't touch red algae — it's poison.

The mud on the bottom of small lakes and ponds is unbelievably rich in food value. This is understandable if you realize that it is an accumulation of thousands of years of organic material. It is best eaten as a soup flavoured with leaves and berries. In an actual experiment several years ago the subjects ate nothing else for two weeks, and at the end of that time showed an increase in weight; without suffering from side effects.

Winter adds little to the problem of finding food. While it does eliminate sources such as berries and leaves, it compensates in other ways. Animal trails are easier to locate and you will have more success with snares. Birds such as partridge and grouse which are so scarce in other seasons, sit out on open branches and allow you to walk right up to them in winter. Finally, fish are still available through ice-fishing, as are algae and pond silt, although a little thawing may be necessary.

Water can be obtained in winter either by melting snow or by chopping through the ice if it isn't too thick. At any time you are reasonably safe in drinking running water, but if you have any doubts, boiling will destroy any harmful qualities.

So you can see that there is no need for anyone to starve in the wilderness. Nature has provided if you know where to look.

Most of your efforts while you wait for rescue will be devoted to keeping your table and your woodpile well stocked, and to accomplish this it may be necessary to explore some of the surrounding country. This should be kept to an absolute minimum, but if you must leave camp take these few precautions. Note the sun's position and any distinctive landmarks which will aid you to find your way back. It is a good idea to blaze trees or mark your trail with rocks and sticks. If you should become twisted, you can locate your direction in several ways. First, of course, by the direction of the sun, or you can use your watch as a compass. Simply hold it flat, so that the hour-hand points at the sun.

Then half the angle between the hour-hand and the "12" will be the north-south line, and during daylight hours between six and six, north always lies on the far side of the watch from the sun. If you have been on Daylight Saving Time, you must temporarily set your watch back one hour. At night the North Star will provide your bearing.

If you remain in the wilderness any time, you will find dishes and containers a great help. These can be fashioned of birch-bark pegged together with a notched stick, or sealed with tree pitch. The ultimate in fine survival dinnerware can be made by mixing dried river silt with heated, liquid pitch to make a thick paste. This can then be pressed into shape of dishes or pots, and will dry almost immediately in the sun.

HUNTING

WITH A CAMERA

BY RON LAWRENCE

Picture it for yourself. It's a warm summer afternoon and you are sitting quietly on a deadfall near a game trail; perhaps you've been there an hour, or only ten minutes, but you hear soft, rustling movement coming towards you. Soon you spot the deer as it glides along the well-used trail, its big ears flicking back and forth, scooping up sounds too minute for even the keenest human ear to detect. Now it is in range. You shoot. The startled deer bounds away, unhurt, to disappear behind the curtain of underbrush. But you haven't missed your shot.

You have in fact, bagged your deer —on film! And, believe me, hunting with a camera will give you a bigger thrill than killing your quarry with a gun, for it takes more skill and, above all, more patience. And your trophies will last forever.

Two basic techniques are used for the capture of wild animals on film. The first requires the hunter to be on the scene with his camera: the second requires the camera to be fixed to a tree, a tripod, or other stand and wired for remote control, so that the animal acts as the cameraman. I use the first method. It is simpler, it involves less risk to the camera and it requires more skill and more knowledge of wildlife and their habits. You also learn more of the animals you are hunting, for there are times when you must remain at your station, quietly, for periods that can drag on into hours.

But don't think those hours are wasted. On the contrary, the time you spend waiting for the particular animal you are hunting allows you to observe the bush and its lesser inhabitants. Let's say that you are after a deer. You conceal yourself, choosing your site so that you have a clear field of fire in two directions, up and down the game trail, and you compose yourself for the wait. You won't be there long before you are inspected by a squirrel, a jay, or a chipmunk, or rabbit, or perhaps even a skunk. Then you have a choice. You can wait, watching the antics of your visitor or you can take its picture at once. In any event, whether you watch and wait and then take a picture, or whether you take the picture at once doesn't really matter. Your camera is relatively silent and if you move quietly you won't startle these little animals or the birds to the point of alarm and your main quarry, the deer, will not be warned of your presence.

Mind you, the red squirrel, old Tamiasciurus hudsonicus, can be a pesky little critter. Unless he gets used to you he can sit in a nearby tree cursing your invasion of his domain and telling every animal for miles around that a man is perching on a certain rock or log. But you can make friends with him. I find that a squirrel will come up close to me if I sit still. He'll make his approach two or three times, during which I remain immobile. Then I move a little and Mr. Redback will scoot back several yards and insult me softly, like this: "Tcherr-r-r-r." I chirp right back, pursing my lips and sucking in air through my front teeth. It's not quite the same noise he makes, but it seems to interest him anyway and we have a "talking" match for a time, until he gets tired of me and goes about the more serious business of gathering food. By this time I have taken at least one picture of him.

If you return to the same place next day you will almost certainly find him there again, for these little creatures have a home territory that seldom extends beyond a seven-hundred square foot area. Though these bush watchdogs are not sociable towards their own kind, they get used to man in a surprisingly short time and if you take along a slice of bread and leave some around, you'll soon have a squirrel coming right up

and asking for his handout. I've found myself accepted by a redback in one afternoon. Some may take a little longer, but after about three visits to their territory you'll be accepted — IF you are quiet and do not annoy them!

I have gone into detail on the red squirrel because you need him on your side or he'll give the game away every time. There is no other animal that raises as much fuss as Tamiasciurus hudsonicus and if your particular hunting area consists of, say, two or three square miles of evergreen and hardwood bush, you'll have between ten and twenty of these wild policemen to make friends with.

The best results in hunting with a camera come if you take the time to thoroughly explore a given area. Learn all there is to know about it. Spot locations most likely to yield returns and plan a hide. This can be a natural one, such as behind a fallen tree that still retains its branches, or under large spruce, or balsam, that has low-hanging limbs, but, again, watch your field of view. Otherwise, you can build a permanent hide and for this you will need an area that has willow, young aspen or other thin-stemmed growth. You will have no problem bending the tops of a dozen or more such trees and tying them together, fitting this living tent with picture-taking holes. When the green framework is finished cut some branches of the same species and lace them into the frame. You don't have to make a thick lattice, just enough to break up the outline of your body.

But you don't have to construct these hides. If you are patient and can sit still AND you've made friends with your local redback, you can stand, kneel or sit in the open. I do this often, just for the fun of it, and it brings some good results, though not as good as hunting from within a hide.

If there is a stream or lake in your area, this is a wonderful place to sit or to build a hide. Animals must drink and you'll soon find the most popular watering places by watching for tracks on the bank. But remember that many animals are nocturnal, or, at least, move about more freely at dusk and at dawn.

Beaver are wonderful candidates for your camera. They show little fear of a quiet man and they'll often cruise right up to you for a good view. In many instances I have had curious beaver inspect me for half-an-hour, swimming close, then circling away to repeat the whole thing over and over. But the dam is where you can get the best pictures. Break open a small hole in it (that's all you'll care to do, a beaver is a sound builder and it takes dynamite to blow a big hole, which you won't want to do in any case) and sit quietly nearby. Soon you'll see a riffle on the water preceded by a dark, untidy head. The beaver will coast up to the dam, swing away a couple of times, to make sure no enemies are lurking near, and then he'll go to work repairing the damage you have done. Use that camera now and you'll get some interesting pictures.

Hunting with a camera at night is another fascinating pastime that will net excellent results provided you know your area.

At such a time you should carry a good flashlight and, for insurance, a compass. Also, remember that when you are in the bush at night and are keeping still, you will hear all sorts of strange noises, fancied and real! A white-tail buck may wind you and become curious. He tries to draw you out, to make you tip your hand. He'll snort and blow softly, just out of your view. This can be a bit unnerving if you don't know what it is. A bobcat can scare the livin' daylights out of you when it screams in anger, or in affection, and a snowshoe hare, pounced on by one of these cats, or by a fox, can scream like a frightened woman.

If you're in wolf country you'll probably hear the big fellows talking, or singing, to each other. They are not dangerous in spring and summer, but it is best to keep clear of them, all the same, and don't let one get too close to you. In winter, especially if the cold has been intense, it is best not to poke about in timberwolf country. Many experienced woodsmen claim that wild animals will not attack man without provocation, but the number of documented attacks are such that it appears wild animals are not aware that they are supposed to be harmless to man!

This caution especially applies to cougar and grizzly bear territory, no matter what the season! You can still get pictures of these great animals, but don't go in there alone and DO have a rifle along, and someone who can use it! A healthy cougar will rarely attack a man, but sick, crippled or old cats can be dangerous. They can kill a full-grown elk and even a large horse and DRAG the carcass some distance. On December 17, 1924, a fourteen - year - old boy was killed by a HEALTHY tom cougar and there are other such instances on record.

As for grizzly, watch them ALL the time. Usually they wander away with a grunt or a warning snarl, but now and then some luckless man meets an angry old bear and then there's trouble. Five years ago in British Columbia I talked with two grizzly-bear victims. They lived to tell about it, but one of them has a ring of teeth marks around his head, where the bear seized him and lifted him off his feet, shaking him by the head like a dog shakes a rat.

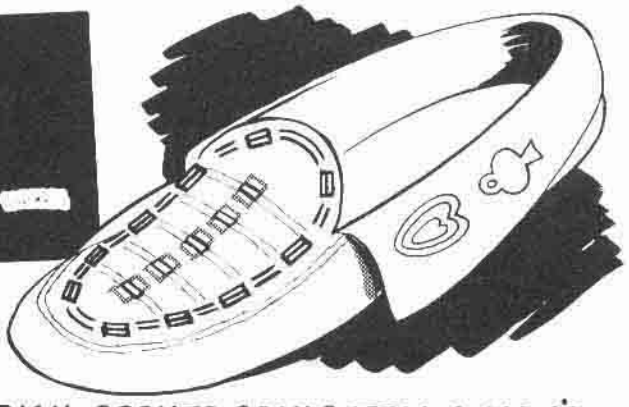
But most of you won't have to worry about these dangerous types. You'll be after the harmless species and you will learn quickly of their ways and how you can hunt them with your camera.

And this brings us to the camera itself. The range is endless and it all depends on how much you want from your hobby and how much you can spend on it. Perhaps you already have your own camera or can borrow one from your folks, if so, you're all set. If not, buy an inexpensive model to begin with and when you know how to use it, graduate to something a little more ambitious.

If you take pictures at night you should have a flashgun and these can be bought anywhere for little money. If your camera is not coupled for flash, use the "open flash" method. Put the camera on time, brief, or bulb, holding the lense open, point your flashgun at the target and flash away. When you have flashed, close the shutter and you'll have a picture.

And that's about it. Of course, there is much I could tell you about hunting with a camera.

CANADATA



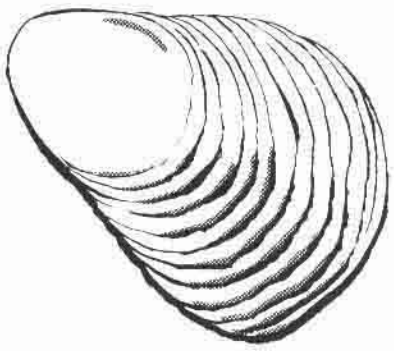
THE SALT FROM THE PERSPIRATION OF YOUR HANDS ON AN AXE HANDLE MEANS 'GOOD EATING' TO A PORCUPINE

REMEMBER NOT TO LEAVE TOOLS WITH WOODEN HANDLES UNPROTECTED

INDIAN SCOUTS COULD TELL A MAN'S TRIBE BY HIS FOOTPRINTS IN THE SNOW OR ON THE GROUND.

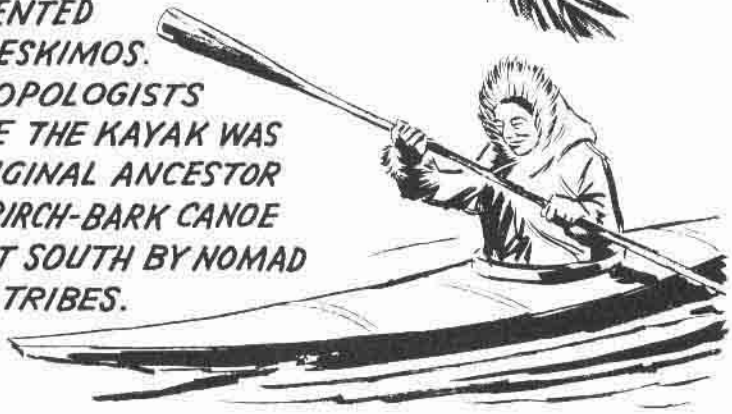
ONE DISTINCTIVE FEATURE WAS THE SOFT SOLE WORN BY EASTERN INDIANS WHILE WESTERN INDIANS HAD HARD SOLES.

AN OYSTER'S AGE CAN BE DETERMINED BY THE RINGS ON IT'S SHELL. A PERIOD OF POOR FEEDING EACH YEAR LEAVES MARKS ON IT'S SHELL



The KAYAK

WAS INVENTED BY THE ESKIMOS. ANTHROPOLOGISTS BELIEVE THE KAYAK WAS THE ORIGINAL ANCESTOR OF THE BIRCH-BARK CANOE BROUGHT SOUTH BY NOMAD INDIAN TRIBES.



The Beaver

This fur-bearing water conservationist can save land from desolation and ruin. Read how below.

by Don Woodcock

Eric Collier. That's a name that probably doesn't mean anything to you. But when you connect Eric Collier with beaver and a wise word from an old Indian woman, you have something.

You have a scheme that changed the face of the Canadian map.

There was a time when water conservation was becoming a big problem in this country. Eric Collier became concerned about it but he couldn't find a solution until the old Indian woman tipped him off about the beaver.

The Indians had long known about the beaver's part in maintaining a good watershed with his dams. But white men had been ruthlessly trapping beaver for the valuable pelts. They had upset the balance of nature.

Collier enlisted the help of a British Columbia forestry officer, who wasn't really sold on the idea, to trap two pair of mating beaver. The animals were taken to Collier's cabin at the headwaters of Meldrum Creek. Collier repaired an old beaver dam there and released his four beaver in the resulting small lake.

It wasn't long before the beaver were traditionally busy, building and raising their families and spreading along the entire watershed. Little lakes and marshes were soon reflooded by the beaver dams. Dormant plant life and waterfowl returned to the area. Muskrat moved in, followed by otter, mink, fisher and coyote. The next winter, signs of bigger game appeared when moose arrived to nibble on willow and poplar along the new shorelines.

Collier had been able to figure out the reasons for his success once he realized that the beaver loved to get into a mature stand of poplar or cottonwood. The little animals would fell a great many trees. This allowed more sunlight to reach the forest floor. So new plants and shrubs, berry thickets, young trees and pea vine soon sprang into a marvellous tangle of fresh undergrowth.

Nowadays we have watershed preserves, like Algonquin Park, where the beaver is Number One in importance as far as water conservation is concerned. He can't stand to see water go to waste. He dams up every drop of it in the pond where he makes his home.

But the real secret of a good beaver dam is that it leaks, steadily. It must leak, because the beaver does not use concrete or stone or even mud in his construction. It is this steady leaking of the beaver dam that regulates water levels downstream from the beaver colony.

You can't help wondering how many beaver would be needed to maintain a constant flow of water out of the wilds of northern Ontario into Lake Superior, perhaps thus influencing the level of the Great Lakes!

Consider a case on record where the beaver have been removed from an area, with sad results. One winter in Oregon, trappers took out almost all the beaver. It made no difference at first. But, in a few years, ponds dried up, meadows disappeared, the hay crop shrank from fifteen thousand tons to a few hundred tons, and the land became a virtual desert.

In Meldrum Creek, British Columbia, overtrapping beaver had much the same effect: the water table of the whole region sank to so low a level that cattle died in the muck of drying up lakes, trying to reach water.

This was the case that brought Eric Collier into the picture. When the old Indian woman told him, "Bring beaver back to creek," she knew what she was talking about.

And Eric Collier's beaver reclaimed a desolate land and made it live again.

