ALASKA Tidelines

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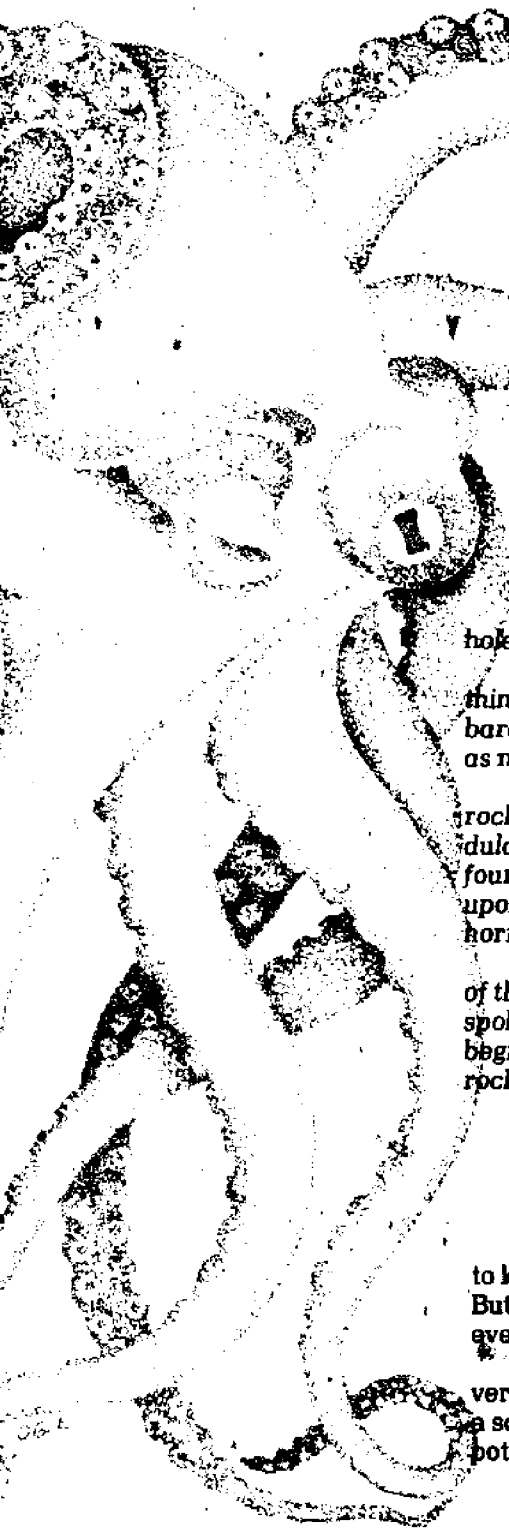


OCTOPUS: Terror or treat?

He thrust in his hand as far as he could and began to grope in this hole of shadows. All at once he felt himself seized by the arm.

What Gilliatt felt at that moment was indescribable horror. Something thin, rough, flat, slimy, adhesive and living had just wound itself round his bare arm in the dark....It was as supple as leather, as solid as steel, as cold as night.

A second thong, narrow and pointed, issued from the crevice of the rock. It was like a tongue from the jaws of a monster....A third thong undulated outside the rock, felt of Gilliatt, and lashed his sides like a cord....A fourth, as swift as a dart, leaped toward his belly....A fifth (attached) itself upon the others and folded over Gilliatt's chest. Compression added to horror; Gilliatt could hardly breathe....

Suddenly a large, round, flat, slimy mass emerged from the lower part of the crevice. It was the center; the five thongs were attached to it like spokes to a hub. On the opposite side of this foul disk could be (seen) the beginnings of three other tentacles which remained under the slope of the rock. In the middle of this sliminess there were two eyes gazing.

The eyes were fixed on Gilliatt.

Gilliatt recognized the octopus.

Victor Hugo (1866)
The Toilers of the Sea

Some monster, right? And it probably won't make you feel any better to know that this same creature abounds in the coastal waters of Alaska. But before you head for the hills remember that, just as in monster movies, everything you see in French classics isn't necessarily so.

In real life, the "terrifying" octopus actually is (1) timid and shy, (2) very sensitive, (3) a devoted mother, (4) a neat and tidy "housekeeper," (5) a source of material for beautiful Alaska paintings, (6) good to eat and (7) a potentially important resource for Alaska fishermen.

Don't believe it? Read on...

November issue: Fur Seals of the Pribilofs.

