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Crafty Carp Cookery

D. Deethardt

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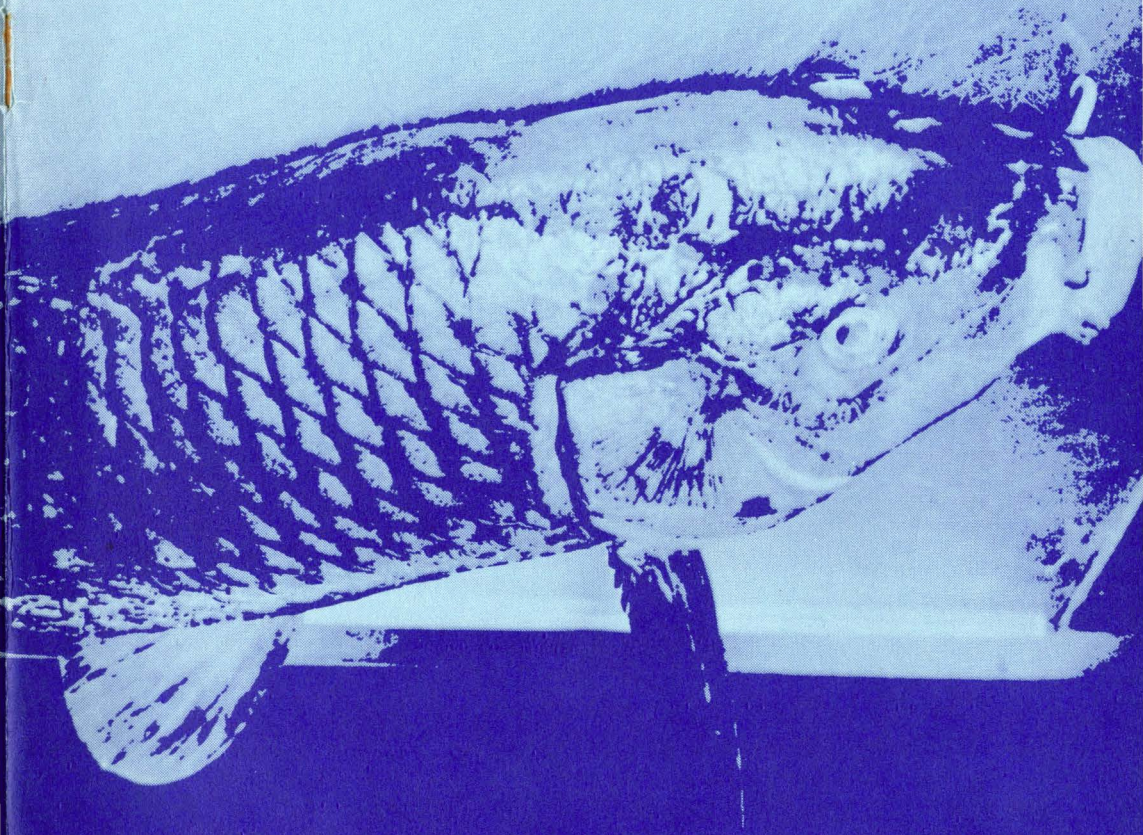
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Crafty Carp Cookery



Agricultural Experiment Station
South Dakota State University
Brookings, South Dakota

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Clarice Shank, left, and Shirley Mittan, right, assisted the author Dorothy Deethardt, center, during phases of the research and testing of these carp recipes.

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Appreciation is extended to all those persons who so ably and efficiently dressed the carp, especially Mrs. Clarice Shank and Mrs. Shirley Mittan; to the personnel of the Wildlife and Fishery Science Department and the commercial fishermen who helped us in obtaining carp at the right times; to the Brookings Locker Service for their cooperation with the smoking process of carp; to the people who evaluated the products through the several years of work; and to Gwen Yseth, Virginia Coudron and the Agricultural Information staff who helped make this bulletin possible.