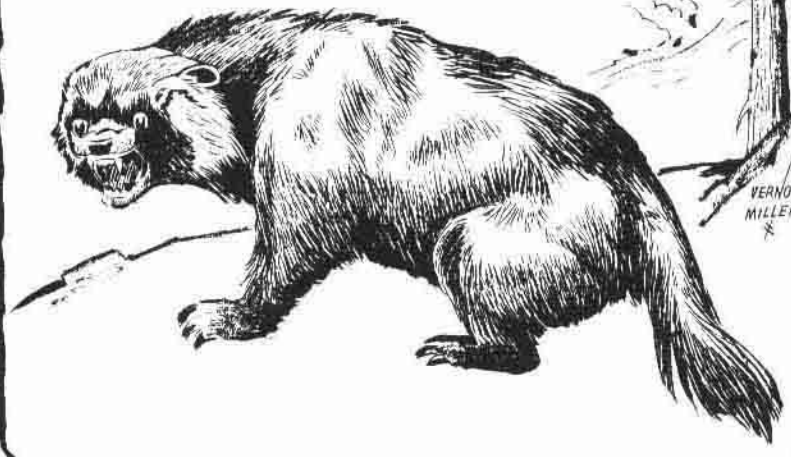
CANADATA

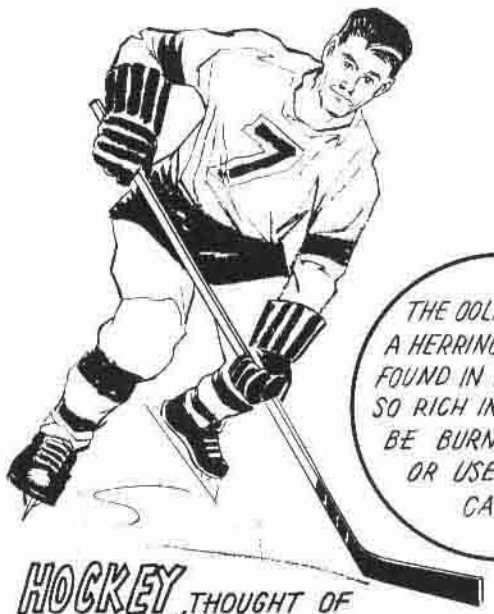
IN THE ARCTIC BATTLE AGAINST THE ELEMENTS, THE ESKIMO INVENTED GLARE GOGGLES WHICH ARE USUALLY MADE OF DRIFTWOOD —THEY HELP PREVENT SNOW BLINDNESS

THE CANADIAN

WOLVERINE

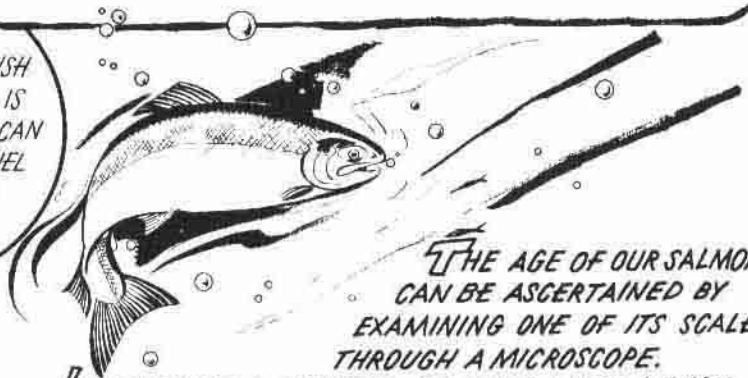
SOMETIMES CALLED THE 'SKUNKBEAR', IS ABOUT THE SIZE OF A SMALL BEAR HE STEALS FROM HUNTERS TRAP LINES AND SOMETIMES MOVES THE TRAPS FOR LONG DISTANCES. HE WILL STEAL TRAPPERS POSSESSIONS FROM AN UNGUARDED CABIN AND WILL FOUL WITH HIS SALIVA ANY FOOD HE LEAVES BEHIND....





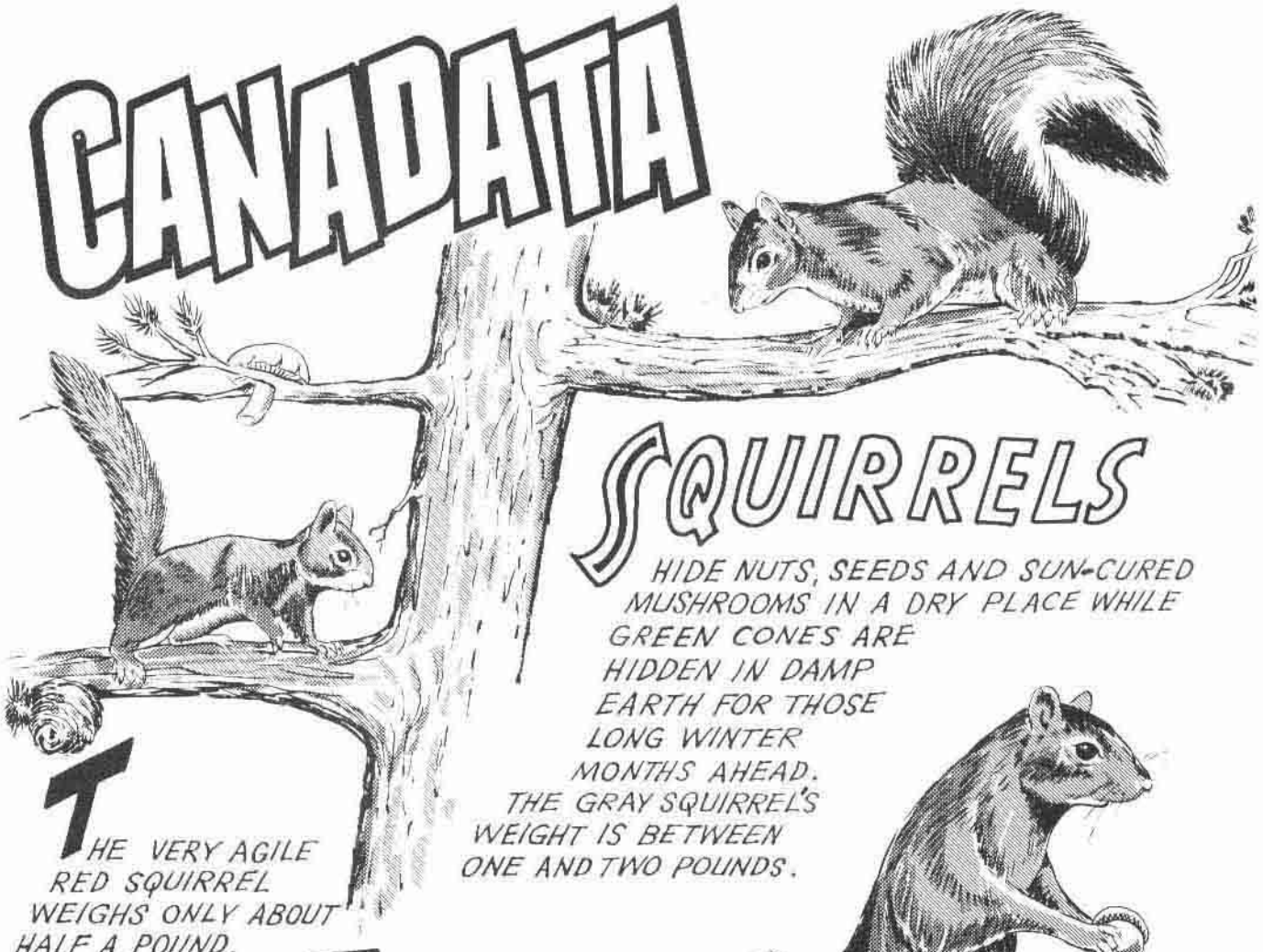
HOCKEY, THOUGHT OF AS CANADA'S NATIONAL SPORT WAS PLAYED BY THE GREEKS 3,000 YEARS AGO

THE OOLACHAN, A HERRING-SIZE FISH FOUND IN CANADA, IS SO RICH IN OIL IT CAN BE BURNED AS FUEL OR USED AS A CANDLE



THE AGE OF OUR SALMON CAN BE ASCERTAINED BY EXAMINING ONE OF ITS SCALES THROUGH A MICROSCOPE. IT CONTAINS A NUMBER OF TINY LINES WHICH MULTIPLY AT THE RATE OF SIXTEEN EVERY YEAR

CANADATA



SQUIRRELS

HIDE NUTS, SEEDS AND SUN-CURED MUSHROOMS IN A DRY PLACE WHILE GREEN CONES ARE HIDDEN IN DAMP EARTH FOR THOSE LONG WINTER MONTHS AHEAD. THE GRAY SQUIRREL'S WEIGHT IS BETWEEN ONE AND TWO POUNDS.

THE VERY AGILE RED SQUIRREL WEIGHS ONLY ABOUT HALF A POUND.

THE FOX SQUIRREL IS THE LARGEST OF TREE SQUIRRELS WEIGHING UP TO TWO & A HALF POUNDS

BIRDS AREN'T THE ONLY ONES THAT MIGRATE. SO DO OUR FUR SEALS. THEY SPEND THE SUMMER IN THE BERING SEA AND THEN SWIM THOUSANDS OF MILES TO SPEND THE WINTER ALONG THE WEST COAST OF CANADA AND THE UNITED STATES. EXHALING AS THEY SUBMERGE CAUSES THE OXYGEN CONTENT OF THE SEALS BODY TO DROP FROM 20% TO AROUND 2% AND THEIR HEART BEAT THEN SLOWS FROM 150 BEATS TO ONLY 10 PER MINUTE.

HOW–TO–DO–ITS

SNOWSHOE MAKING:

By Frank Goble, Wate

Materials needed:

A. *Hardwood.* Birch or Ash. A 10-foot three-quarter-inch by 10-inch board will be sufficient material for 9 pairs of frames 5 feet long.

B. *Rawhide.* Deer, Elk, Moose, Caribou, or Cowhide, with the hair removed. To remove the hair, soak in warm water with lye or wood ashes until the hair slips or pulls out easily.

C. *Stove Bolts.* 3 3-inch stove bolts for each snowshoe — 3″ x ⅛″.

D. *Old Boot tops,* straps, rivets for harness.

Note: Metal frames may be made by using ½″ Thin-wall tubing of the type used by electricians when wiring commercial or public buildings. One 10-foot length of tubing will make 1 pair of Bear-paw type frames.

To make the frames: Rip the board into strips ¾″ x ½″ and the desired length. Shape the frames with a small plane. They should be narrower or thinner at the spots where they will be bent into shape. The toe section should be thinned down on the top and on the insides; the heel section should be thinned on the inside only. Do not mortise the grooves for the cross-bars until after the frames have been removed from the press.

After the frames are shaped, soak or steam them in hot water until they will bend easily. (Use an old wash-boiler, or a piece of pipe which has been sealed on one end.)

FIG. 1

When the frames will bend easily, bolt them together, one stove bolt at the toe, and 2 at the heel, and place them in the press that is drawn on Figure 2 shown below. This simple press is made by using a piece of 2″ x 1″ material, about 2 feet or more in length, 2 pieces of 1″ x 2″ material to go on either side of the toe, and a 1″ x 4″ piece of material to go over the toe, and help

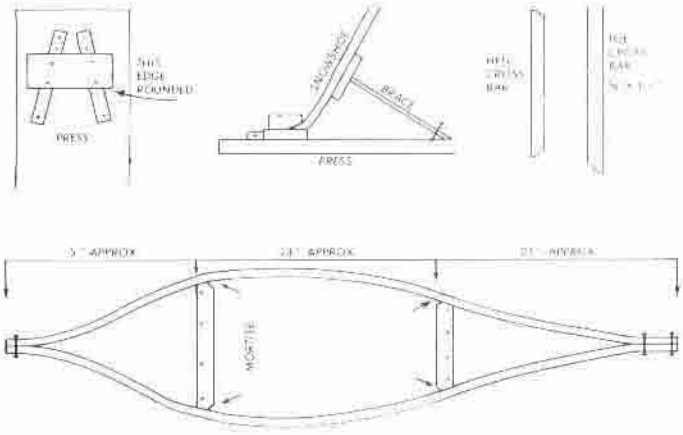


FIG. 2

control the bend. Insert the toe of the frame between the 1″ x 2″s, and raise the heel carefully until the desired bend is reached. Wedge the frame in that position, and let it dry. Make sure that the two frames have the same bend or amount of turn up. When dry remove from the press, fit the cross-pieces, sand the frames, and give them a coat of varnish or shellac. **Note: A spreader of the desired width should be wedged in each frame before they are placed in the press.** The cross-pieces are made from hardwood, three-eighths of an inch thick by 1½ inches in width, and the desired length — the length of the cross-piece governs the width of the snow-shoe. The front cross-piece should be longer than the rear one.

The next step is to drill the holes for the lanyards. These holes are drilled in pairs, each pair being about

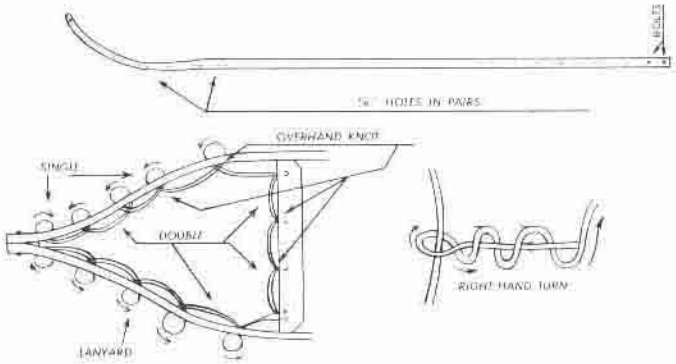


FIG. 3

2 inches from the next pair, and a pair being about ½-inch apart. A groove is cut to join each pair, just deep enough to allow the lanyard to be flush with the frame. These holes are drilled in both the heel and the toe portions of the snow-shoe, and in the cross-bars.

The lanyards should now be placed in the toes and heels of the shoe. To do this, 2 pieces of rawhide, small

enough so that one strip can be drawn through the holes drilled for this purpose are used. One end of each strip is fastened to the left-hand hole in the cross-bar by slitting that end, and drawing the other end through the slit.

(Only one strip of rawhide is actually drawn through the lanyard holes, the other one is tied in through the overhand knot made at each set of holes.) Now take the end of one of the lanyard strips, thread it through the second hole of the first pair, draw it back through the first hole of the pair, and tie an overhand knot around **both** lanyard strips. This process is repeated at each pair of holes, except at the toe and heel the lanyard is drawn through the first of the pair of holes, back through the second and straight across through the second of the pair of holes in the other side of the frame. The first process is then repeated down the crossbar. Here there is only one hole, not a pair, and an overhand knot is tied around both lanyard strips after threading one through the single hole. When the starting point is reached, the ends are tied off using a Clove Hitch. The snow-shoes are now ready to be webbed. The heel and toe webbing is done first.

The heel and toe webbing is done in exactly the same manner, and started at the same relative spot on the frame: when the toe, or heel, is held uppermost, the starting point is at the right-hand end of the crossbar (see diagram). The hide used for the toe and heel webbing should be at least ¼ inch in width before stretching.

Once again, the end is slit, and the other end threaded through. The strip is then passed across the snowshoe parallel to the crossbar, and around the lanyard on the left side. **It is important that a right-hand turn be made each time when coming back** off the lanyard, that is, from left to right around the strip of webbing. From this point, the webbing is carried to the toe (or heel), of the shoe, a right-hand turn with several turns around itself being made, and thence down to the lanyard to the left of the starting point, where once again a right-hand turn with at least three wraps is made. From here the webbing is carried to the lanyard on the right side of the shoe, around the lanyard with a right-hand turn, wrapped twice around itself, and then carried across to the left side of the frame, parallel to the first strip of

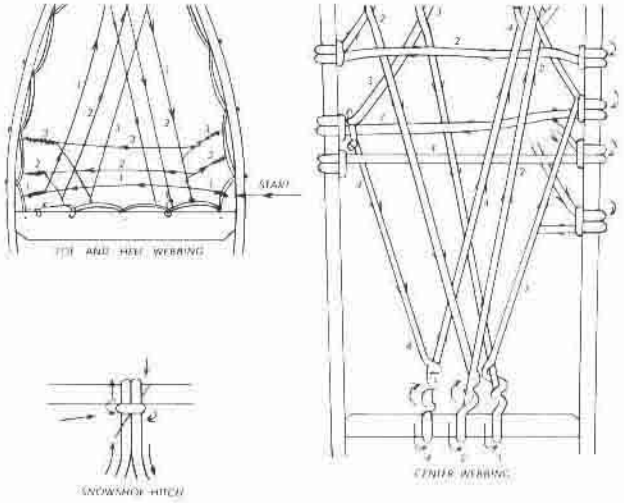


FIG. 4

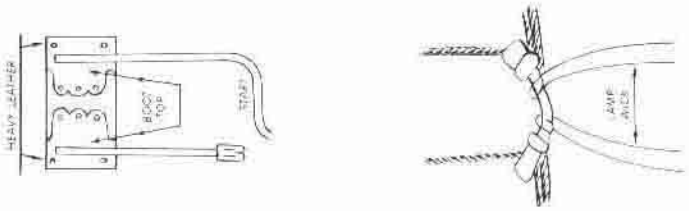


FIG. 5

webbing. From here it is brought down to the lanyard in the crossbar, and from there up to the right side of the toe, but down from the spot where the first webbing was fastened. It then crosses over to the left side, and is brought down to the lanyard on the crossbar to the left of Number 1 (see the diagram). This process is repeated until the filling is all in.

The hide for the webbing for the centre filling is much wider than for the toe and heel. It should be cut about ¾ of an inch in width. The centre webbing is started from the right side of the frame, and far enough back from the crossbar so that the toe of the boot of the person wearing the snow-shoe can dip down through the hole without touching the crossbar.

Once again, slit the end of the strip of centre webbing, and draw the other end through. Make 2 complete turns around the snow-shoe, from one side to the other, at this point. This will give 4 strands of webbing across the shoe. On the last turn, a false Clove or Snow-shoe Hitch is made, first on the left side, and then on the right side. From the right side the webbing is brought down about an inch, passed around the frame, and the Snow-shoe Hitch made, with the free end being on the side to the toe crossbar. It is then taken up over the crossbar, a Snow-shoe made after making 2 turns around the crossbar, and it is then wrapped around itself down to the first set of cross-webbing. (Note: instead of making 2 turns around the crossbar, the webbing can be taken down around the first set of cross-webbing, and then back around the crossbar before the snow-shoe hitch is made, after which

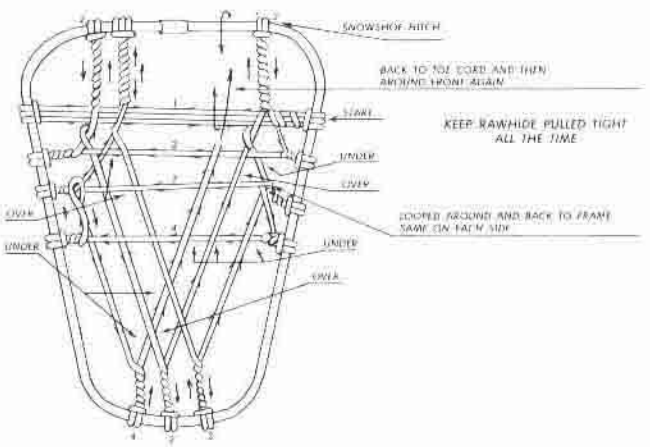


FIG. 6

it is wrapped around itself). It is then taken to the centre of the rear crossbar, brought back, with a right-hand turn and 3 twists, brought up to the left side of the toe-opening, over the toe-crossbar, the same process repeated as for the opposite side of the toe-opening. From here it is brought down to the left side of the frame, around twice and tied with a snowshoe hitch, and then across to the opposite side of the shoe. This process is repeated until the webbing is filled in completely.