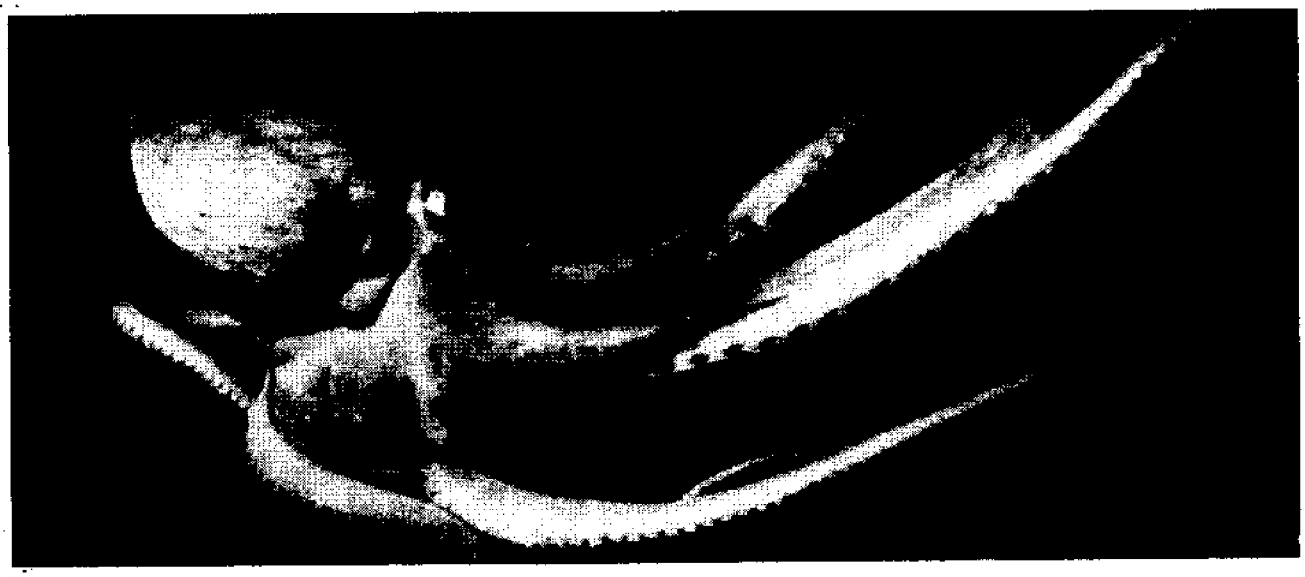


Photo by Louis Barr

The octopus is about as misnamed as it is misunderstood. The word comes from the Greek *okto*, meaning "eight" and *podos*, meaning "foot." But its eight tentacles are really arms — not feet. They are used for gathering food and grasping rocks and other things, such as our hero on page 1. (Incidentally, Gilliatt got out of it OK. He'd had the foresight to carry a knife in his teeth.)

Furthermore, the octopus is a member of the scientific family of *cephalopods* (SEFF-uh-luh-pods) which means "head-foot." That sounds like a good descrption, since the octopus's eyes on top of its bag-like body make it look like a head directly attached to the tentacles (*see photo*). But the closest thing it has to a "foot" is its funnel (*see sketch*) with which it jet-propels itself through the water.

And finally, the octopus belongs to a major division of the animal kingdom called *mollusca*, which includes clams, oysters, snails and other shellfish. But the octopus has no real shell. The only hard part of its body is its sharp parrot-like beak.

All in all, the octopus is a mysterious creature. Although it has fascinated people for thousands of years, there is still much we do not know about it.

For one thing, it isn't all that easy to study. It is so timid and shy it spends most of its life hidden away in underwater dens. (Divers say those large shiny eyes peeking out from a rock cranny look so human it is hard to believe the octopus isn't making scientific observations of them, rather than the other way around.)

For another thing, the demand for octopus as a fishery resource hasn't been all that great. While the octopus is considered a delicious dish in many parts of the world, so far it hasn't caught on in North America — perhaps, in part, because we don't know how to cook it (see *page 7*)

While about 30 different kinds of octopus are found in Alaska waters, they have been largely ignored by Alaska fishermen. But recently a new market has developed that may make our abundant supply of octopus well worth finding out about and fishing for.

Each year several million pounds of octopus are imported to Alaska for use as halibut bait. Most of it comes from Japan where there is a highly developed octopus fishery.

The going price for this imported octopus is $1.25 a pound. And since octopus fishing is fairly easy and requires no expensive gear, Alaska coastal residents are beginning to wonder if they aren't missing out on a potentially important cash resource.

There are believed to be around 150 species of octopus that range in size from little two-inch spider-like midgets to the Giant Pacific Octopus (*O. dofleini*) which can span 32 feet. It is this latter species that makes up the bulk of the Japanese catch and is of most interest to would-be Alaska octopus fishermen.

Even though the Pacific octopus is the biggest of all species, it shares many traits with the younger members of its family. And like the rest, it is surprising how much of its biological make-up is designed for protecting or hiding itself.