Crafty Carp Cookery

Fishing is one of our country's most popular participant sports. However, many anglers probably give little thought to the excellent food value of the fish in their catch.

This may be especially true of the carp. The carp (*Cyprinus carpio*) is a rough, fresh-water fish commonly found throughout South Dakota (Figure 1), and is considered to have little eating quality.

However, in other parts of the world, this fish is cultivated as a food source. We can also give it a place of its own in our fishing world.

It's popularly believed that the feeding habits of the carp account for its not being acceptable as a food source. Carp are omnivorous feeders, feeding on shore and bottom animal matter under normal conditions. Algae, phytoplankton and plant fragments make up the vegetable part of their diet. This "bottom-feeding" habit is believed to produce off-flavors in the flesh, particularly in the dark tissue (*Musculus lateralis superficialis*) along the lateral line.

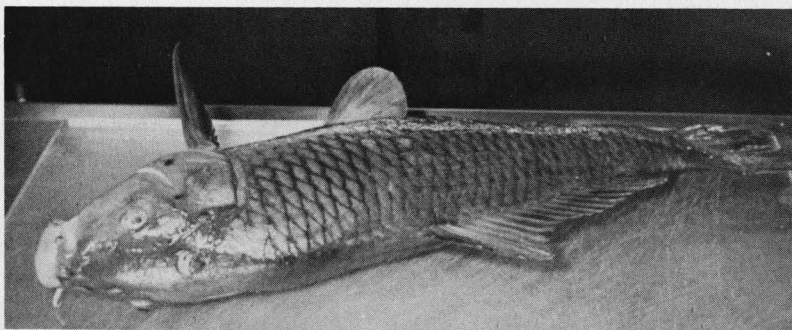
The truth is, undesirable flavors in fish come from sources such as pollution of the habitat by industrial effluents, fungal metabolites, or by consumption of food components that flavor the flesh. These flavors are probably transferred by direct absorption, or by an indirect means, such as through the blood stream. These foreign flavoring compounds are generally sequestered in the lipid or fatty tissue, which is most prevalent in the carp's dark tissue.

A study has been made on the acceptability of carp meat from several eastern South Dakota lakes and the Oahe Reservoir on the Missouri River. It was evident from this study that carp from these sources were acceptable for human consumption (1).

The nutritive value of fresh-water fish varies somewhat depending on the season of the year, geographical area of capture, size and sex of the fish, feeding habits and other factors. For this reason, only approximate nutrient values can be given for carp.

In the experiments conducted by home economists of the Agricultural Experiment Station at South Dakota State University, it was shown that carp which had been filleted and steam-cooked had: 70% moisture, 8.5% fat, 20.5% protein, and .64% ash. Carp, as all fish, provide a good source of high-quality protein, and constitutes a valuable food item for human consumption (1).

Fig. 1



Dressing Carp:

There are times when it is convenient for a homemaker to know how to handle freshly caught fish. Several different methods may be used, depending on what is to be done with the meat.

A simple and easy method to fillet any fish requires only two steps. Use a thin-bladed, sharp filleting knife to first remove the flesh from the bone, and then use a long-bladed filleting knife, preferably bevelled on one side (French fillet knife), to secondly remove the flesh from the skin.

Steps in filleting carp: Stun the fish with a quick blow to the head just above the eyes. It is not necessary to scale the fish.

Figure 2: First cut is made just behind the gills from the top of the fish's body cavity down to the heavy spinal bone.