To make Bear Paw Snowshoes:

Materials: 1 10-foot length of ½-inch thin-wall electrician's tubing, 2 ½-inch thin-wall tubing couplings, sufficient raw-hide to web the shoes.

Tools: An electrician's pipe bender, an electrician's ½-inch crimper.

Method: To make a pair of frames 16" wide by 23" long: Cut the 10-foot length of tubing in half. Mark the centre of the halves. With the pipe bender bend the tubing into the shape of a Bear-Paw frame with the 2 ends at the front or toe of the frame. Slide the couplings over the ends, and crimp into place with the crimper. The frame is now complete.

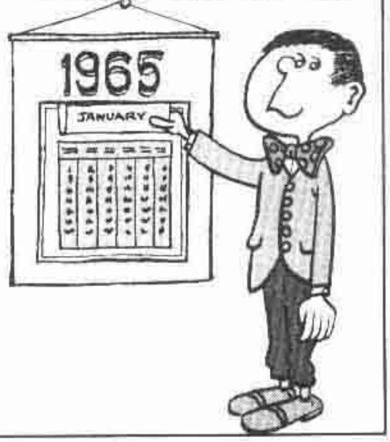
Webbing: The webbing is the same as that for the centre filling of the trail snowshoes, except that one or two additional turns are made around the rawhide strip when coming back off the frame. It is also necessary to loop a strip of rawhide across the top of the toe stays to prevent them from sliding sideways.

When the webbing is complete, allow it time to dry completely, and then give several coats of good varnish. Varnish the rawhide each time the snowshoes are used.

After the filling in the snowshoe is in, start at the left-hand side of the toe cord with a strip of rawhide, wrap around the toe cord to the first toe stay, up the toe stay, across to the second toe stay, to the centre of the frame between the toe stays, across to the next toe stay, around it once, across to the last toe-stay, down it to the toe cord, and around the toe cord back to the starting point on the left side, where it is tied off with a Clove Hitch.

PUZZLE & GAME PAGE

Problems with the Year



Ever since it was discovered that 1961 read the same upside-down, there has been a great interest in the number of the year. Here are three problems about our new year of 1965. Consult your calendar, and see if you can solve them!

1. What will happen in 1965, that last occurred in 1960, and will next take place in 1971? This makes people who are paid on Fridays quite happy.
2. Why is 1965 a good year for people who are superstitious?
3. What have these years in common: 1659, 1785, 1938, 1965, 1974 2199?

Pairs in the Dark

(a) An old problem asks how many socks you would have to take in the dark out of a drawer containing half black and half white socks, to ensure that you have a pair of the same color. Try it!

Here are two variations:

(b) Suppose the drawer was full of rubber gloves; how many are needed to make certain you have a right-hand and a left-hand?

(c) In a cupboard are six identical pairs of shoes, except 3 pairs are brown, and 3 black, and they are all jumbled up. How many shoes should you take out in the dark to make one pair of the same color, assuming you can't tell right from left, without a light?

Poor Pete!

Pete offered to go shopping for his mother, but that woman writes the craziest shopping list you ever saw. Can you give poor Pete a hand at figuring it out? Everything can be found in the meat, fruit, and vegetable sections.

1. A Middle Eastern country
2. An indoor game played with rackets and a ball
3. An amateur radio operator
4. Day, month, and year
5. A sore spot on a toe
6. An English essayist
7. An inhabitant of Tangiers
8. A Hallowe'en color
9. An inhabitant of Hamburg
10. The judge who claimed to be "the only law west of the Pecos"

Read the answers in your mirror!

Answers: 1. Turkey 2. Squash 3. Ham 4. Date 5. Corn 6. Bacon 7. Tangerine 8. Orange 9. Hamburger 10. Bean

(a) 3 (b) 2 (if both one hand, turn one inside out) (c) 7

1. 53 Fridays 2. Only one Friday the 13th 3. The digits of each year add up to 21.

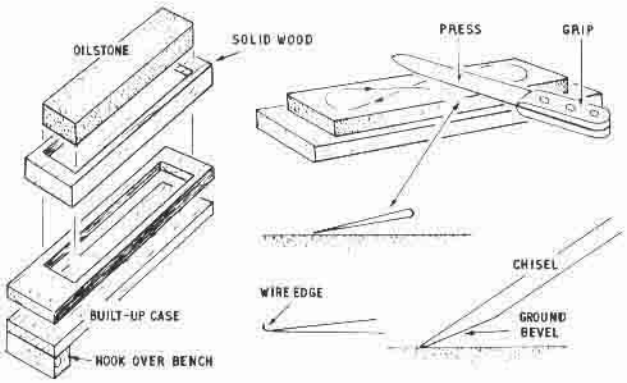
SHARPENING TOOLS

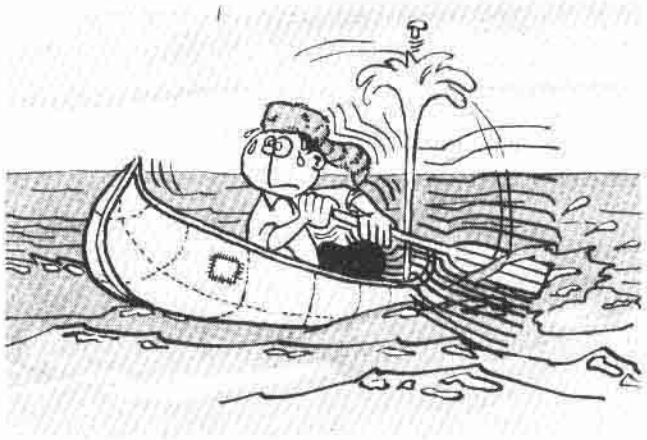
A craftsman is proud of having sharp tools. Chisels and plane blades cannot do their jobs properly if they are not sharp. Although very blunt tools may need grinding, most sharpening is done on an oilstone. Grinding leaves a coarse edge, which has to be finished on an oilstone.

Oilstones are made in several grades. If you only have one get a medium grade. Make a case for it, either from solid wood or by building up, and a cover for it. A dirty stone cannot do its job properly. Use a thin lubricating oil or even kerosene. Never use the stone dry — this will wear it away unevenly.

Hold a knife so that the blade is tilted slightly, with one hand on the handle and the fingers of the other hand spread out to apply pressure. The hand on the handle, must keep the blade at the same angle as it is rubbed along the whole length of the stone. After working on one side, change over and do the other side. Feel towards the edge. If it is sharp there will be a roughness indicating a wire edge clinging to the blade. Slice across a piece of scrap wood to remove this.

Sharpen a chisel or plane blade only on the bevelled side. When a wire edge can be felt on the other side, give a few rubs absolutely flat on the stone to remove it.





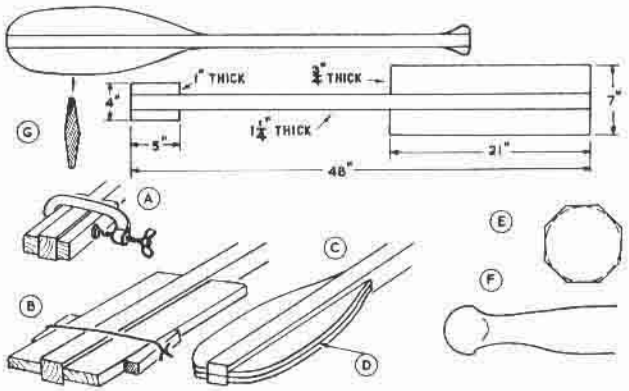
how to make a PADDLE

Modern waterproof glues allow parts to be built up instead of cut from the solid wood. Satisfactory paddles can be built up more easily and economically by this method. Sizes will depend on needs, but a small paddle is shown as an example. It most easily made from a soft wood, such as spruce, although a harder wood, such as maple, would be better for hard use.

The shaft starts as a piece about 1¼ in. square. To this, pieces are glued to make up the width for the blade and the grip. If you have a clamp, it can be used (A), although string and wedges will do (B), to hold the joints while the glue sets. To keep the paddle symmetrical make a card template to mark each side (C). Cut to this outline with a jigsaw or a coping saw. Pencil a centre line around the wedges of the blade and the grip (D). Use this line as a guide when tapering off the thickness. Taper the blade to within about ⅛ in. of the line each side. This can be done with a plane or a Surform tool.

Make the shaft round in stages. Plane off the corners to make it approximately octagonal (E). Remove these angles to make it eight sided. Hollow the sides slightly each side of the grip (F). This can be done with a chisel, spokeshave or curved Surform tool. Work the parts approximately to shape. Let the blade be flat in section at the end and diamond-shaped farther up (G). The grip should be well-rounded.

Change over to a coarse sand paper, work across the grain and around the shaft, then finish lengthwise with finer paper. Finally, apply several coats of marine varnish.

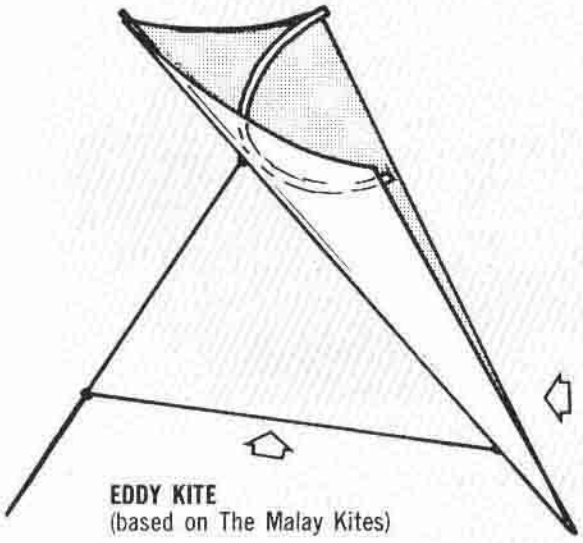


KITES KITES KITES KITES KITES

by Eric Franklin

In flying a kite, you are practising a sport which is known to be over 2,000 years old but which has never lost its popularity. A man named Archytas is recorded as having flown a kite in Ancient Greece about 2,400 years ago and the Chinese invented kites independently around about the same time. In Japan, kite flying is a national sport and exciting kite battles are fought with special kites and kite lines.

You will also be following in some famous footsteps. In 1752, Benjamin Franklin flew a kite in a thunderstorm to prove the electrical nature of lightning. In 1901, Marconi used a kite to lift an aerial wire in Newfoundland and received the first radio signal ever sent across an ocean. Lord Baden-Powell, when a Major in the

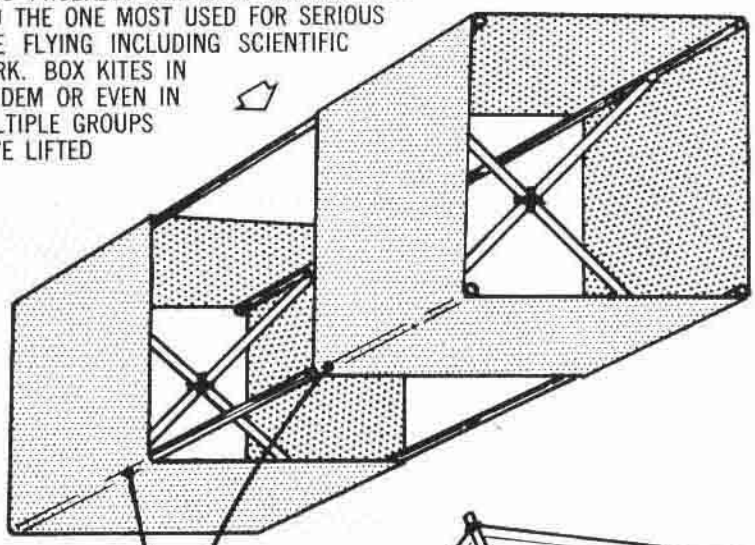


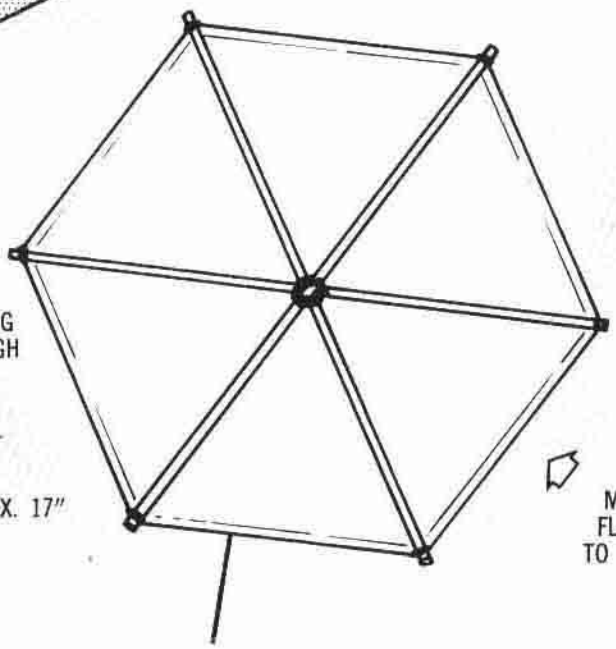
EDDY KITE
(based on The Malay Kites)

CROSS BAR BENT INTO CURVE. SPLIT BAMBOO SOAKED IN HOT WATER WILL BEND. TIE EXTREMITIES TOGETHER TO MAINTAIN BEND. THIS KITE CAN USUALLY BE FLOWN WITHOUT A TAIL.

BOX KITE

IT IS PROBABLY THE BEST KNOWN TYPE AND THE ONE MOST USED FOR SERIOUS KITE FLYING INCLUDING SCIENTIFIC WORK. BOX KITES IN TANDEM OR EVEN IN MULTIPLE GROUPS HAVE LIFTED SURPRISING WEIGHTS INTO THE SKY. FOR YOUR FIRST ONE, USE BAMBOO CANES 3'0" LONG. CUT TWO STRIPS OF FINE COTTON CLOTH 48" LONG BY 12" WIDE, LEAVING ENOUGH EXTRA FOR HEMS. THE CONSTRUCTION IS OBVIOUS FROM THE DRAWING: SEW IN SMALL POCKETS FOR THE ENDS OF THE CANES. MAKE THE CROSS STRUTS TO FIT APPROX. 17"



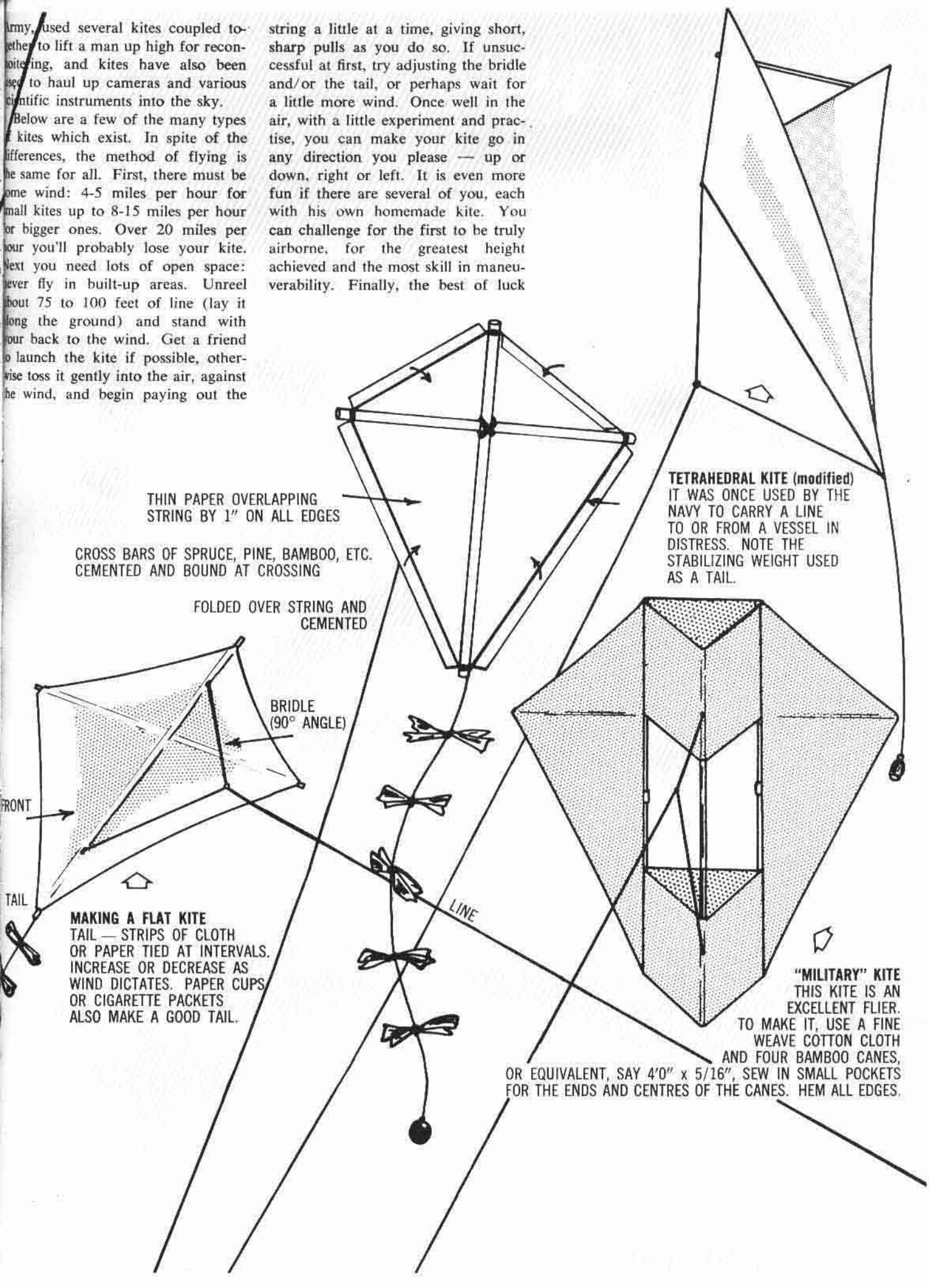


HEXAGONAL FLAT KITE

MADE SIMILARLY TO CONVENTIONAL FLAT KITE. ATTACH MULTIPLE BRIDLE TO FOUR EXTREMITIES AND THE TAIL TO THE OTHER TWO.