It can change colors to blend into any kind or background — pale sand, brown rocks, green seaweed, blue-gray water — and can even manage combinations of colors on different parts of its body at one time. When startled or angry, it can put on a regular underwater disco light show with flashes from white to purple to firey red.

Since its body is so soft, it can squeeze through any opening that is big enough for its small beak — the neck of a bottle, the mesh of a screen or net, even the crack between the lid on top of a box or aquarium tank. (Aquarium attendants use great care in sealing the octopus tanks, or they are apt to find the octopus lunching on its neighbors.)

When pursued by enemies, such as sharks, whales or eels, the octopus shoots out a cloud of heavy black ink which hangs in the water like a dark shadow image while the octopus makes its escape. It is also equipped with a poison gland which can paralyze predator or prey. ►

Its long sensitive tentacles are lined with rows of round muscular suction cups. These suckers have an amazingly strong grip, and can hold for a time even after the tentacle is cut off. If an octopus loses a tentacle, a new one grows in its place.

It moves in a number of ways. It can tip-toe along the ocean floor on the ends of its tentacles or ooze from rock to rock by pulling itself along with its suckers. And it can swim very rapidly, forward or backward, by drawing water in under its mantle and shooting it out through its funnel.

The octopus also is equipped with a pair of fish-like gills for breathing, and three hearts for circulating its very thick blood through its body and tentacles. But most surprising of all are those large round luminous eyes, with their jet-black rectangular pupils, that can follow movement in any direction.

You would think that with all these tricks and all this defensive equipment, the octopus would be the terror of the seas. But instead, it prefers to hide in dark underwater dens, beneath rocks, or in caves, or in anything big enough to crawl into.

From the den, passing crabs or small fish can be captured by the flick of a tentacle. But if the octopus must go out in search of food, it will always return to its den to eat. Meat is delicately picked out by tentacles and beak. And when the meal is over, the den is carefully cleaned and the bones and shells are placed outside. It is one of those strange twists of nature: the poor octopus, which is so timid it spends most of its life in hiding, is so neat it gives itself away by placing its garbage at its front door.

Although the Giant Pacific Octopus can grow to well over 100 pounds, it usually matures and is able to spawn when it reaches 35 to 45 pounds. The female retires to her den to stay and lays thousands of eggs in stages for a week or more. For the next four to six months she will protect and tend her eggs, gently spraying them with water from her funnel and keeping them free of floating debris. She will eat little, if at all, and by the time they hatch, she will die.

The young of the Giant Pacific Octopus look like tiny copies of their parents, and are able to swim and take care of themselves. They have huge appetites and can grow from 2 to 22 pounds in as little as six months, depending upon the water temperature and food supply. They will feed upon almost anything they can catch — herring, flatfish, crabs, shrimp and other shellfish.

Unlike most octopus that seldom stray far from their dens, the young Giant Pacific octopus are very much on the move. Japanese scientists have found that young octopus under 30 pounds migrate inshore and offshore twice a year.

They are in shallow waters from May through July and from November through January. They migrate offshore to live in deeper waters from February through April and from August through October. And instead of sticking to the ocean floor as most octopus do, they have been found swimming at the surface or at mid-depth during these migrations.

Any octopus from 10 pounds on up can be used for halibut bait. But large adult octopus usually stay in deep water year-round. So fishing efforts are usually concentrated on the young animals, especially during the months when they are close to shore.