Fig. 2

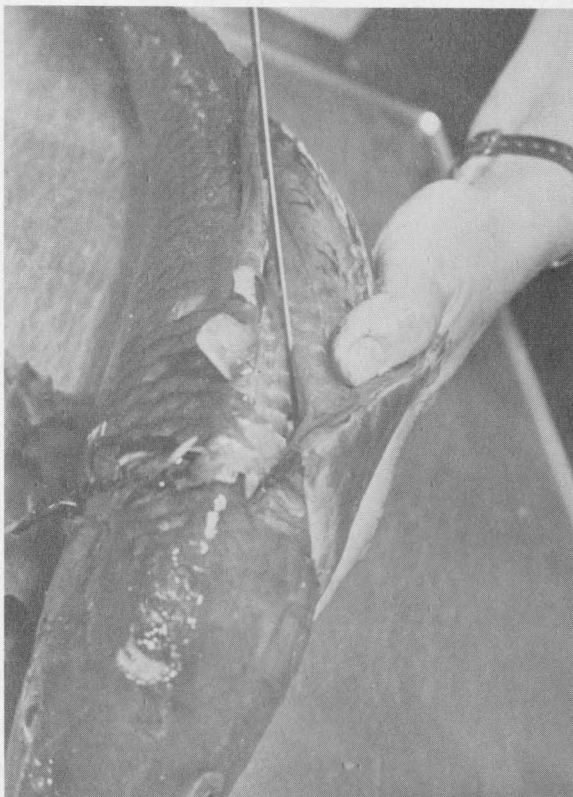
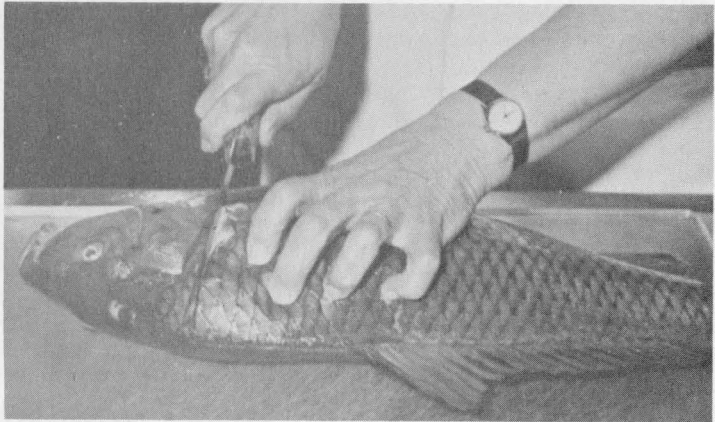