Army, used several kites coupled together to lift a man up high for reconnoitering, and kites have also been used to haul up cameras and various scientific instruments into the sky.

Below are a few of the many types of kites which exist. In spite of the differences, the method of flying is the same for all. First, there must be some wind: 4-5 miles per hour for small kites up to 8-15 miles per hour for bigger ones. Over 20 miles per hour you'll probably lose your kite. Next you need lots of open space: never fly in built-up areas. Unreel about 75 to 100 feet of line (lay it along the ground) and stand with your back to the wind. Get a friend to launch the kite if possible, otherwise toss it gently into the air, against the wind, and begin paying out the string a little at a time, giving short, sharp pulls as you do so. If unsuccessful at first, try adjusting the bridle and/or the tail, or perhaps wait for a little more wind. Once well in the air, with a little experiment and practise, you can make your kite go in any direction you please — up or down, right or left. It is even more fun if there are several of you, each with his own homemade kite. You can challenge for the first to be truly airborne, for the greatest height achieved and the most skill in maneuverability. Finally, the best of luck

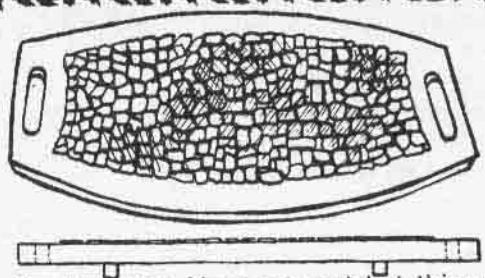


MAKING A FLAT KITE
TAIL — STRIPS OF CLOTH OR PAPER TIED AT INTERVALS. INCREASE OR DECREASE AS WIND DICTATES. PAPER CUPS OR CIGARETTE PACKETS ALSO MAKE A GOOD TAIL.

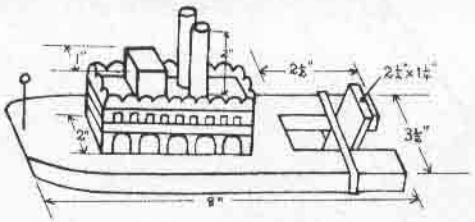
TETRAHEDRAL KITE (modified)
IT WAS ONCE USED BY THE NAVY TO CARRY A LINE TO OR FROM A VESSEL IN DISTRESS. NOTE THE STABILIZING WEIGHT USED AS A TAIL.

"MILITARY" KITE
THIS KITE IS AN EXCELLENT FLIER. TO MAKE IT, USE A FINE WEAVE COTTON CLOTH AND FOUR BAMBOO CANES, OR EQUIVALENT, SAY 4'0" x 5/16", SEW IN SMALL POCKETS FOR THE ENDS AND CENTRES OF THE CANES. HEM ALL EDGES.

make these gifts for Christmas



Here's a tray Mom can put hot things on. Make it from a piece of ¼-in. plywood 16 in. by 10 in. Cut out handholes with coping saw, sand them smooth. "Legs" are two pieces of ½-in. by ½-in. pine, glued to bottom. The top is covered with leftover ceramic tile, available from a dealer. Try making an abstract pattern in two colors (we like blue and green). Glue down with good white glue, fill cracks with grout from your hobby shop. Finish the wood with lemon oil.

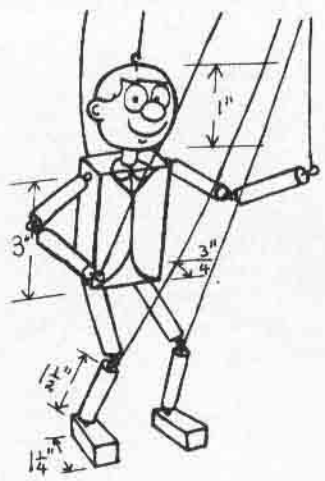


Your young brother will like this river boat. Make it from pine. The superstructure is two matched blocks rounded at one end. Pilot house and smokestack are attached to top. Nail superstructure together. The paddle-wheel is ¼-in. plywood notched on both sides at the center to hold heavy rubber band in place. Also notch sides of vessel for same purpose. Now paint the ship in bright colors, add details in black. It's ready to sail.

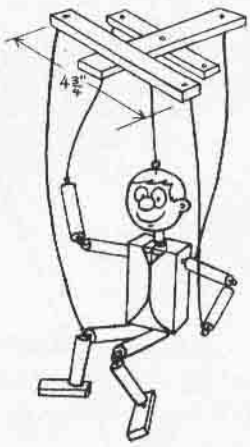
Christmas is a lot closer than you think. This year, instead of rushing around buying presents for your family at the last minute, try something new. Make the presents yourself. Your distinctive gifts will be appreciated even more than store-bought ones, and will give you satisfaction, knowing you made them yourself.

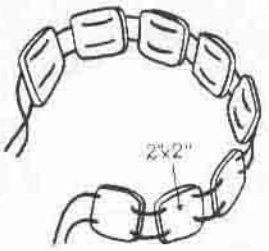
On these two pages, we have included different types of presents, made from different materials — something for every handyman. Some are fairly simple to make, some more difficult.

You've still got enough time before Christmas, so why not start now? Your biggest moment this Christmas will be seeing the happy faces of your family when they open the gifts you made yourself.



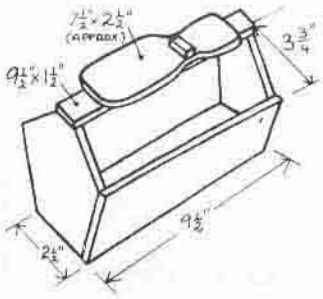
Kid sister will dig this marionette. The body is ¾-in. pine, with a hole for ¼-in. dowel neck. Head is 1-in. dowel. Holes are drilled in side and end of head for nose and neck. Feet are small blocks of ½-in. stock with a ¼-in. hole in one end. Legs and arms are short lengths of ¼-in. dowel, joined together and to body by linked eye screws. Controls are three lengths of ½-in. plywood. Two of these pieces are fastened together in center to form cross from which lines run to head, back and arms. The third piece remains free of the other two and controls legs. The marionette can now be painted. Then it's ready for operation.



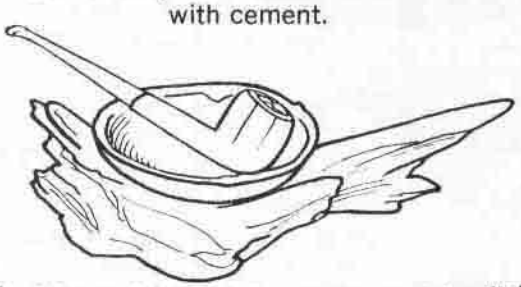


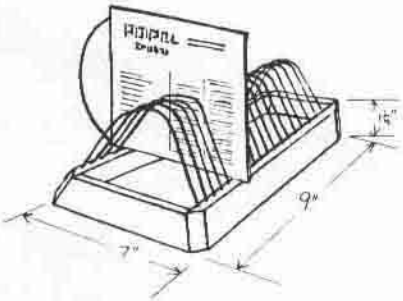
Here's a Mexican belt for your brother. It's made by fastening blocks of ¼-in. plywood together with strips of leather. To determine number of blocks needed, divide waist measurement by 2½. Holes are drilled in corners of blocks, which are then sanded. Mexican designs (right) can be made with crayon, India ink or wood burner. Then coat blocks with clear varnish or shellac. Make a wire clasp (left) from a coat hanger. Then lace the belt and clasp together. Space blocks evenly and fasten with a small tack holding the lace to the center of each block. All finished, amigos.

This shoeshine kit should really please Dad. Make handle, heel block, ends and bottom from ½-in. pine. Sides are ¼-in. plywood. Nail ends to bottom, fasten heel block to handle, nail handle to ends. Fasten sides on with nails and wood glue. Finish with stain, shellac or varnish. Sound easy? It is.

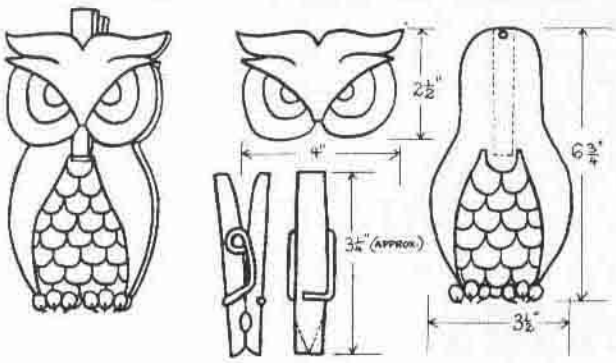


This ashtray for Dad requires unusual materials, but if you can get them, the result is worth it. Flatten bottom of piece of driftwood, scoop out nest on top. Test seashell to make sure it doesn't leak, then fasten to driftwood with cement.





A record stand for your sister can be made from ¾-in. pine and nine wire coat hangers. Cut ends and base, drill 18 holes ½-in. deep on top of sides. Sandpaper sides and ends. Cut coat hangers in half, bend to shape. Glue and nail base together, insert wire supports. Finish with stain, shellac or glue. A real beauty.



This owl can hold Mom's recipes for her! Make head and body from ½-in. plywood, make markings with India ink or woodburner. A wooden clothespin is separated, the half with the spring nailed to the owl's body in position shown by dotted line. Drill hole in top of body for hanging on wall. Nail other clothespin half to back of head. Then hold spring open with screwdriver and reassemble clothespin.

So you want to become a Ham

Nearly every day, you can read in the newspaper of a "Ham" (amateur radio operator) picking up a distress call from a ship, relaying an urgent request for drugs, or working twenty-four hours a day during a hurricane. You've probably wondered what kind of people become "Hams", or how you could become an amateur radio operator.

"Hams" come from all walks of life. The boy next door may be one. Or the doctor down the street. But they all have one thing in common — a great interest in radio.

Some like to tinker with new ideas. They have invented many new developments in radio over the past forty years. Right now there are two ham-designed-and-constructed satellites going around the earth.

Some others maintain a regular "traffic net". They can pass a message from you to a relative or friend across Canada.

Continued on next page

You have to get a Ham licence

To operate a radio transmitter, you must first have a licence. In some ways it would be nice to just set up a transmitter and start. But if everybody did the same thing it would be like trying to park twenty or more cars in the same parking space. Nobody would get parked. Wave bands are limited just as parking spaces are.

To get a licence you have to pass an examination. The Department of Transport wants to be assured that you know how to operate a transmitter properly. An improperly operated transmitter can emit signals on several different wave bands at the same time. What would your neighbours say if your voice suddenly came on their TV set in the middle of a hockey match?

A licence examination is not too difficult. A little effort and a few months study and you can be ready. Minimum age limit in Canada is fifteen.

To study for the licence, find out exactly what you have to do in the exam.

Continued on next page

You want to be a Ham

Still others specialize in "being prepared" for emergencies when regular communications fail.

Apart from being useful, amateur radio is a wonderful hobby. All "hams" like to "get on the air" and chat with friends all over the world. You never know who you'll meet when you switch the set on. Some morning you might turn on your set and hear a friend from South Africa, as clear as if he was next door. Another day it will be some fellow from Australia!

This is great you say, but you can't afford it.

Well, it is true some "hams" do have over $2,000 worth of equipment. But chances are they took many years to accumulate it. You can start with as little as $25.

Get a Ham Licence

Get a copy of the syllabus from the Radio Licencing Branch of the Department of Transport. It is in three parts.

Part one covers a knowledge of Radio Regulations such as what frequencies you are allowed to use, maximum power, etc. The syllabus will tell you how to get this knowledge.

Part two covers the technical side of radio equipment — circuits, power supplies, antennas, etc. There are a number of ways to get this information. Check with your local radio club. It may be organizing a course for beginners. Your public library or local hobby shop should be able to tell you if there is a local club, and who to get in touch with. Or you may know a local "Ham" who would be willing to help you. Or you can study at home from a book.

The information from the Department of Transport will suggest some books. Two very good books are: "Understanding Amateur Radio" published by the American Radio Relay League, Newington, Conn. Canadian price is $2.80. And "Radio Amateur licencing Handbook" published by Radio Telephone Directories of Canada Ltd., 119 West Pender Street, Vancouver 3, B.C. Price $2.00.

To pass the third part of your exam you must be able to send and receive Morse Code at 10 words per minute. Start learning Morse Code by the various characters of the Code. Experts say you should learn by the sound, e.g. "dit-dah" for A, and not "dot-dash".

Once you have learned them practise, practise, practise. Get a friend to help you. Rig up a simple key, buzzer and battery combination. Say the signs you see in Code as you walk along the street.

The official station of the American Radio Relay League sends out practise sessions nightly at 9.30 p.m. E.S.T. four nights a week. They start at only five words per minute and go to 7½, 10, and 13. If you can borrow a communications receiver, this will do the job.

Keep working at the Code until you can send and receive 13 words per minute. Then, when you're nervously sitting for the exam, 10 w.p.m. will seem quite slow and your confidence will be restored.

When you are reasonably happy with your knowledge get in touch with the local Radio Inspector. Fix a time and place for your examination. The Inspector will probably let you take your exam in the evening or on a Saturday if necessary. It costs 50 cents to write an exam. A station licence, renewable each April 1, costs $2.50.

It usually takes three to four weeks for your licence to arrive after you have passed your examination. You must not transmit until you have your licence in hand, displayed by your set for all to see. Use the time to start getting your station together.

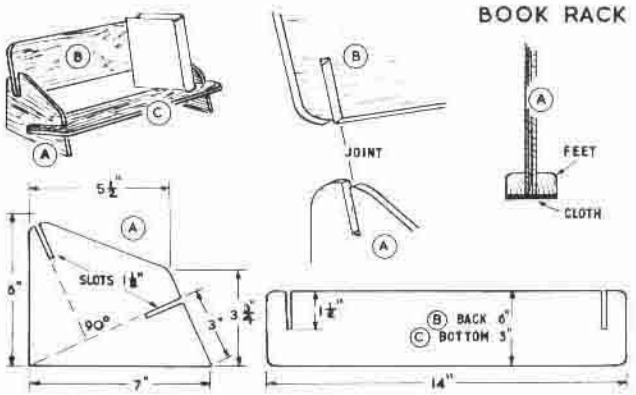
a take-down book rack

This is a book shelf which will hold a dozen or more of your favourite volumes on a table or beside your bed. When out of use it takes apart and packs flat. It is also the sort of thing that almost anyone would like as a present. All four parts may be made from ¼-in plywood.

The ends (A) are the important parts. They should match each other and the slots for back and bottom should be at right angles to each other — you can check this with a book if you do not have a try square. Cut the sides of the slots with a fine saw and chop out the ends with a chisel. Each slot should be just wide enough to make an easy fit on the thickness of the plywood.

The back and bottom may be any length and width, but the sizes shown suit books up to about 9 in. by 6 in. The two parts are the same, except that the back (B) is wider than the bottom (C). Mark out the slots together so that they match. If you have a vice or clamp to hold them they may be sawn together.

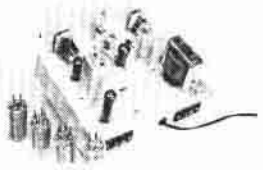
Round all corners and edges thoroughly with glasspaper. Make a trial assembly, then finish the parts with paint or varnish. A refinement is to add feet by putting strips each side of the ends. To stop the rack sliding on a polished table top, cloth or rubber can be glued to the undersides of the feet.

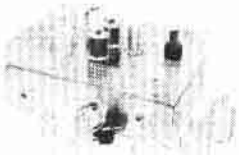


HOW TO BUILD A HAM STATION

The last issue of CANADIAN BOY told you how to get your "Ham" operator's licence. You have probably also been busy thumbing through catalogues of equipment. If you're appalled at the cost of some of the equipment illustrated, don't worry. Maybe later on you'll be able to afford it. In the meantime, you'll want to get ANY sort of equipment and GET ON THE AIR as soon as possible *after* you've received your licence.

Don't make the mistake of getting a powerful transmitter but only a poor receiver. There is no point in putting out a strong signal if you can't hear replies. Get the best receiver you can afford. Even a cheap one or two tube transmitter can, when conditions are good, reach around the world. And when conditions are bad, all the power in the world won't do you any good.





You can pay around $500 or more for a really good receiver. If you do have $150 upwards, you can consider buying new equipment in kit form and building it up yourself. Buy a copy of one of the ham magazines, QST, CQ or 73 and write for a few catalogues. Most of the advertisements quote prices in American currency and you should add about 50% of these prices to get the price you would have to pay in Canada, after duty, sales, etc.