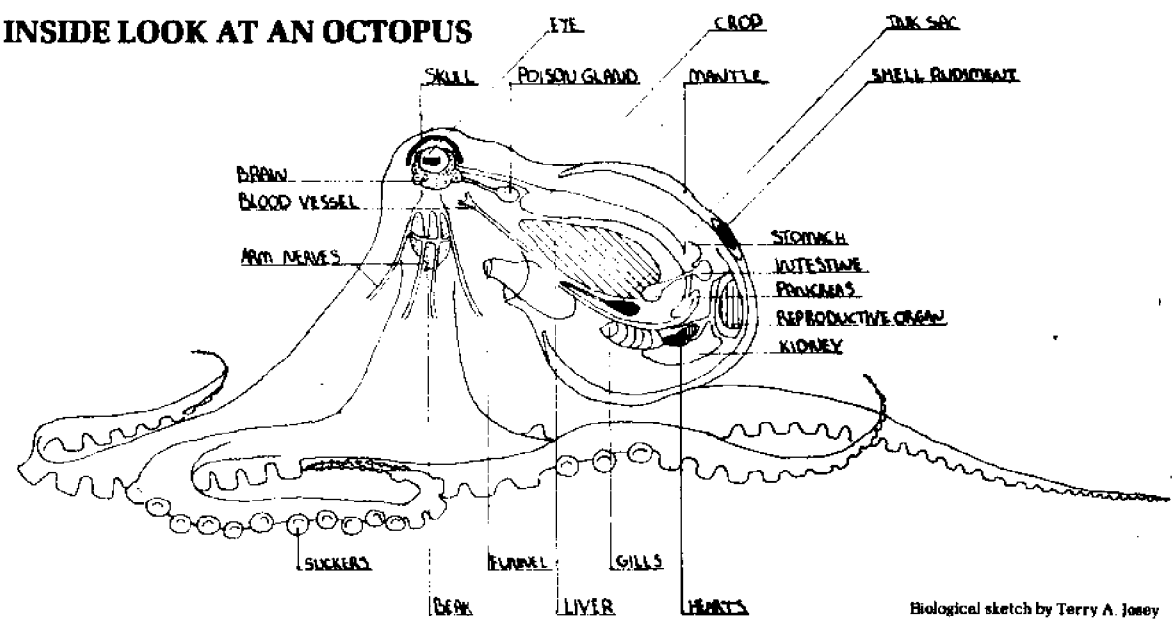
Giant Pacific octopus in Alaska waters are believed to follow similar migration patterns. So you might want to give it a try. All you need is some basic instruction on how to catch them (see *page 6*) and a good grip on your nerves. And if one of those big shiny black eyes gives you an evil wink — well, you can always go back to making kelp pickles.

MORE ABOUT OCTOPUS:

"Kingdom of the Octopus," by Frank W. Lane, Sheridan House, 1960

"The Fishery Biology of Octopus dofleini (Wulker)," by Madelon Green Mottet. Washington State Department of Fisheries. Technical Report No. 16, 1975.

AN INSIDE LOOK AT AN OCTOPUS



Biological sketch by Terry A. Josey

CAREER CORNER

PAINTING WITH OCTOPUS INK

Western sandpipers at Homer Spit (Painted in octopus ink)

Anyone who has caught octopus for food or for bait will tell you that the one thing to watch out for is the ink sac. Break that accidentally and you have a real mess — black oily goop all over you, your clothes, your boat, your kitchen sink. And what's more, it's going to stay there awhile because it won't wash off. It's indelible.

But Alaska artist Diana Tillion of Halibut Cove is different. The ink is what she's after With it she paints warm glowing pictures of great beauty that have been featured in galleries and art museums throughout Alaska and in the Lower 49.

Alaska artist Diana Tillion in her gallery at Halibut Cove

Like most artists, Diana also paints with watercolors and oils. But so far as she knows, she is the only professional artist using octopus ink. In a way, it combines her life-long passion for painting and her love of Alaska's beaches and seas.

"The pure ink is very dense," she told *Tidelines*. "But if you smear a tiny drop around, you will see that it glows like the rainbow — gold and green and blue.

"On paper it is a rich brown color, and its range of shade from the darkest to a faint wash is almost endless. I describe it as a living color — very warm and quite moody. I think its mood is sort of a warm loneliness, if you can imagine that."

Since her early childhood in California, Diana has always been interested in art. She came to Alaska with her parents when she was 11 years old, and at the age of 18 she did her first commercial painting — a huge mural of the Kachemak Bay area for a dance hall in Homer. That same year one of her paintings took first prize in the Anchorage Fur Rendezvous art show.

All of this led to a year in New York City, studying under the artist Hans Hoffman. But it wasn't until she married her fisherman husband, Clem, and moved to Halibut Cove that she began painting with octopus ink.

Halibut Cove is a small village on Ismailof Island, tucked away in a remote corner of Kachemak Bay on the Kenai Peninsula. It lies about six miles southeast of Homer and can be reached only by boat or plane. The surrounding waters are full of marine life of all kinds — salmon, halibut, crab, shrimp, clams and, of course, octopus.

Clem had been using octopus for halibut bait for years. But until Diana came along, the ink sac had just been something to carefully avoid and throw out.

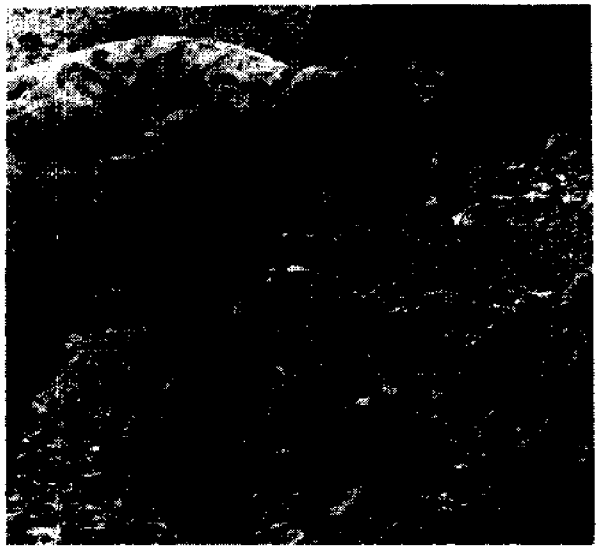
"I've always been interested in color tones," Diana explained, "and I had read that the dark reddish-brown color called sepia (SEE-pee-uh) originally came from the ink of a squid.