Fig. 3

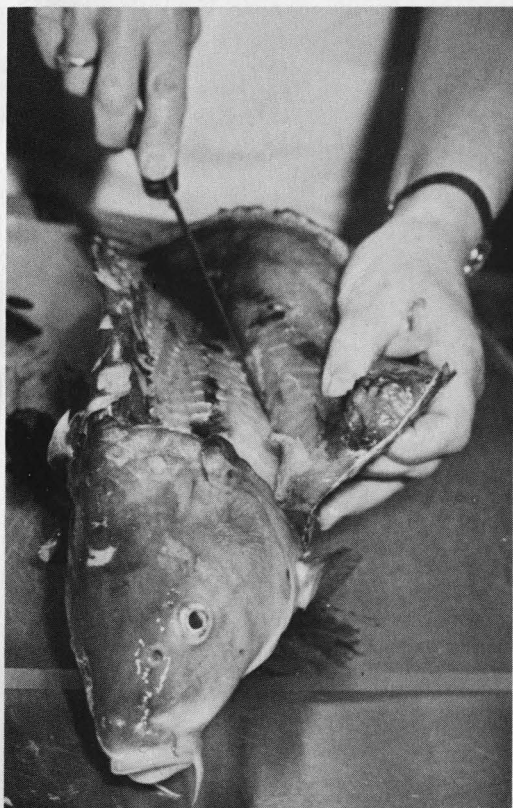


Fig. 4

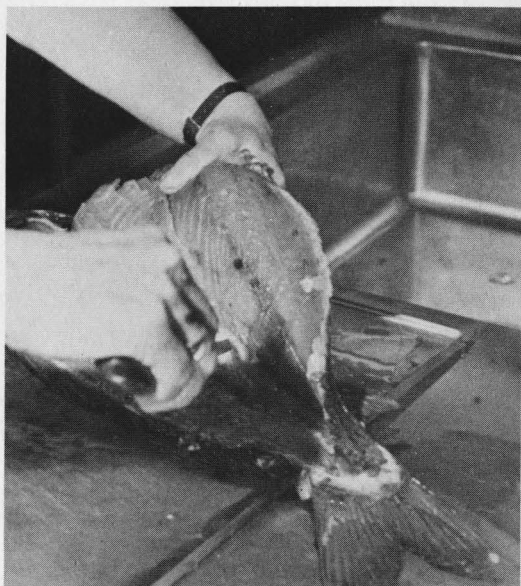


Fig. 5

Figures 3-4-5-6: Cut along the back fin and bone to the tail. Lift flesh from the top of the head, and with short sharp strokes of the knife follow the curve of the bone structure over the body cavity and back to the tail until fillet is completely separated from the bones.

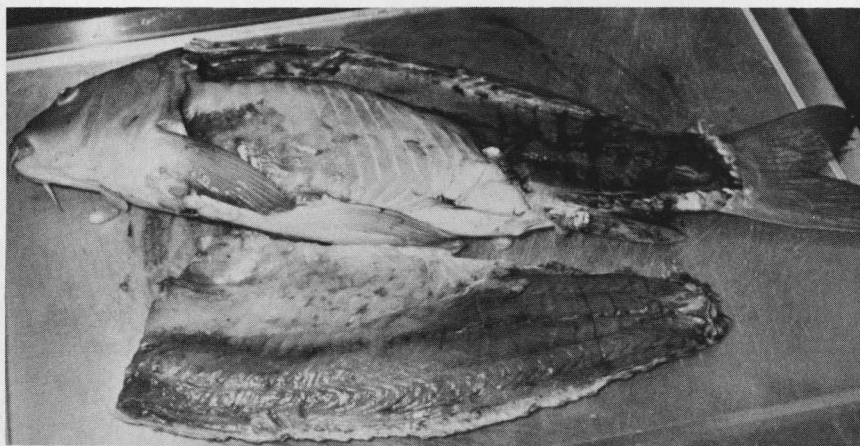


Fig. 6

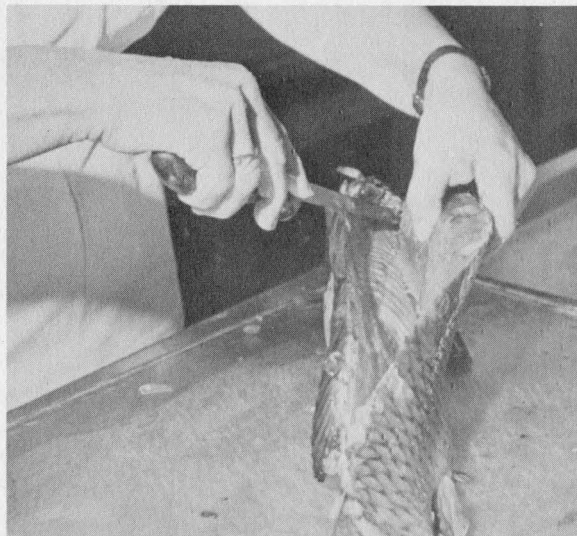


Fig. 7

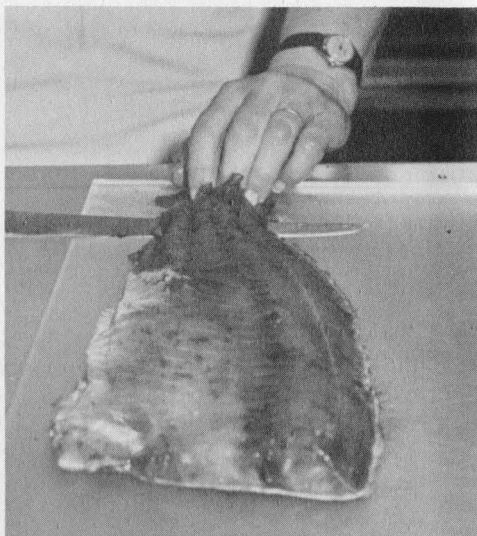


Fig. 8

Figure 7: Repeat same procedure for second side.