But even if you only have $25, you can still have a station! You'll have to be a little more selective and, perhaps, more patient. Ask your local ham or club to help you obtain a good secondhand receiver. Unless you're a very good technician, don't attempt to build your own receiver; it is a little too difficult. Study the advertisements. You can buy some good surplus army sets very cheaply still. A little work and you'll have almost as good a receiver as the man who has spent ten times as much as you. Yours will just not be as versatile. The book referred to you earlier, "Understanding Amateur Radio" gives very detailed information on adapting these receivers for amateur work.

Continued next page

This book also shows you how to make a very good transmitter with most parts coming from an old television set. The most important thing to look for in the set is the condition of the main power transformer. This is a most expensive thing to buy. You can tell if it is burnt out both by its appearance and smell. There is a most unmistakeable smell about a burnt out transformer.

The output of your transmitter depends on this transformer. If you get a good one, giving about 700 volts on the secondary winding, it will be sufficient to power a 100 watt transmitter for immediate use on CW/(Morse Code) *and*, maybe, also a modulator later on, when you are allowed to use your voice.

There are any number of other useful parts in a TV set — resistors, capicitors, tube sockets and, sometimes, the tubes themselves. Ten to one, you'll find a use for everything eventually. All 'hams' accumulate spare parts in their "junk boxes". Once you're on the air you'll hear them asking each other for a certain tube, or capacitor or something and almost certainly someone comes up with what they're looking for.

Take a little care in dismantling the TV set and you won't wreck anything. Avoid, if you can, printed circuit sets. Almost certainly you'll ruin something in trying to unsolder it.

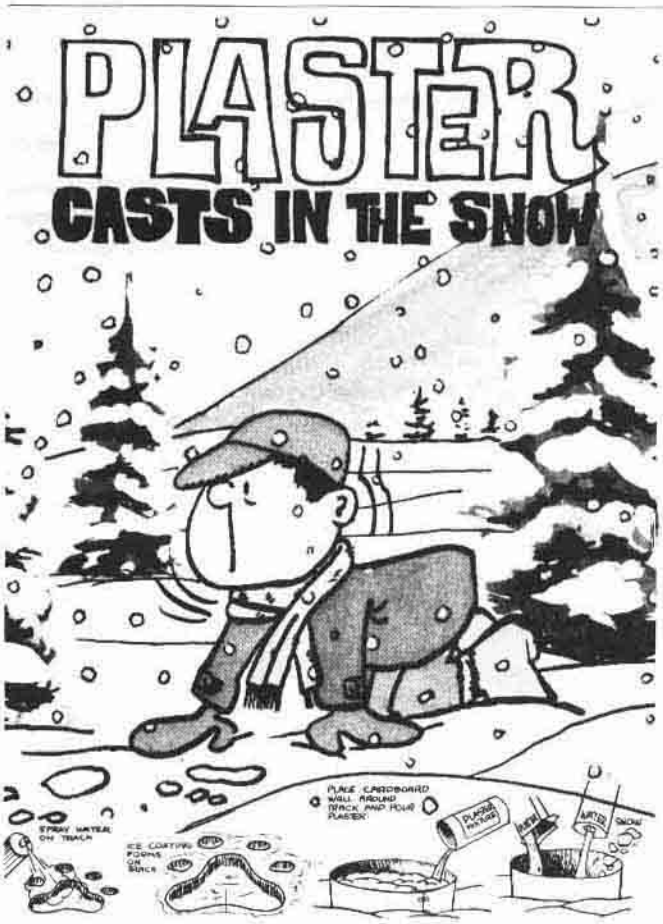
Very often, the power supply — transformer, rectifier and filter — can be used "as is" if you don't mind appearance too much. If you do, it is a simple matter to re-construct it on another chassis.

The pictures show a small single band portable transmitter for local working built up almost entirely from a "junk box". The power supply not shown) is separate and was taken — with the exception of the rectifier tube — from an old broadcast receiver of about 1935 vintage. The whole thing cost less than ten dollars and most of this was for the chassis and a new rectifier tube. The rest was accumulated or scrounged from ham friends. Output is about 10 watts a bigger transformer would probably double this. It operates on both CW/(Morse Code) and AM (Voice). The reason why the power supply is separate — apart from space — is to make it a dual purpose one, so it can operate either from a 12v car battery or from the mains. Next step is to make a matching receiver.

Once you've got a transmitter and a receiver, the next step is an antenna. An impressive rotary antenna up on a sixty foot tower *is* efficient and does get your signal out, but almost any piece of wire strung over the roof or round the attic and used with an antenna tuner, will enable you to work 'locals'. Lots of apartment dwellers, up on the fourth or fifth floor who are not allowed to erect antennas on the roof, hang thin wire out of the window.

CAUTION: — BE CAREFUL. Remember that both your transmitter and receiver use high voltages which could kill you. Play it safe and *always* remove the main plugs *before* you take the cover off the set and dig around the inside. Even then wait a moment or so for the filter capicitors to discharge.

Earlier on, I mentioned a book entitled "Understanding Amateur Radio" published by the American Radio Relay League of Newington, Connecticut and obtainable via your local bookseller for Can. $2.80 or thereabouts. This is money well spent. If you "go by the book" you can't go wrong. It has everything you, as a beginner will want, both in studying for the examinations (excepting the Canadian regulations, of course) and in buying/making/setting up a station.



That's right. You can make perfect plaster casts of animal and bird tracks in the snow.

Here's what to do. Spray the track with a fine spray of water from an atomizer, a plastic squeeze bottle, or even a small spray gun. You have to be careful here so that you don't melt the snow or break down the edges of the track. Do this several times so that you get a good coating of ice on the track. Then place your cardboard ring around the track and hold into position with paper clip or twig.

Now mix up your plaster to a pancake batter thickness. Here's a tip. Mix snow with your water and plaster to lower the temperature of your mixture. Pour it into the track and allow the plaster to harden. Remove the cast from the track. If you have followed the instructions carefully you will find that you have a track you will be proud to hang in your bedroom.

You will be surprised at the amount of wild life that still roams the woods at this time of the year. Plan a hike soon and try your hand at making plaster casts in the snow. Here's what you'll need:

1. Plaster — about one pound per Scout. Carry it in a plastic bag.
2. Tin for mixing.
3. Atomizer or spray gun.
4. Cardboard strips.

When you get the cast home paint the track so that it stands out from the rest of the plaster. On the back, letter in the name of the track, where it was found and the date. You can soon build up a fine collection of tracks for identification purposes.

HOW TO MAKE A PINHOLE CAMERA

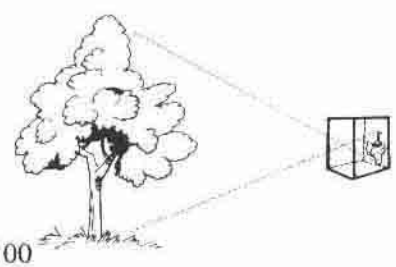
When you make a pinhole camera, you go back to the beginning of photography. The first camera was used in the 11th century; it was called the camera obscura. Photographs weren't made with this ancestor of today's camera. Actual photographs weren't made until 1816.

But the camera obscura is the same as our pinhole camera. It consisted of a darkened room or tent. It had no windows other than a tiny hole in one wall. People had found that a beam of light shining through the hole would reproduce a picture scene outside.

It worked best when used to observe an eclipse of the sun. Any other object, say a tree, would be transmitted on the wall **upside down.** The sun, being round, could be viewed comfortably and without harming the eyes.

The diagram shows why the images were upside down. Cameras today still form images upside down.

Think of your pinhole camera as a camera obscura or as a darkroom in your house with the window covered with a black cloth. In the centre of the cloth is a tiny, clean-cut hole. On the wall behind the window you'd see a reproduction of the scene outside . . . except for one thing. Can you guess?



It would be upside down.

First step: Paint the complete interior of your box flat black; don't use enamel.

This prevents light rays from reflecting or bouncing around inside the box spoiling the picture. We want the image concentrated on the film.

Second step: The next important operation, and perhaps the most important of all, is making the pinhole. It must be clean-cut and smooth. Even the tiniest jagged section will interfere with the light as it shines through. This is called diffraction.

The smooth hole must be cut in thin material. The cardboard box is too thick and impossible to cut smoothly.

Ideally a small square of thin brass should be used, but it is difficult to locate. I used the metal top of a peanut butter jar.

Here's how to prepare it. Borrow your father's flat punch (not a centre punch) and carefully tap a small bump in the centre of the lid. We want the metal to be thin where we'll punch the hole so rub the bump with a fine file until it is level.

You'll have no trouble shoving a large sewing (not a darning) needle through the thin metal. But shoving the needle through will raise a burr on the metal. Give the burr a couple of light strokes with the file. Then to make it smoother, rub with a fine oil stone.

If you have a magnifying glass, examine the hole. It should be smooth and cleanly cut. It probably will be a bit rough, so carefully slide the needle through again and rub the fine burr with the oil stone. Repeat until the hole is smooth and clean.

Third step: Paint the metal flat black. Cut a hole in one end of the box about two inches square. Glue the metal over this hole, but centre the pinhole on the end of the box.

Tape a small flap of black art paper securely over the pinhole to act as a shutter.

Open the box and mark the end panel opposite the pinhole with pencil. Draw and centre diagonal lines on the pencil mark. Using these as guide lines, draw a rectangle the size of the film (2¼ x 3¼ inches). Place four small pieces of Cellophane tape at each corner so you'll be able to feel where to place the film in the dark.

To load the camera, you must be in a completely dark room. A clothes closet with cracks and keyhole blocked will do.

The light-tight box of film contains 25 sheets. The box is opened **in the dark,** a sheet of film is removed and the lid replaced. Film has two sides, one more sensitive to light than the other. The sensitive side must face the pinhole.

How do you tell in the dark which side is which? Easy. You can feel the notches cut into the top, right corner of the film at the factory. Place the film in the camera, holding it in your right hand with the notches at the **top, right corner.** Fasten it in your camera with Cellophane tape on the corners.

Close your camera. Stick black paper along the seam of the box lid to make certain light can't leak in.

Your camera is based on the earliest camera known. We can't expect it to make the wonderful pictures which are possible with a modern camera. But we can make good pictures if we remember—neither the camera nor the subject must move one whisker's breadth during the time the black flap is up and light is reaching the film.

You won't have much luck photographing people or pets. You should be able to take good pictures of your house or outdoor scenes around home. Set your camera on a bench or wagon for steadiness. Aim it at your subject by sighting along the top.

I can't tell you how long to leave

the "shutter" or black flap open because I'm not sure what size your pinhole or the exact size of the box will be. I can just give you a guide exposure to start. If it's a bright day, open the flap for one minute.

Materials

Small square of thin brass (or jam jar lid).

Cardboard box about 8 inches long, 6 inches wide and 6 inches deep.

Flat punch.

Sewing needle—large size (not darning needle).

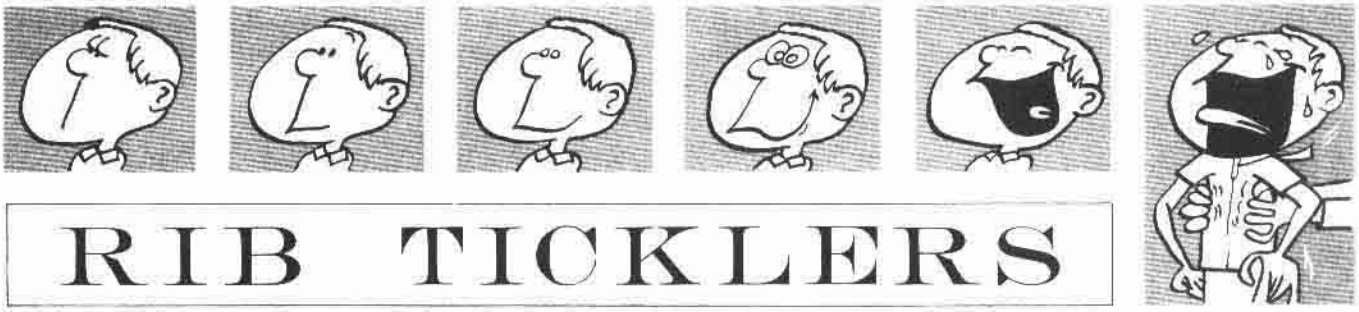
Fine metal file.

Fine oil stone.

2¼ x 3¼ inch sheet film such as Kodak Royal Ortho (you'll likely have to order it from a camera store, about $2.45).

Flat black paint.

Black art paper.



RIB TICKLERS

Ralph: It says here that exercise will kill germs.
Sam: That's right.
Ralph: But how in the world are we going to get them to exercise?

Gregory Blanchard, Lively, Ont.

Old Lady: A ticket to Toledo please.
Agent: Do you want to go by Buffalo?
Old Lady: No, better make it by train.

Wayne Walker, Centralia, Ont.

Q: What's green and likes children?
A: Art Linklettuce.

Brian Hill, Rossland, B.C.

"Waiter! There's no chicken in this chicken soup," said the disappointed diner.
"Well," snapped the waiter, "did you ever find any horse in horseradish?"

Irene Obridzinski, Cowansville, Que.

Supply officer: "Does the new uniform fit you?"
Recruit: "The jacket isn't bad, sir, but the trousers are a little loose around the armpits."

Gary Metcalfe, Calgary, Alta.

John: How do you drive a baby buggy?
Gerry: I don't know.
John: Tickle his feet.

Leo Goyeau, Windsor, Ont.

Tom: What's a lawsuit?
Tim: I don't know.
Tom: What a policeman wears while on duty.

Gerald Milton, Peterborough, Ont.

Daughter: "Mom, why are you always standing at the window when I am singing?"
Mother: "Well, my dear, I don't want people to think I am beating you!"

George Lukitch, Atpatin, Yugoslavia.

Mother: Did you take a bath?
Son: Why, is there one missing?

Brad Harris, Calgary, Alta.

Q: What did the grape say when the elephant stamped on it?
A: Nothing. It just gave a little wine.

Allan Friesen, Trenton, Ont.

"This is a secondhand store?" asked the customer.
"Yes, it is," said the clerk.
"Well give me one for my watch."

Larry Slivinski, Sudbury, Ont.

Helen: Where is Aunt Sarah? She'll miss the parade.
Susie: She's waving her hair.
Helen: Can't she afford a flag?

John Thompson, Brighton, Ont.

First Mosquito: Why are you limping?
Second Mosquito: I came through a screen door and strained myself.

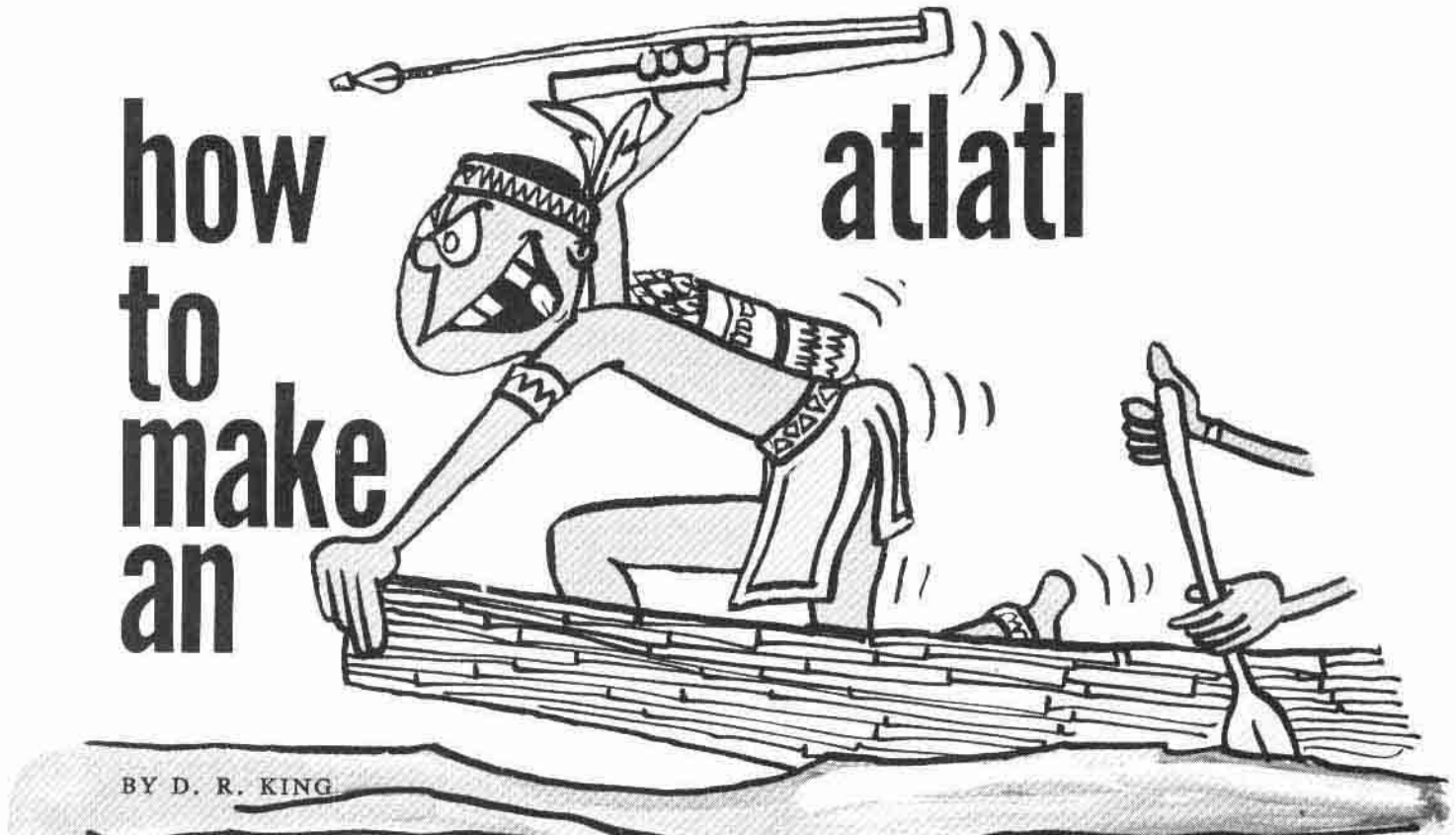
Lesley Chipperfield, Woodstock, Ont.