"We don't have any squid around here, but we do have a lot of octopus. And since the two animals are close cousins, I decided to try that. It turned out that octopus ink has the very color tone you think of as sepia — and I just loved it."

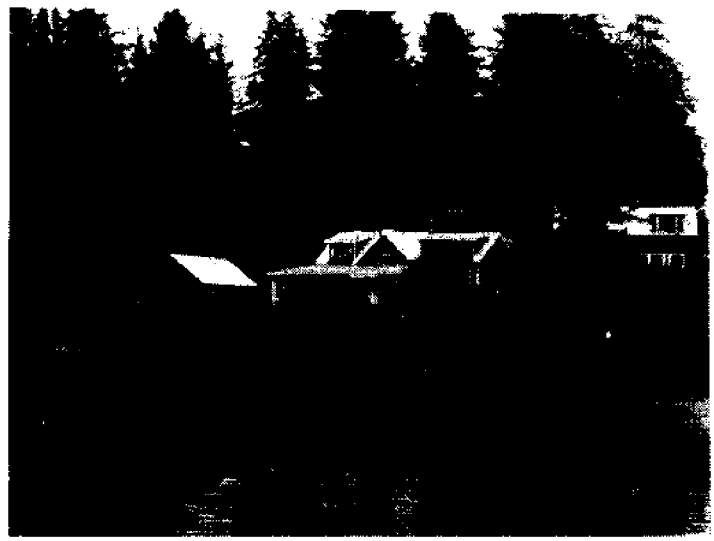
Enough to go capturing octopus?

"Well, we catch them right here on the beach when they're left high and dry on a minus tide. And hopefully someone goes with me who will pick them up or pull them off the rocks, because they are very strong.

"When we get one we put it in a sack and let it simmer down for awhile because it's very wiggly, As soon as it doesn't want to fight back I take the ink out myself



Diana goes octopus hunting on a low low tide at Kachemak Bay.



The Tillions' place at Halibut Cove

because I'm picky about that. We gut the octopus at the same time and take it home for the pot."

To draw the ink from the ink sac, Diana uses a glass syringe and hypodermic needle, like the medical kind used for shots and vaccinations. A five to ten pound octopus will yield ½ to 1 cc. of ink, or about 20 to 40 drops. She keeps the ink in the syringe so it won't dry out.

"The ink is ready to use when it comes out of the octopus," Diana explains. "I'd like to say I had a secret formula, but I don't have to do anything to it at all. It's a true natural color that needs nothing."

The ink is so intense that a little goes a very long way. "I use the plastic top of a coffee can. I put a tiny drop in the center and a spot of water on the side of the lid. Then I mix the water and ink until I get the tone I want.

"It's surprising how often it takes just one drop of ink to do a painting. I mean, I'm still working from the same drop when I'm through."

Because it is indelible, painting with octopus ink can be very demanding.

"Once it is on the paper it is there to stay, and you can't change your mind. If you make a spot, you can't think, 'Oh well, I'll just make a dark area there and cover it up.' Because the whole thing gets darker and you still have the spot.

"I always brush the whole surface with clear water before I start painting so that the water is carrying the ink as much as I am with my brush. You can't make a smooth area of color without putting clean water on the paper first.

"But you have to make all your decisions of how you want your painting to be before you begin, because there's no going back. Then you just hope that what you see in your head is going to wind up on that piece of paper."

What has wound up on paper since Diana began using octopus ink some 20 years ago is a wide range of paintings that seem to capture the haunting quality of Alaska's natural beauty. Many of these are on display in a small dome gallery near the Tillion's family home on Ismailof Island.

There are scenes of Halibut Cove, and the sea birds of nearby Gull Island; dark forests and misty islands; shells and sea grasses; wildflowers, fallen leaves, and delicate fireweed seeds blowing — all painted with the goopy ink from a squiggly octopus. Which goes to show, perhaps, that you can find beauty in almost anything.

Bald eagles on Ismailof Island (Painted on octopus ink)

CATCHING OCTOPUS — The Easy Way

Octopus fishing can be as complicated as running long lines equipped with tangle hooks. Or it can be as simple as prowling the beach on a low low tide, looking for a tell-tale litter of empty shells in front of a rock cranny that might mark an octopus den.