Figure 8: With skin side down, remove flesh from skin by grasping tail end with fingers. Cut down toward skin, then continue cutting between flesh and skin. Keep skin taut.

Figure 9: With the sharp fillet knife, make a V-shape cut along the lateral line of the fillet and lift out the dark flesh, which contains much of the fat and possibly some objectionable flavor. The depth and width of this area will vary. The fillet may be separated into two sections at this point.

Figure 10: A pair of trimmed fillets ready for immediate use or freezing for later use.

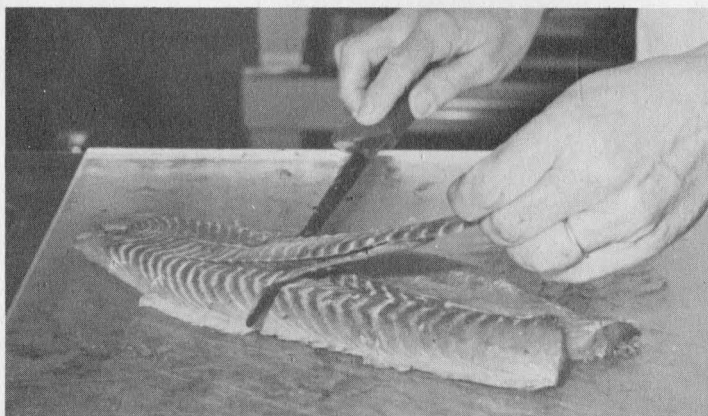


Fig. 9

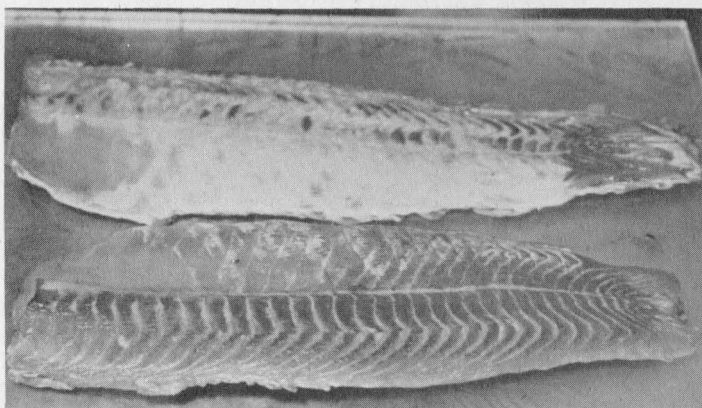


Fig. 10

Home Canning of Fish Products

One word of caution! The end product is only as good as the product you start with. Start with good fresh fish - alive if possible. Carp have the ability to stay alive for some time out of water, but don't take chances. Carp taken from icy wintertime waters will stay alive for several hours - overnight when packed in snow or ice.

The fundamental principle of canning is the application of heat to food sealed in containers for a period of time sufficient to destroy yeasts, molds or enzymes, and to destroy or inactivate any bacterial organisms likely to cause spoilage. With this principle in mind, let's enumerate some of the steps in canning fish products.

1. Product to be canned is fresh and of good quality.
2. Pressure canner must be in good repair - the seal secure, the pressure gauge tested for accuracy and the source of heat adjustable to maintain even pressure during processing. Fluctuation of pressure during the processing period can damage the product.
3. Use clean jars without chips on the rim edge that could interfere with proper sealing when using two-piece lids.
4. Use the proper size jar. Half pints and pints are best for fish products.
5. **Follow instruction book** for exhausting both jars and canner. Exhausting before sealing is necessary for cold-filled, raw-pack fish. Proper exhaustion of the canner is very important to maintain proper heat and pressure during processing.
6. Let canner cool until pressure gauge has returned to zero. If steam is released too fast, juice is drawn from the jar and a dry product results.
7. Cool jars away from drafts.
8. Check for a proper seal - now that freezers are more available, unsealed jars may be frozen to keep the product.
9. Clean off jars, mark with name of product and date. Store in a cool, dark place. Light often causes changes in appearance and flavor. It is best to use frozen and processed fish within one year of storage time.