CHOPPER

By Simpkins

"It's a game they picked up from the lumberjacks."

how to make an atlatl



BY D. R. KING

Sometimes you hear about people getting lost in the woods and dying of starvation because they had no means to kill game. There is a simple gadget, easy to make, which would save a lot of lives if more people knew how to make and use it. It is the 'atlatl', or throwing-stick, and was in use in North America by our Indians long before they learned about bows and arrows. As a matter of fact, it is still used by the natives of Australia and by our Eskimos.

Construction of the atlatl may take many forms or shapes, but for now we shall consider only the basic idea. Pretend you are lost in the bush and need some method of killing game. A spear might be your first thought, but you would need some means to propel it farther than you could throw it with your arm. A bow and arrow would be the best thing, but there is the difficulty of the bowstring and feathers for the arrows and so forth. Your best bet is the atlatl.

An atlatl can be made very easily and quickly, even without a knife if necessary, but imagine that you have a knife. First, find a piece of tree limb, either dead or living, but still strong, and about twenty inches long with a fork on one end.

The undesired part of the limb is cut off, leaving the crutch as a hook. This hook is then worked down to form a high hump with a flat face on the handle side. The long handle can then be worked down to suit the hand.

With this much of the atlatl finished, we can start on the dart. The ideal dart is made from the long straight shoots of the willow or other bush, but almost any wood will do. The dart should be at least two, or even three times as long as the atlatl. The heavy end of the shoot is best for the tip or point, while the smaller end forms the butt. The bark should be stripped completely and the dart shaft dried well before use if possible. While it is drying, it can be straightened by working in the hands or weighted in the appropriate places.

Some form of point is necessary. The simplest point is the sharpened end of the shaft held in a flame until it begins to char. We want only to dry out the surface of the wood so that it will not bend when it strikes hide, but too much heat will destroy the point altogether.

To be really effective, though, the point should be of some material that is heavier than the shaft material. Roots of trees often are exposed and become extremely hard in the weather, and a piece of this wood could be

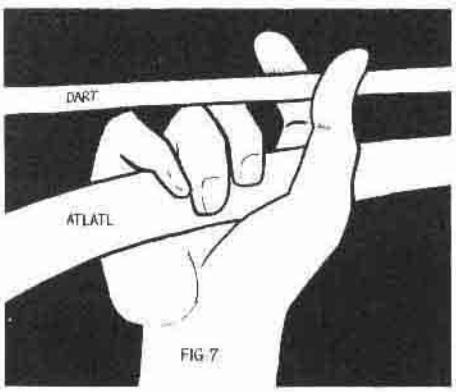
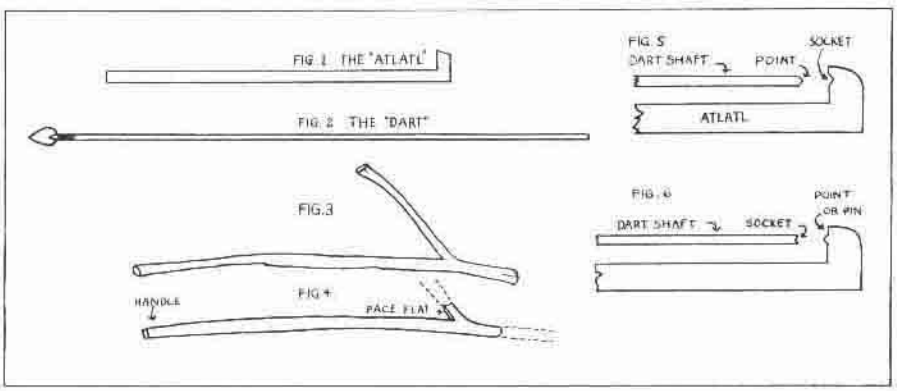


FIG 7



used for a point. If material such as bone, glass, stone or metal is at hand, use it. The points are fitted into a slot in the end of the dart, and lashed firmly in place with the green inner bark of willow or other bush. The lashing will have to be replaced often, as it dries out and breaks.

Perhaps the most important part of the whole thing comes next. There are two methods of nocking the dart so it will be thrown properly by the atlatl. The two pieces are unattached, and somehow must be held together while the atlatl is swung to launch the dart. You can use the hump-socket or the hump-pin method. In the first, a socket is drilled into the flat face of the hump, just large enough to take a blunt point on the butt of the dart shaft. The hump-pin method, has the socket let into the butt of the dart and a small point or pin worked on the face of the hump. This is probably the better way, and is most common in native use.

Grip the handle of the altatl firmly in the palm of the hand, curling the last three fingers around it, and allowing the thumb and forefinger to protrude up on either side. The dart is laid between these two and held.

The atlatl, with the dart in place, is swung back over the shoulder with the dart pointing high in the air, and the arm is then propelled forward with a fast throwing movement. As the dart reaches the horizontal, it is released by the thumb and forefinger, allowing it to fly free from the atlatl, and the atlatl in turn follows through the complete swing. There should be no jerky stop after the dart has been launched, or this control may throw off the flight of the dart. The principle upon which the atlatl works is the simple lever, by which the arm is extended. Can you imagine what would happen if a baseball pitcher's arm was twice as long as it is? The atlatl gives that much more leverage to the pitch.

You don't need to be lost in the woods to make and use an atlatl, you can have a lot of fun with one at home, made out of ordinary wood. But the atlatl is a deadly weapon: use it with great respect.

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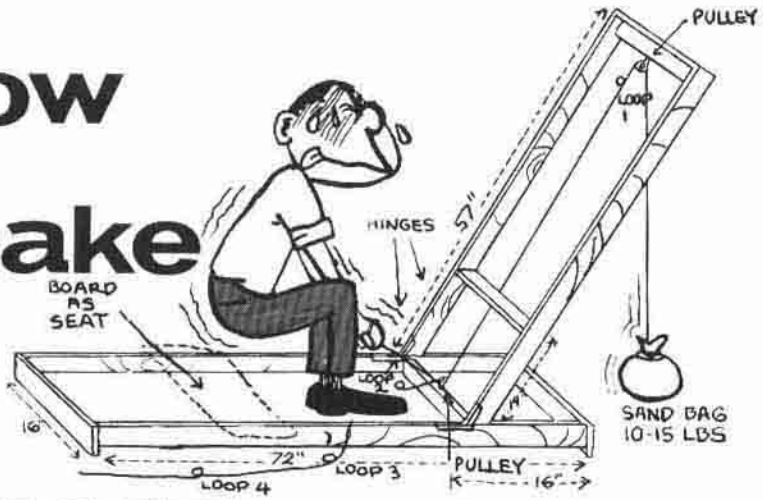
how to make a HOME EXERCISER



Here's how to make a home exerciser you can keep in your basement and use all year round to keep in shape.

Construction: to measurements shown on illustration. Frame of 3" x 2" wood, with screwed and glued fitted joints. Exerciser is upright at 70° from base.

Materials: 30 ft. of 3" x 2" wood; 1 pair 5" strap hinges; 20 ft. ¼" cord; 2 rope pulleys — (screw-in type); 1 canvas sand bag; 20 1¾" screws; 2 ft. 1" dowelling (pull-stick).

Always have your weight on frame to counterbalance pull. Do the suggested number of exercises only at start. Use a sandbag weighing from 10 to 15 pounds at start (weight can be increased gradually). Never strain — cease any exercise when muscles tire. Never exercise when sick or tired. Exercise three times weekly.

1 Rowing. Sit on board placed on horizontal frame members. Place pull-stick in No. 2 loop. Commence rowing action. Draw arms to chest at same time straightening legs and body. Repeat twenty times initially.

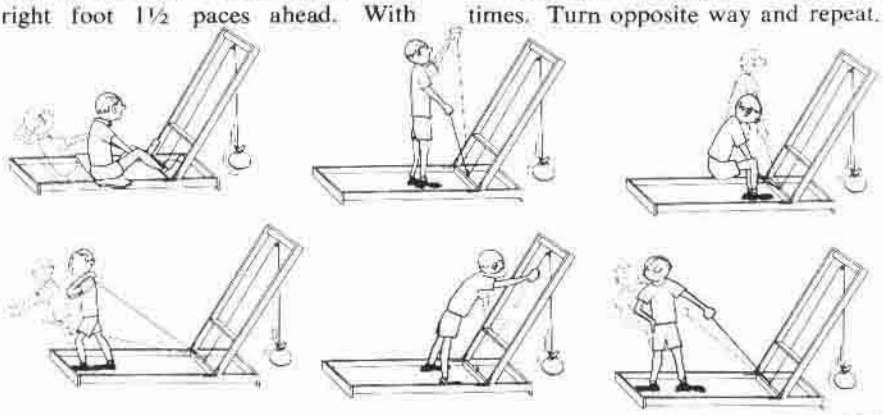
2 Stand with back to exerciser. Place left foot on end cross piece with right foot 1½ paces ahead. With pull stick in No. 5 loop raise arms to breast with rope on left side of body. Straighten arms forward at same time bending body forward at waist. Repeat six times. Reverse feet and rope positions and repeat six times.

3 Stand on frame about one foot from hinges. Place pull-stick in No. 3 loop. Keeping body erect and arms straight raise stick to position above head. Lower to original position gradually. Repeat two or three times.

4 Squat on frame about six inches from hinges — with pull-stick through No. 2 loop. Keeping body and arms straight push up and straighten legs. Repeat three times initially.

5 Stand on frame about two feet from hinges — with pull-stick in No. 1 loop. Incline body forward from hips. Keeping arms straight force stick down until arms point to cross piece. Return slowly. Repeat four times.

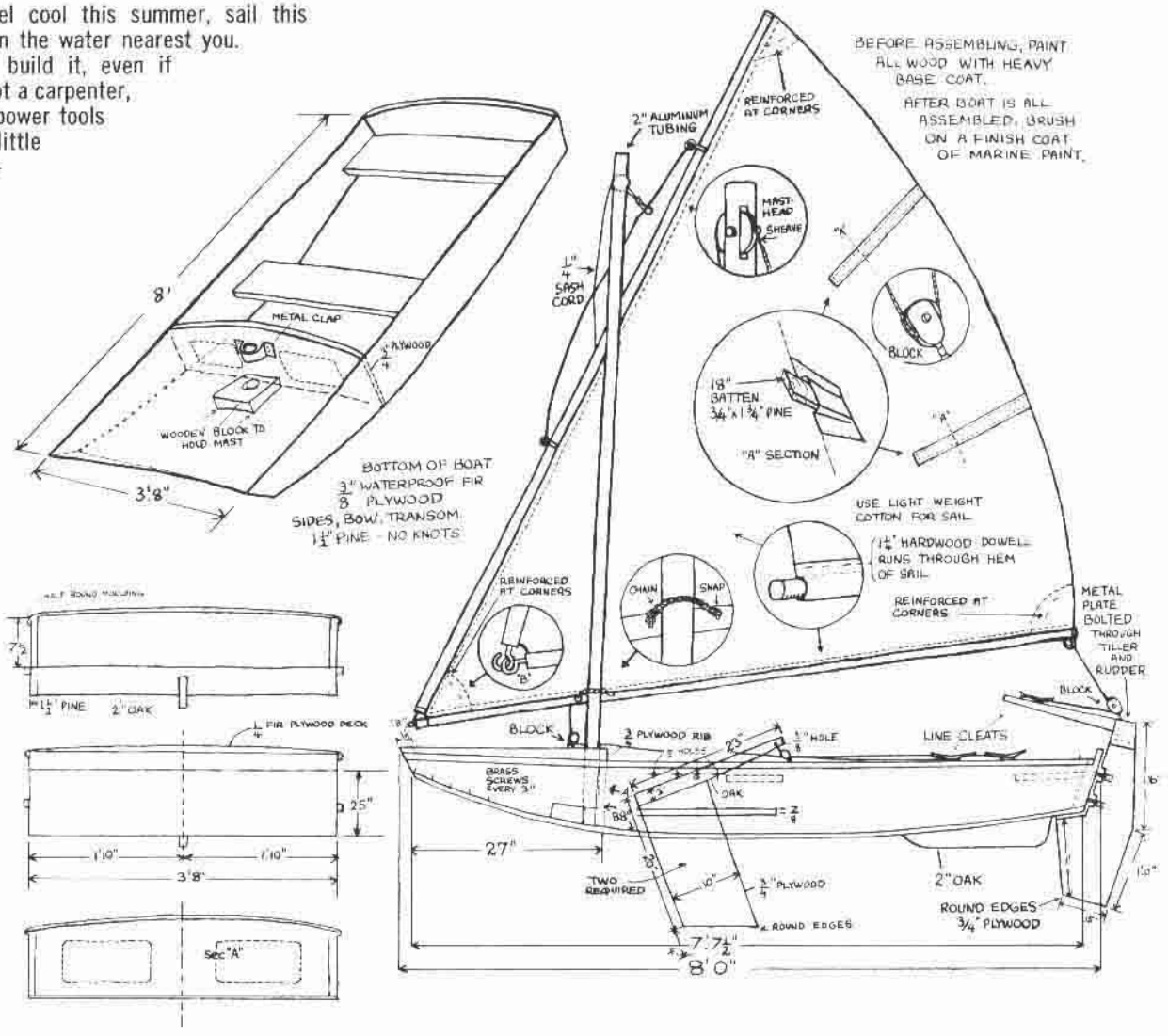
6 Stand with legs apart and with one foot on end cross piece — with pull-stick in No. 4 loop. Incline body away from exerciser bending at waist — keeping arms straight — repeat six times. Turn opposite way and repeat.



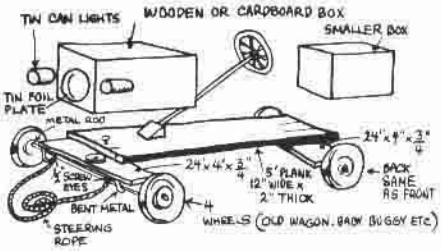
TWENTY-FIVE THINGS TO DO THIS SUMMER

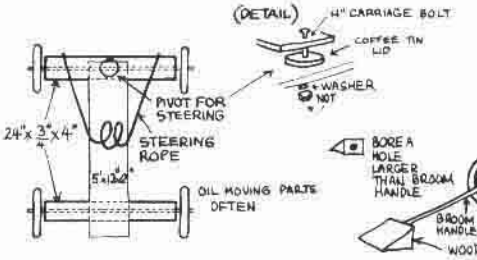
Summer is the one part of the year when you have time to do all the things you want. You can build projects, learn new skills, or think up new ways to have fun. To help you along, the next four pages contain twenty-three ideas for you to try out, plus two big projects that promise months of fun on land and in the water. We have divided everything up according to whether you are at home, the camp or the cottage, but some of the things you can do at any of these places. There's only one hard-and-fast rule — have a good time doing them.

1. To feel cool this summer, sail this beauty on the water nearest you. You can build it, even if you're not a carpenter, without power tools for very little cost outlay.

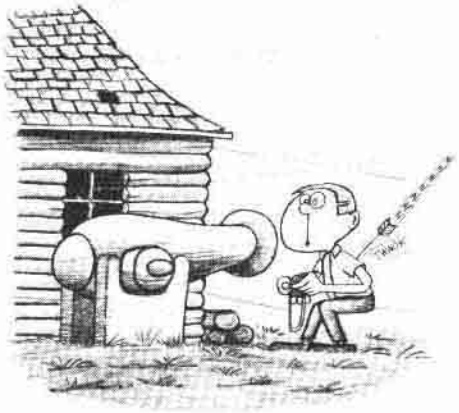


2. For some red-hot summer fun, scorch down your neighborhood hills with this Canadian Boy hot rod. It's easy to build — you can probably find most of the parts needed around the garage or basement.



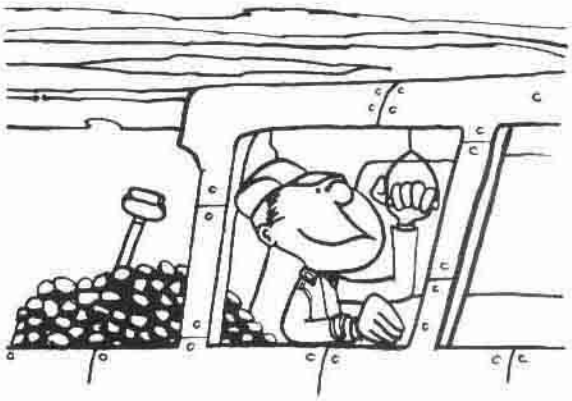


AT HOME

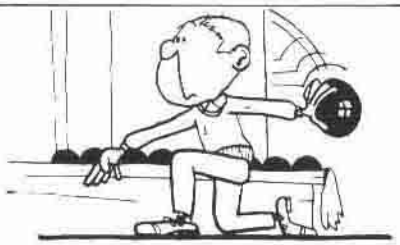


3. Even at home, you can take short trips. So why not try visiting a nearby historic site or provincial park this summer, either for the day or maybe camping out overnight? This kind of trip lets you see your country and its history, brings you into contact with wild animals, and makes for a lot of fun. Ask your parents.