But for the small part-time operation, here are two methods widely used in the big Japanese octopus fishery. They require no expensive gear and can be handled from a small boat fairly close to shore.

POTS

Since the shy octopus is always looking for a den to crawl into, the most common way of catching it is with a pot. Almost anything with a small opening and a dark interior will do. Old tires (*Fig. 1*), five gallon cans, or hollow floats with an entrance carved out will handle about a 20-pound octopus, which is probably as large as you want to catch. Or you can build a pot out of wood or plastic.

The pot used most in Japan is a wooden box, about 12 × 16 inches and 8 inches deep, with an entrance at one end and drainage holes at the other. The line, which is marked by a float at the surface, is attached near the entrance of the pot. In this way, the octopus will stay inside while the pot is being pulled while the water drains out the bottom.

Pots should be heavy enough to sink to the bottom (put some rocks in if necessary). They should lie flat without rolling. Set them near a good food supply and away from reefs where they would be competing with natural dens.

Usually the pot isn't baited, but you can experiment if you like. Check them every one to three days, but don't pull them before 10 a.m. Octopus do most of their hunting at night or in the early morning hours — so give them a chance to get home.

DRIFT LINES

Drift lines rely on wind and water currents to drag the lure along the bottom and make it look like something alive (*Fig. 2*). They work best where the ocean bottom is fairly smooth.

The lure is made of four or five long soft wire hooks, twisted into a loop at the end where the line is attached. The hooks are bound to a smooth large rock which is painted white. A piece of bait (fishheads, flatfish, clam meat) is fastened on top of the rock, and red or yellow plastic streamers are tied to the line about 18 inches above the lure to attract the octopus's attention.

The float and flag on the surface are pushed along by the wind and water current. When the float stops moving, either an octopus has taken the lure or the hooks are hung up on the bottom.

Jerk the line up and down several times. If an octopus is down there, this should hook it. (But even if the hook isn't set, the octopus usually will cling to its meal while it is being pulled up.) If the lure is caught on the bottom, the soft wire hooks will pull free and can be hauled up and reshaped again.

In places where there is little current, this same gear can be slowly trolled from a small boat. In this case, however, you must check your lines often to see if you have an octopus.

GOT ONE!

The octopus can live quite awhile out of water. And it will be all over the boat (or even back down on the bottom) unless you subdue it right away. If you want it to stay alive, keep it damp and cool in a net bag or gunny sack *tied tightly closed*. It can be killed by piercing its brain (located between the eyes) with a knife, or by turning the mantle (outside covering) of its body inside out so that the gills are exposed.

Adapted and reprinted from "Octopus Fishing: Techniques and Gear," by Hank Pennington, in *Alaska Seas and Coasts*, June-September, 1979, University of Alaska Sea Grant Program.

Fig. 1

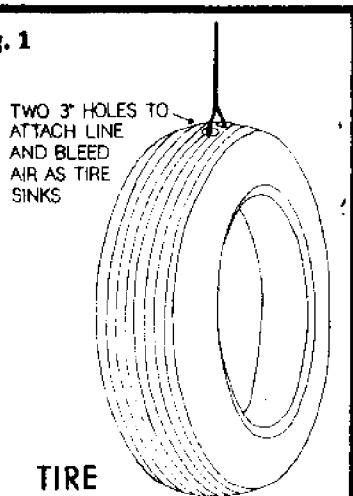
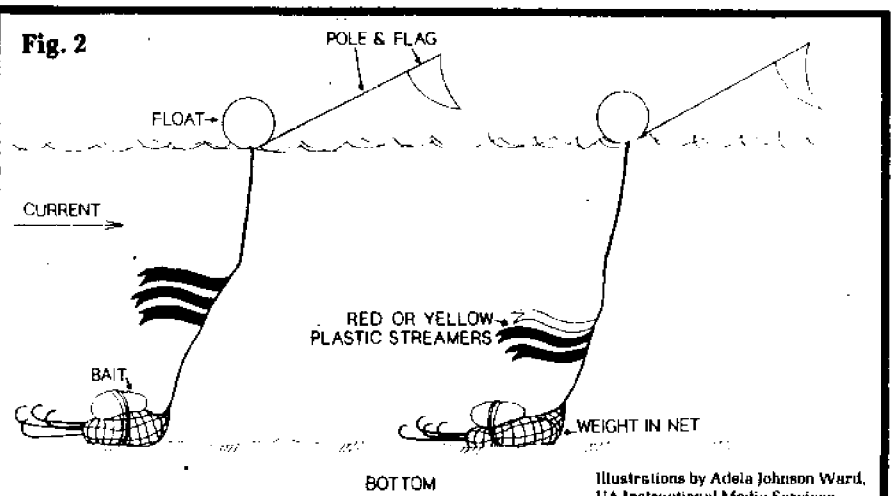
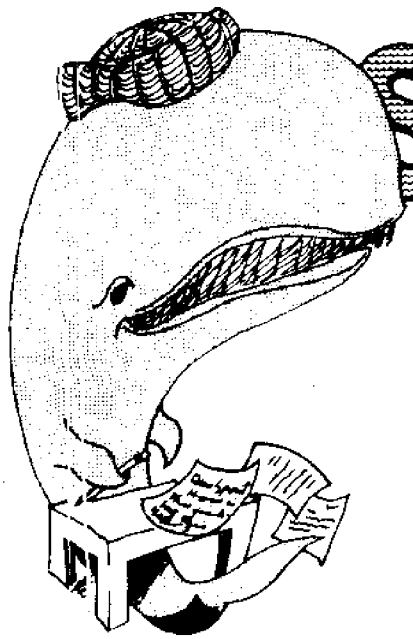