Canning Procedure:

One often-heard complaint about carp is that many "y" bones seem to float in the upper portion of the fillet. Cooking or canning the meat under pressure will soften these small bones. The heavy skeletal bones will not be edible, but are less dangerous when softened.

Fish flesh is soft, with some species especially so. For example, carp and buffalo fish both yield a soft, white meat that can be made firmer by soaking in a salt brine. A 10 percent salt brine can be obtained by adding: a scant $\frac{1}{2}$ c. (125 gm.) salt to a gallon of water or a scant $\frac{1}{4}$ c. (62 gm.) salt to half a gallon of water. Two quarts of the brine solution are enough for 5 pounds of fish fillets. Keep the raw fillets in brine for one hour at room temperature. Drain well, and cut into pieces to fit into clean jars (either half pint or pint jars). Pack firmly with headspace of $\frac{1}{2}$ to $\frac{3}{4}$ inch. Add 1 teaspoon salt per pint.

Exhaust cooker for ten minutes. This is done by placing the filled, open jars in the cooker on a rack. The cooker should have about 2 inches of boiling water in it. Cover cooker and let steam for 10 minutes.

Remove each jar, wipe the top carefully. Any bit of grease, sand or fish left on the edge will keep the jar from properly sealing. Seal with a firm grip, but do not force the band on too tightly. Place the jars back in the hot cooker, seal and exhaust steam for about 10 minutes. Close valve and begin counting time when the pressure gauge is up to 10 pounds pressure.

Process for: 90 minutes for half pints
110 minutes for pints.

Let the cooker cool until gauge returns to zero, remove jars, let cool, check for sealing, label and store. If a jar does not seal, the fish may be frozen until used.

The preceding method was the most acceptable method of canning carp when used in recipes for cooked, flaked fish. Since some recipes call for "tuna style" canned fish, the following is a suggested canning procedure:

"Tuna Style" Canned Carp

Brine and pack in jars as preceding method, then add 1 tsp. salt and 2 tbsp. of salad oil per pint and proceed as previously mentioned.

You may also can spiced fish. Spiced fish does not blend well with other ingredients, but you may like it for variety.

Spiced Carp

Brine, drain fish and pack loosely in half pint jars. Fill jars with half-strength vinegar sauce and exhaust 20 minutes. Invert the containers on a wire rack and drain 3 to 5 minutes. Right the containers and fill with full strength hot vinegar sauce (leave headspace), seal and process as regular method for half pints.

Vinegar Sauce (enough for 3 or 4 half pints)

- 2 c. white vinegar
- 1 c. water
- 1 tbsp. sugar (15 gm.)
- 1 tsp. white pepper (1.8 gm.)
- 1 tsp. dry mustard (1.8 gm.)
- 1 tsp. whole clove (1.8 gm.)
- 5 or 6 cardamon seeds (0.94 gm.)
- Pinch shaved ginger root (0.94 gm.)
- 3 large bay leaves (0.94 gm.)

Add sugar and water to the vinegar. Tie spices loosely in cheesecloth and simmer in the vinegar solution for one hour. Strain, and use as previously directed for spiced fish.

Although the taste panel that evaluated these fish products did not care for a fish and tomato combination, you may like the combination of canned carp with tomato sauce:

Carp and Tomato Sauce

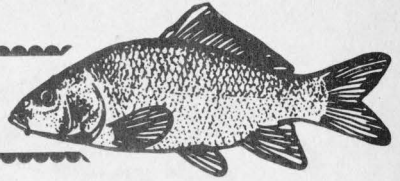
Brine, drain fish and pack loosely in half pint jars. Cover with tomato sauce (leaving headspace) 1 tbsp. or more per ½ pint. Exhaust 10 minutes. Clean top of jars and seal. Process as in the regular method for half pints.