4. Everybody has a car these days, so a lot of you have probably never ridden a train. Why not plan a short train trip this summer? Get some of your friends to go too, and take an adult along if necessary. For a small amount of money you can see the sights, experience the fun of thundering along the rails, and generally see how people travelled before the car and airplane.



5. A shorter and a sweeter trip you can take is the one to an ice cream plant. For this trip, you should get an adult to arrange for a tour of a local plant, then get your friends together, and go. After all, who isn't interested in ice cream? You'll see how it's made, and you can be pretty sure you'll get a free sample. Try it.

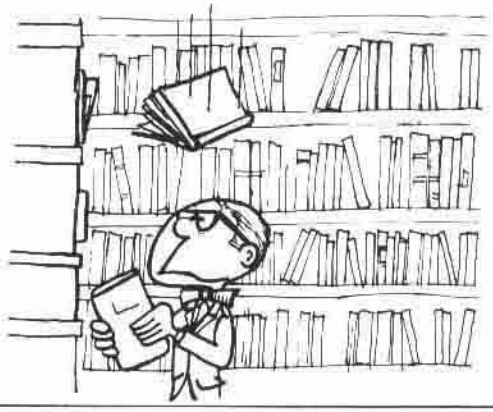


6. Now is a good time to start playing a sport that you can take part in all through your teens, right into your grownup life. We mean bowling. There should be a bowling alley near you, and for not too much money you can get started on this fine year-round sport. Practicing now can give you a head start on most other people, because they don't start till fall.

7.

You can start riding this summer. Just follow the advice on how and where to start, given in the first article. All it requires is a little time and money. Then you can be the hottest horseman in your neck of the woods since last week's episode of "Bonanza".

8. Maybe it sounds boring to be indoors reading in the summer, but it doesn't have to be. As a matter of fact, your local library runs special programs for you in the summertime. Visit it and see. Try reading "how-to" books—books that tell you how to make something, or teach you new skills. If you still want to be outdoors, take the book with you and sit under a tree.



9. Your bicycle can help you this summer. Plan a bicycle hike with a friend. Take a lunch, a roadmap, and try to reach a certain point and back in a day. Organize a bicycle rodeo. Your police department will help you here. At a bicycle rodeo, you can have races, displays of riding skill, and all kinds of contests. It's a ball, so get at it.

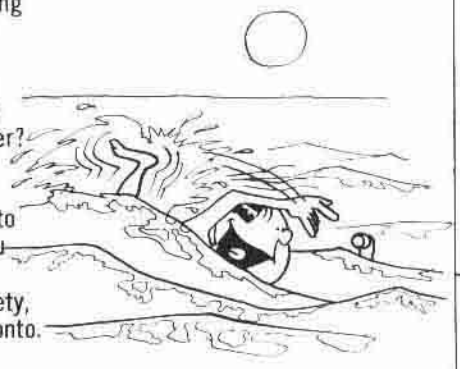
10. Backyard sports are a good idea. Some of the best ones are: horseshoe pitching, simple and easy to set up; badminton, using inexpensive equipment; croquet, which is a game requiring a lot of skill, not an old ladies' sport; and for golf fiends, a putting green or a miniature golf course. Just walk out your back door, and there you are. A pocket-sized Olympic stadium!

AT CAMP

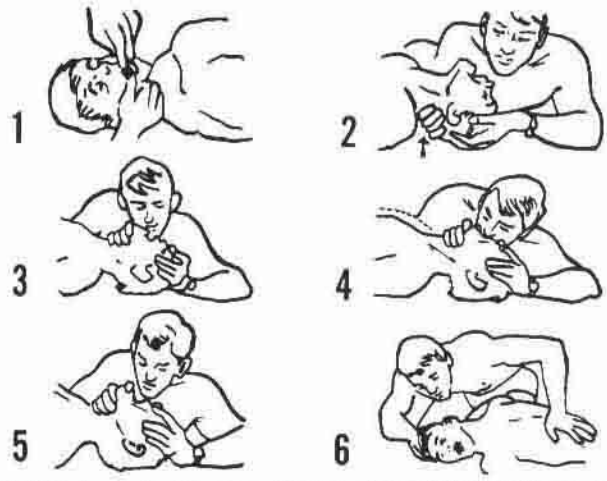
11. If your camp doesn't have one on its agenda, see if you can get a field day organized. After all, you've been spending the summer getting in top shape, haven't you? Now's the time to see if you can run faster, jump higher, or throw farther than anyone else. Who knows, you may become the star of the 1972 Olympics. In the meantime, it's a lot of fun to take part in.

12. Want to be an actor? Your start could come at camp this year. Get permission to put on a skit. Get some friends to help you, and figure out a plot for the skit, give everyone a part, and rig up some costumes out of whatever is at hand. Make the skit as funny as possible, and show it to the rest of the guys one evening. You'll be your camp's Red Skelton.

13. Swimming, or just fooling around in the water is lots of fun, as you know. But don't you think it would be a good idea to learn how to swim really well this summer? The next best thing to instruction, which you will get, is information on how to swim well and safely. If you want information, write Canadian Red Cross Society, 95 Wellesley St. East, Toronto.

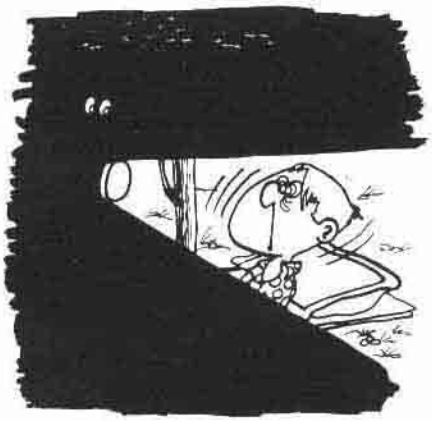


14. Start a collection this summer. Leaves are probably the easiest thing to collect, but you could start a rock, seashell or animal track collection. To find out how and where to start, head for your nearest library before you leave for camp. The library has all the information you need, and you can probably take the book to camp with you.



15. Artificial respiration is a must to know when you are near water. Here's the officially approved method: 1. Place victim on back, and begin rescue breathing. If chest fails to rise, sweep fingers through throat to clear it. 2. Lift neck and tilt head back. Maintain this position. 3. Open mouth, pull chin, pinch nostrils shut. Keep his mouth open. 4. Seal lips around mouth and blow. Watch for chest rise. If jaw locks, hold lips shut and blow in through nose. 5. Remove mouth, relieve nostrils. Watch for chest fall. Snoring sound means obstruction. Press belly if it bulges. 6. If fluid is present drain from victim's mouth between breaths. Put shoulder over your knee to raise chest, and press belly.

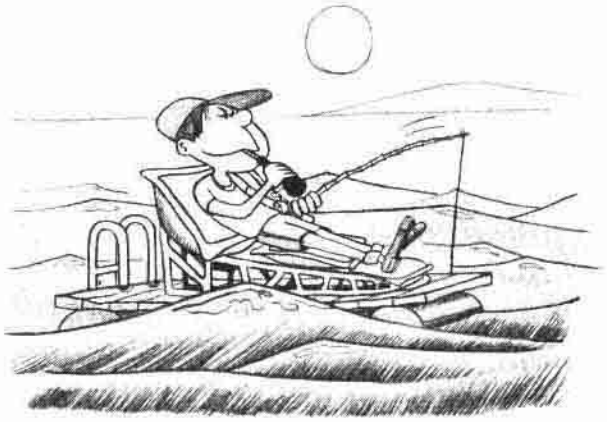
16. When night falls, that's the time for flashlight games. Get your counsellor to set up a night game featuring hunting for a treasure, using a map to find it. Two teams are picked, and both try to find the treasure and get it back to the starting point. They can "kill" a member of the opposite team by shining a light on him.



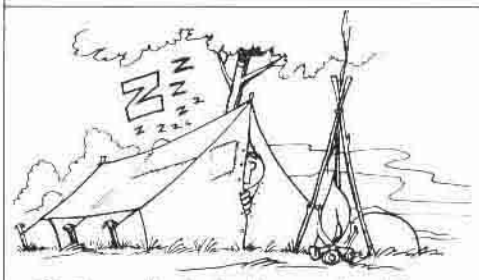
17. Now's the time to learn map-making. You can tie it in with the flashlight game above, by drawing the maps for it. Get a book out now on how to make and read maps, and study it. When you get to camp, try making maps of the camp layout or surrounding territory, and make them to scale. Or get a government topographical map of the area, and use it to plan your hikes, making your own additions.

AT THE COTTAGE

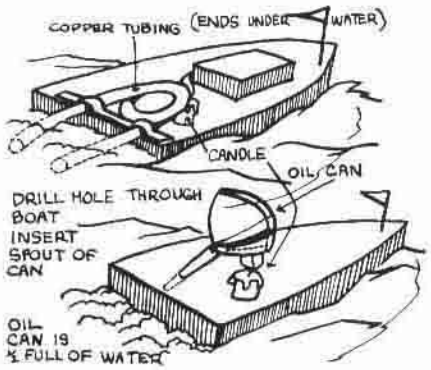
18. Our last issue told you how to get started on the fishing season. Put that advice to good use by getting out in the old fishing boat. Or fishing from shore. Or wading. At any rate, let's go fishing. Keep it simple—you don't need a lot of expensive equipment. And when you bring your catch back to the cottage, try something different—try cooking the fish yourself, over an outdoor fire. They'll taste better.



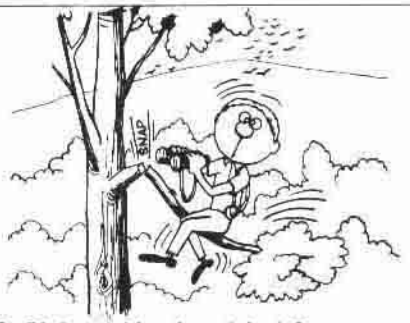
19. Speaking of cooking, how's about whipping up a meal for the whole family by yourself? You may not think you're any great chef, but you'll be pleasantly surprised at how easy it is. Ask your mother for a little advice before you start. Make it an outdoor meal, featuring barbecueing or baking in coals. Incidentally, there are also good library books available on outdoor cooking. And remember, as chef, you won't have to do any dishes!



20. To really taste the great outdoors, get outside. Set up a camp for yourself, a distance from the cottage. Use a tent or a sleeping bag, and stay out overnight. Use your camp as a headquarters for all your outdoor activities. And your campfire is a good place to practice your outdoor cooking before you try it on the family.



21. Here are two model boats that really run. Get the materials before you leave home, and build your own fleet at the cottage.

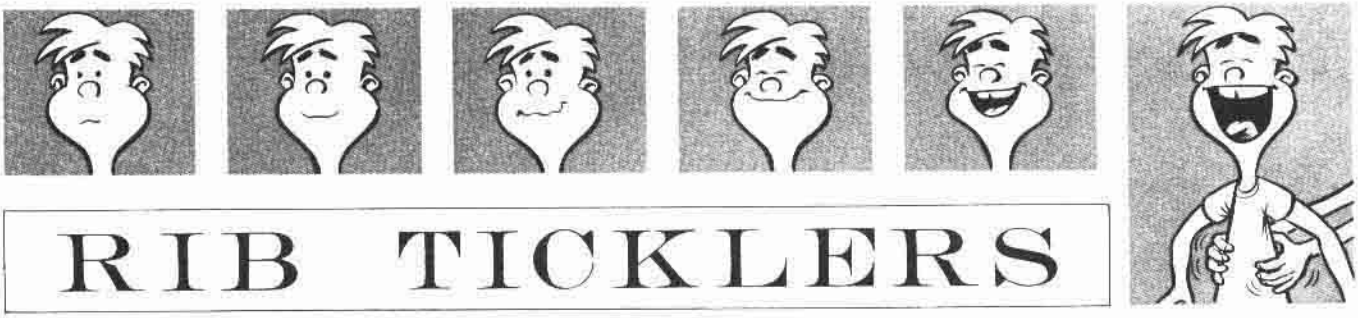


23. Bird watching is not just for grownups. Using binoculars, or your naked eye, keep an eye on the birds around the cottage. Try to get as close as possible without scaring them, and watch them singing, feeding their young, or repairing nests. Try to identify as many varieties as possible, and keep a book to take down the names in. Another good idea is to try to draw them in your notebook.

22. Learn how to operate a boat properly. The best way we can think of to learn this is from the booklet "Safety Afloat". This booklet covers all safety on the water, particularly regarding small boats. It tells what equipment you should carry, speed and right-of-way regulations, and what size motor you should have for your boat. It is available free from the Department of Transport, Information Services, Ottawa, Ont.

24. We hope you don't ever have to use this idea, but as you know, accidents will happen . . . Knowing first aid before you go to the cottage is an absolute must. Just about every angle of first aid is covered in the St. John Ambulance Preliminary First Aid booklet, available from the Stores Department, Boy Scouts of Canada, Box 3520, Ottawa 3, Ont. Cost is 60c.

25. Last, but definitely not least. Take pictures this summer. Carry your camera with you wherever you go to capture everything you do this summer. It's lots of fun. And there is a bonus for you. You can paste them down in an album and show them to your friends. You can enjoy reliving this summer for years to come.



RIB TICKLERS

Teacher: If you had one and asked your father for another, how many dollars would you have?
Student: One.
Teacher: You don't know arithmetic.
Student: You don't know my father.

David Collins, Ottawa, Ont.

U.S. pilot lands on aircraft carrier: "Boy, what a day! I sank 2 Jap submarines, 1 Jap destroyer, and shot down 3 Jap planes."
Captain: "Velly good, Yank! But you make one velly big mistake!"

Bill Brodie, Montreal, Que.

Mother: Well, Tommy, did you learn much your first day at school?
Tommy: Not enough. I have to go back tomorrow.

George Schibli, Smithers, B.C.

Q: What's red, has four legs, feathers, and goes baa, baa?
A: Two Indians singing "The Whiffenpoof Song."

Claudette Mimeault, Jonquiere, Que.

Q: Where do Volkswagens go when they're wrecked?
A: To the Old Volks Home.

Michael O'Connor, Souris, P.E.I.

Father: My boy, I never kissed a girl until I met your mother. Will you be able to say the same thing to your son?
Junior: Yes, dad, but not with such a straight face.

Terry Schafer, Saskatoon, Sask.

Principal: Why are you late, Bob?
Bob: I was throwing peanuts in the water.
Principal: Why are you late, Tom?
Tom: I was throwing peanuts in the water.
Principal: Why are *you* late?
Late boy: I am Peanuts.

Jim Smith, Labrador City, Nfld.

Clerk: Did you kill any moths with those moth balls I sold you yesterday?
Customer: No, I tried for two hours, but I could not hit one.

Joseph Chapman, Amherst, N.S.

Two reasons for some people not minding their own business are:
(1) No mind.
(2) No business.

Stephen Rogers, Canning, N.S.

Teacher: Did you find the examination questions easy, Moe?
Moe: Oh, the questions were easy. It was the answers I had trouble with.

Stuart Bisso, Scotland, Ont.

A young man seated next to a nice old lady on an airplane was vigorously occupied chewing gum. "It's nice of you to try to make conversation," she said, "but I must tell you, I'm totally deaf."

David Taylor, Portage La Prairie, Man.

A girl thought she was a chicken, and went around the house clucking and trying to fly. This embarrassed her family and they were going to put her in an institution, but they were poor and needed the eggs.

Rory Langton, Vancouver, B.C.

Tim: What begins with 'e' and ends with 'e' and only has one letter in it?
Jim: I don't know.
Tim: An Envelope!

Mike Murphy, Metz, France.

Pete: (Holding a piece of candy over his dog's head): Speak, Rover, speak.
Rover: What'll I say?

Michael Koelbli, Montreal, Que.

Broke: Do you charge for gravy?
Waiter: No, sir.
Broke: Do you charge for bread?
Waiter: No, sir.
Broke: I'll take bread and gravy.

Brian Hossack, Fredericton, N.B.

If you took all the dill pickles eaten in America in one month and laid them end to end . . . people would think you were some kind of a nut.

Doug Hite, Wainwright, Alta.

Q: How do bees dispose of their honey?
A: They cell it.

Pierre Gravel, Ile Perrot, Que.

Joe: What did Ben Franklin say when he discovered electricity in lightning?
Robbie: Nothing! He was too shocked.

Dennis Urban, Fairview, Alta.