Fig. 2



Illustrations by Adela Johnson Ward, UA Instructional Media Services



SPOUT

This column is your place to SPOUT off. Send questions and contributions (articles, opinions, photographs, jokes, recipes, whatever) about Alaska's marine life and water world to Spout:
c/o Alaska Tidelines
Alaska Sea Grant Program
University of Alaska
Fairbanks, AK 99701

Our First Octopus

Kodiak Island provides many kinds of seafood to eat, but one of the most interesting varieties to capture and cook is the shy elusive octopus.

The first octopus we caught was purely by luck. We were checking our halibut skate, which is a long line with hooks used to catch halibut. However, that day there was no halibut on our line — only one huge squirmy octopus. Before we knew it, he had applied the suction cups on his legs to the outside of our skiff and began to crawl under the boat.

I leaned over the side and tried to pull the legs off the skiff, but just as quickly he would reattach himself. Finally, with the help of a friend, we pulled him loose and hauled him into the skiff. Then when we weren't looking, he began to climb up the sides again. So finally we put him into a big trash can we had onboard, and he was content to remain in it.

Once we got home, I was faced with what to do with the octopus. I saved some of the legs for halibut bait and decided to cook the rest for supper.

I boiled the legs with the skin on for quite awhile and then took them out to cool. The legs are easy to skin once they have been cooked. After peeling the legs, I put them through the meat grinder. Then I mixed the ground-up octopus with oil, vinegar and seasonings. It made a delicious salad!

Rose L. Anderson
Teacher, Larsen Bay School.

Photo by Rose L. Anderson

You're right! Octopus is a very tasty treat if you know what to do with it. Maybe it looks sort of yukk to begin with. But once it's cooked, the outside turns red and the flesh is white and firm — very much like crab or shrimp meat. (As a matter of fact, some people insist that you could substitute octopus for crab in a seafood cocktail and fool almost everybody.)

But make no mistake. Octopus meat is tough and must be tenderized. There are a number of ways to handle this problem, depending upon the size of your octopus and how you want to serve it.

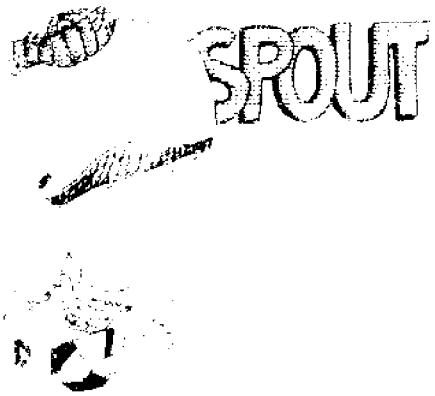
- Long slow simmering in unsalted water, from three hours to all day for bigger animals, or 45 minutes to an hour in a pressure cooker.
- Boiling small octopus for a half-hour or so — just long enough to firm up the flesh. Then grind or shred the meat, or slice it very thinly.
- Pounding the raw meat with a flat object to break down the muscle tissues. (Some people do this the other way around: they take hold of the ends of the tentacles and just bang it away against a sturdy table or countertop.)

But the first thing to do, of course, is clean the octopus. Remove everything from inside the body, including the eyes and the beak. Be careful not to break the ink sac. Everything else, including the suckers, is good to eat.

Wash it thoroughly in lightly salted water to remove the slime. (Too much salt will make the octopus tougher.) Boil it all in one piece. After cooking, the skin will slip off easily and can be discarded.

Octopus meat is delicious just boiled and sliced and served on

(Continued on page 8)



rice with a little onion or garlic. Ground-up meat can be used for salad, patties or fritters, chowder, and spaghetti sauce like any other seafood. Shred it with the grain and it can double for crab meat. Or slice it paper thin and serve it with a soy sauce dip.