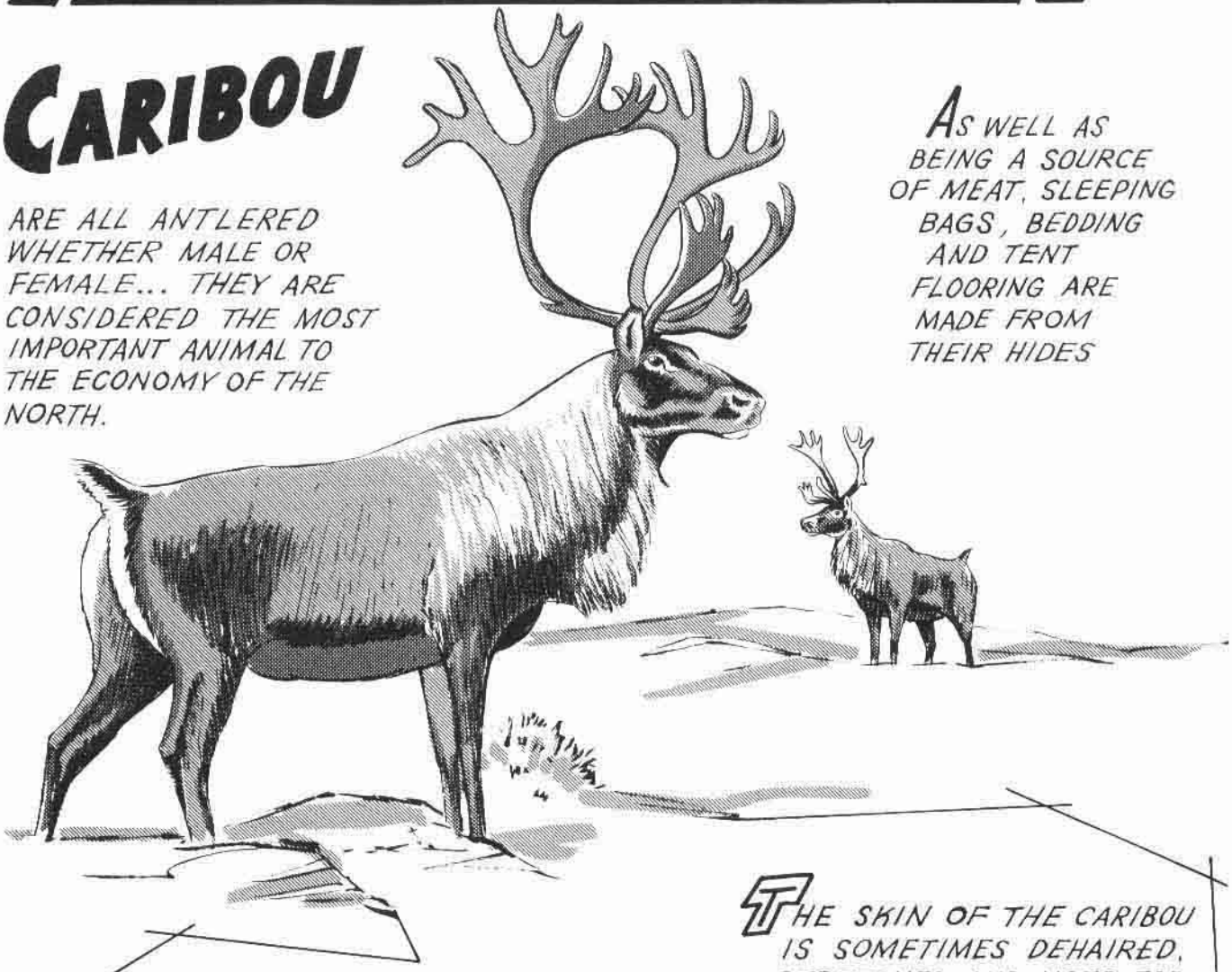
"Out!"

Canadata

CARIBOU

ARE ALL ANTLERED WHETHER MALE OR FEMALE... THEY ARE CONSIDERED THE MOST IMPORTANT ANIMAL TO THE ECONOMY OF THE NORTH.

AS WELL AS BEING A SOURCE OF MEAT, SLEEPING BAGS, BEDDING AND TENT FLOORING ARE MADE FROM THEIR HIDES



THE SKIN OF THE CARIBOU IS SOMETIMES DEHAIRED, STRETCHED AND USED FOR WINDOWS BY ESKIMOS

ESKIMOS

CHOOSE THE FUR OF THE CARIBOU BECAUSE IT IS VERY LIGHT IN WEIGHT.

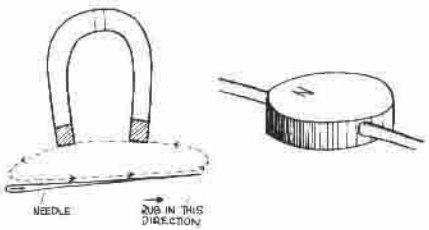
EACH HAIR IS LIKE A TINY HOLLOW TUBE WHICH MAKES THE FUR A WONDERFUL INSULATOR IN THE POLAR CLIMATE.

LEGGINGS FOR BOOTS ARE MADE FROM THE SKIN OF THE CARIBOU'S LEGS

do-it-yourself compass

WANT TO MAKE your own compass? Here's the way the early mariners used to make their's. Try it for yourself and you'll have a useful item for your next hike. You'll need a magnet, a needle and a piece of cork.

Now follow the diagram and rub the magnet along the needle. Do this several times — the longer you do it the more magnetism you put into the needle. Make sure you keep rubbing the needle in the same direction, lifting the magnet off the end of the



needle after each stroke and starting again at the other end.

Take the cork and cut a slice about an eighth of an inch thick. Push the needle through the cork as shown. Find out which end of the needle points North by floating it in a bowl of water. Don't use a metal bowl; the metal will distract the needle — a small plastic one will be best.

When the needle has steadied check its direction with a regular compass. Now mark a letter N on your piece of cork in the correct position and there's your compass. Keep your home-made compass in a small, round plastic box. When you want to check your bearings all you have to do is tip a spot of water from your canteen into the box.

PUZZLE & GAME PAGE

C	P	R	G	O	U	T	G
S	A	E	M	T	R	O	H
C	M	L	L	H	K	C	S
O	N	A	R	B	R	L	I
L	E	E	A	D	E	V	F
I	K	C	U	S	O	G	N
P	L	C	H	S	K	S	U
E	R	A	H	U	B	Y	M

1. FISH PUZZLE

How many names of fish can you make out with the letters in this puzzle, moving one space, any direction, at a time? There are at least 15 different names.

2. TRICKSTERS

These are all trick questions. The obvious answer is not likely to be the right answer, so think carefully before answering:

A. If lightning struck the left wing of a jet airplane, which propellers would stop turning?

B. A bird likes to eat raisins from a raisin-tree. To which bunch of raisins will he go?

C. This is a section of India. If you went from south to north, where would you cross the Congo River?

D. A native is chasing an ostrich with a spear. Which way will the ostrich fly to escape?

E. A shark in a lake wants to get the larger piece of bait. Which way does he go?

3. SLICING A BANANA WITHOUT PEELING IT

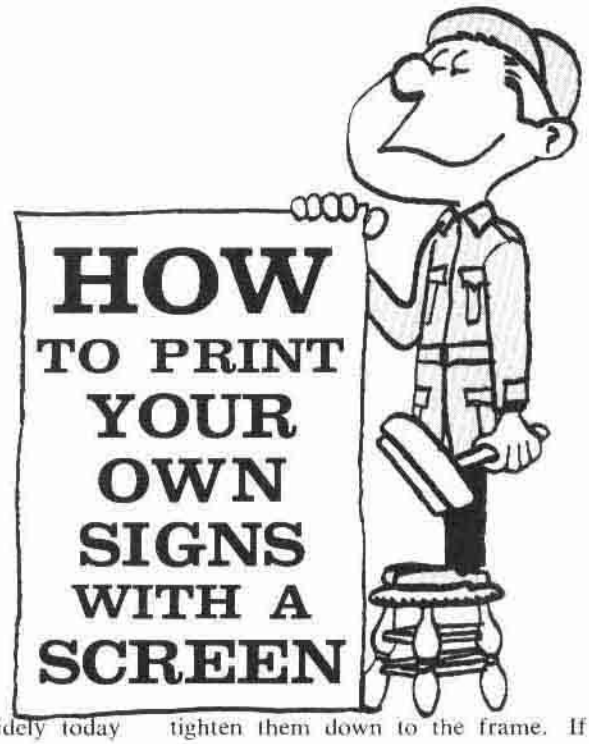
Prepare a solid banana in advance. Give it to your friends to examine, then tell them you will slice it without peeling it and they can eat it. How will you do it?

Read the answers in your mirror!

Answers to No. 1: 1. TROUT, 2. PERCH, 3. MUSKY, 4. SUCKER, 5. SALMON, 6. CARP, 7. SUNFISH, 8. PIKE, 9. EEL, 10. DOGFISH, 11. SMALLMOUTH, 12. LARGEMOUTH, 13. ROCKBASS, 14. SILVERBASS, 15. CHUB.

Answers to No. 2: A. A JET AIRCRAFT DOESN'T HAVE PROPELLERS. B. RAISINS ARE DRIED GRAPES AND GRAPES GROW ON VINES. C. THE CONGO RIVER IS IN AFRICA. D. AN OSTRICH CAN'T FLY. E. SHARKS DON'T LIVE IN LAKES.

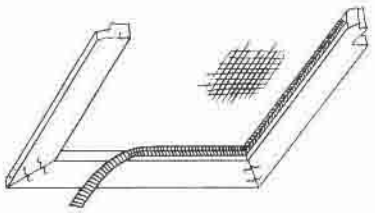
Answer to No. 3: USE A SEWING NEEDLE AND SOME FINE THREAD. PUT THE NEEDLE IN, THEN OUT ABOUT AN INCH AWAY. HOLD ONTO THE THREAD SO THE END STAYS OUT NOW GO BACK INTO SAME HOLE AND OUT ABOUT AN INCH AWAY. KEEP ON TILL ALL THE WAY AROUND THE FRUIT. COME OUT SAME PLACE YOU WENT IN, BESIDE THE OTHER THREAD. NOW PULL BOTH THREADS AND THE BANANA WILL BE NEATLY SLICED INSIDE WITH NO MARKS ON THE SKIN. YOU CAN SLICE IT IN SEVERAL PLACES.



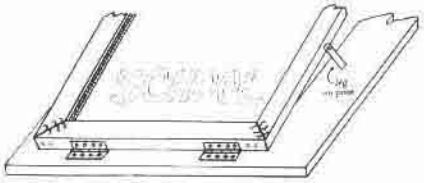
HOW TO PRINT YOUR OWN SIGNS WITH A SCREEN

A long time ago, someone discovered he could print signs using a fine screen made of silk. He filled in the screen, with a sealing-liquid like glue, leaving only the outlines of the letters open. Then he stretched the cloth tightly over the surface on which he wanted to put the sign. Finally, he dragged a thick paste-paint across the screen with a scraper, forcing it through the letter openings onto the surface beneath. When he lifted the screen, behold! His sign was finished. By repeating the process, he could make many signs in a fraction of the time it took to draw them.

Attaching frame to baseboard



Taping inside the screen



Stapling screen to frame

This process is used widely today and is called silk screen printing or screen process printing. You can use a simple form of it to make signs to announce a dance or any other social event. If you've ever worked yourself ragged *drawing* signs, you'll be happy to learn how it's done. And if you're interested in making extra spending money, you may be able to sell some of the signs you make!

Let's suppose you're going to make a sign 18″ x 16″ in size. You'll need a wooden frame, to stretch your silk screen over, that has a center opening 18″ x 16″ in size. You'll need an 8′ length of knot-free, straight-grained soft white pine to make it from.

Carefully cut the wood and assemble it with a square, to make a frame as illustrated. Now cut a piece of silk screen 20″ x 18″ to attach tightly to it. The 2″ extra length and width is to allow a 1″ strip of cloth, all around the outside, to permit attaching it to the frame.

When attaching the screen be careful the threads in the weave run parallel to the frame. Position the screen and start stapling by putting the first one in center position A as illustrated. Holding the screen taut and even with the frame, insert staples from the center toward one corner (B or C as shown) and stop 1″ to 1½″ from the corner. Then repeat the process to the other corner, stopping 1″ to 1½″ from it. Now do the same on the opposite side and repeat it at the ends of the frame. Finally, tighten and tack the corners.

Now apply shellac to the edges, to tighten them down to the frame. If there's any screen that persists in curling up, trim it off. After the shellac has dried, cover the line of staples with masking tape, which you can buy at the hardware store. Also, apply masking tape to the inside edge of the frame and against the screen, as shown.

The screen is blocked off to leave only openings for the letters, using a piece of draughtsman's tracing paper which has the letters cut out. Be sure that the paper you use doesn't have wax on it. This is called the stencil.

To make the stencil, lay the draughtsman's paper over the sign you wish to duplicate. The paper should be larger than the sign, about 24″ x 22″. Carefully trace the lettering with a pencil. After finishing the tracing, set the master sign aside and lay the draughtsman's paper over a sheet of glass. Coat the side of the paper with your lettering on it, with 2 coats of shellac, allowing an hour to dry between coats. Hold the paper down at the edges with masking tape so it won't curl when drying.

After it has dried, cut out the lettering using a sharp pointed knife or a razor blade. Put the centers of the letters A,B,D,O,P,Q, and R, on the master sign so you'll know which letters they belong to when the stencil is cut.

Now lay several sheets of newspaper over a flat smooth table or bench top. Be sure there are no wrinkles. Cut your stencil to 16″ x 18″ or a little less in dimensions. Lay

Silk Screening

it over the newspaper, shellac side up, and place the letter pieces from the master sign into their proper letters. Lay the screen over the stencil, being sure it is properly centered. Place a piece of newspaper inside the screen and iron it down with a hot iron, being careful not to burn it. The heat will cause the shellac to soften, and bond the stencil to the screen. After you have put extra tape around the edge, to seal any openings between the frame and the stencil, the screen is ready to use.

Attach it to a plywood base by hinges as illustrated. Use hinges with removable pins, like door hinges, so the screen can be easily taken off later for cleaning.

The last piece of equipment you will need is a squeegee. This consists of a wooden handle with a strip of synthetic rubber coming out one side, as illustrated. This is used to drag the silk screen paint across the screen, forcing it through the letter openings on the paper or cardboard beneath.

To do screen processing printing, you must have a supply of either oil-based or water-based silk screen paint. The former is best for outdoor or waterproof signs but takes longer to dry. Water-based paint is cheaper and can be washed out with water.

To use the screen, first position the paper or cardboard under it so the lettering will be properly centered. Put positioning marks on the base board so you can put each sign in the same position. Lower the screen, and pour a small amount of paint on the edge farthest away from you. Draw the paint back and forth across the screen with the squeegee until it has evenly penetrated the letter openings. Now lift it up and remove the sign. Don't stop printing until you've finished all your signs for if you do, the paint will dry in the stencil. Should this happen, a quick wipe with a cloth containing solvent or water, as the paint may need, will clean out the letters.

When you're finished printing, remove the screen and wash it out right away as the paint may be impossible to remove if it is allowed to dry.

MATERIAL YOU'LL NEED TO MAKE A SILK SCREEN

1 yard (minimum quantity you can buy) coarse mesh Japanese silk screen, enough to make 4 screens 18" x 16" —$4.00 per yard.

Supply of squeegee rubber strip 3/8" thick.

Squeege handle wood.

1 qt. silk screen paint (minimum amount you can buy).

Supply of masking tape.

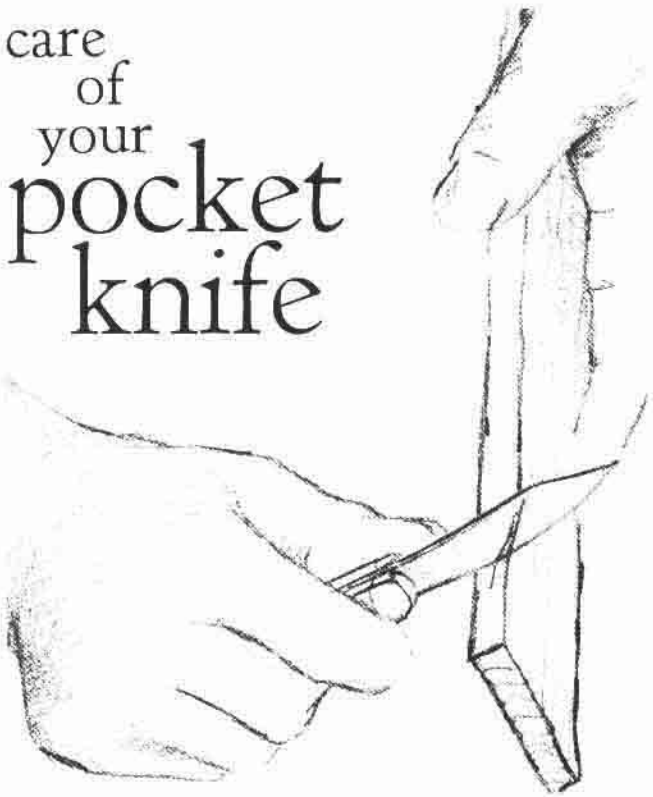
8' of straight grained white pine, 3/4" x 2".

Office stapler and supply of staples.

Small quantity of shellac.

Two small hinges with removable pins.

care of your pocket knife



One of the most valuable tools you can own is your pocketknife. You can find dozens of uses for it, around the house, out of doors, camping, hunting or fishing. You may not have thought about it, since your knife is such an everyday piece of equipment, but there are a number of important points to the care and use of your knife.

First off, you should pull out only the blade you want to use, and close it up again when you are finished with the job. That sounds simple, but you'd be surprised how often people forget to do it.

Another thing to remember is that a multi-bladed knife is designed to do many things. And the big thing is to use the various parts correctly. The cutting blade, of course, is the jack-of-all-trades — cutting ropes, skinning fish, etc. For tightening screws or lifting tacks, some knives have a screwdriver blade. If your knife doesn't have one, use a screwdriver, not another blade. If the knife includes a can opener, that's the blade, and the only one, to be used to open cans.

Like all good tools, knives need care. Wipe the blade after using. When a job is finished, put the knife back in your pocket. Don't leave it on the ground where it will rust or get stepped on. Oil the joints of the knife occasionally to keep it rust-free and operating smoothly.

Treat your knife with respect. Closing a clasp knife, seems routine, but do you do it the right way? Holding the knife in one hand and gripping the sides firmly with the fingers, press the blade closed with the open palm of the other hand.

To keep your knife at top efficiency, learn to keep it sharp. Just use an oiled stone of medium fineness and keep the blade at a 20-degree angle. For pocket knives this means raising the back edge of the blade about an eighth of an inch from the stone. The expert sharpener pushes the blade away from him, just as he does in whittling, in a motion as though shaving the surface of the stone.