For fried octopus, slice one to two-inch rounds from the raw tentacles. Pound very well as you would abalone. Dip in lemon juice, beaten eggs, and roll in fine cracker crumbs. Brown quickly on both sides in hot oil and serve with tartar sauce.

Spout

Do you know a good octopus recipe? Send it to the Spout column!

Did You Know That . . .?

Barnacles have favorite colors. Or so it seems. Experiments have shown that those saltwater shellfish seem to attach themselves in greater numbers to dark-colored surfaces. So if you have problems with barnacles on the bottom of your boat, try painting it a lighter color — like white or pale green.

Joke(?)

Yukon Pete was boasting again: "I've been running boats on this river so long I know where every sandbar is."

Just then the boat ran aground.

"There," he said. "That's one of them now."

Twist & Squirm

Starred (*) words are based on information in this issue.

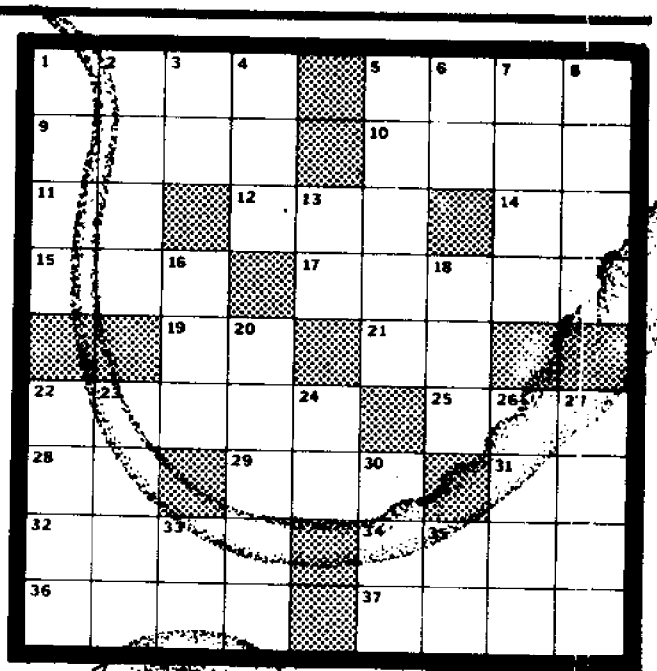
ACROSS

* 1. The bright shiny _____ of an octopus make it look almost human.
* 5. When you are cleaning octopus, watch out for the ink _____ (plural).
9. Past tense of "go," as in go, went. _____.
*10. Octopus can be caught with a pot or with a _____.
*11. The word "octopus" comes from the ancient _____ (abbr.) language.
*12. Some octopus grow to 22 pounds by the _____ of six months.
14. The number of months in (12 across) in Roman numerals.
*15. Octopus pots should be _____ flat on the bottom where they won't roll around.
*17. Octopus usually hunt at night and _____ in their dens during the day.
19. Letters meaning "that is," from the Latin "id est" (init.).
21. Limited Entry (init.).
*22. The reddish-brown color tone like that in octopus ink is called _____.
25. The Southern California city, _____ Angeles.
28. Attorney General (init.)
*29. The common name for "O. dofleini" is _____ (init.).
31. Abbr. for "karat," as in gold.
*32. Selling octopus for halibut bait could mean extra _____ for Alaska fishermen.
34. Preposition meaning "to go in."
*36. Tie a tight _____ to close that net bag or gunny sack, or your octopus is apt to escape.
*37. Part of the soft hooks used in drift-line octopus fishing.

DOWN

* 1. The female octopus faithfully tends her _____ until she dies.
2. The yellow part of a chicken's (1 down) is called the _____.
3. Northeast (abbr.) backwards.
* 4. "The Toilers of the _____," by Victor Hugo, is a famous novel about English Channel fishermen.
* 5. Unlike most other members of the mollusca family (crabs, clams and snails), the octopus has no _____.
6. Account of (abbr.).
* 7. Halibut _____ is a village in Kachemak Bay.
8. Hop, _____ and jump. (You can also _____ rope or _____ rocks across the water.)
9. Girl Scout (init.).
*16. Giant Pacific Octopus sometimes _____-toe along the bottom on their tentacles.
*18. One of the predators (enemies) of the octopus.
*20. The number of tentacles on an octopus.
*22. A handy thing in which to carry a squiggly octopus.
23. First governor of the State of Alaska, William A. _____.
24. Associated Press (abbr.).
*26. The Greek word meaning (20 down).
27. Opposite of "go."
30. One of Alaska's most valuable resources.
33. Fifth note of the musical scale.
35. Not "yes," but _____.

(Answers in November issue.)



Answers to September X-Word

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