Tomato Sauce

- 2 c. tomato puree
- ¼ tsp. horseradish
- ½ tsp. minced onion
- 1 tbsp. spiced vinegar (may use preceding Spiced Vinegar Sauce)
- ½ tsp. salt
- 1 tsp. sugar

Blend all ingredients. Simmer until reduced to about half concentration; use as directed above.

Fish Recipes



Additional recipes for canning carp include carp balls and carp chowder, both are different, but good, especially the chowder; it's easy to prepare for a quick, hearty meal.

Canned Carp Balls

- 10 lb. raw carp (125 gm./gal. brine)
- 1 small onion (50 gm.)
- 1 clove garlic (0.7 gm.; garlic powder, ¼ tsp.)
- 1 tbsp. salt (20 gm.)
- 1 tsp. white pepper (2.5 gm.)
- 1 tsp. mace (2 gm.)
- 3 eggs
- 3 c. water
- Fish broth or chicken bouillon

Fillet the fish, brine the fillets for 1 hour. Cover head and bones with water, boil while making balls.

Put brined fillets, onion and garlic through food chopper twice, using the fine blade. Add salt and seasonings. Mix well with wooden spoon or hands (electric beater may be used). Add 1 egg and 1 c. water at a time and work to a smooth paste. Repeat until the 3 eggs and 3 c. water are used. Add more water if needed. Shape into balls.

Strain the fish broth and bring to boil. Drop the fish balls in boiling broth and cook 10 minutes. Pack in ½ pint jars within ¾ inch of the top. Fill with the boiling broth. Seal and process in the pressure canner for 60 minutes at 10 pounds of pressure; 4 to 5 balls per ½ pint. Eight balls to a pint, and increase cooking time to 70 minutes at 10 pounds pressure.

To serve: Heat balls in broth, drain balls and make an egg sauce using the remaining broth as part of the liquid (p.26).

This recipe can easily be divided by thirds for a smaller amount of fish.

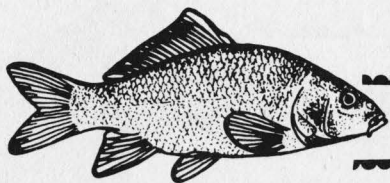
Canned Carp Chowder

- | | |
|--------------------------------|------------------------|
| | 12 pint portion |
| ¼ c. cubed potato (generous) | 5 lb. |
| ¼ c. cubed raw carp (generous) | 5 lb. |
- Put into ½ pint jar and cover with dressing.

Dressing

- | | |
|----------------------------------------------|--------|
| About 3 slices salted pork or bacon (70 gm.) | ¾ lb. |
| ½ - ⅓ c. chopped onion (70 gm.) | ¾ lb. |
| 1 pt. fish broth or chicken bouillon | 2 qt. |
| 2 tbsp. flour | ½ c. |
| ½ tsp. white pepper | 2 tsp. |
| ½ tsp. salt | 2 tsp. |

Fry bacon and onion, blend in flour and broth, add seasonings, simmer to boiling. Cover potato and fish with hot dressing, seal jars, process 60 minutes at 10 pounds pressure. Sauce enough for 4 - ½ pint jars. Increase cooking time to 90 minutes at 10 pounds pressure for pint jars. Before serving, dilute with equal part milk. Heat and serve.



The next two recipes for pickled carp are quite different. The first uses raw fish, while in the second recipe the fish is cooked before pickling. Both products need refrigeration and are very good.

Pickled Carp

2 lb. raw carp fillets

Sauce

½ c. white wine vinegar
½ c. brown sugar (100 gm.)
1¼ c. white vinegar
1 tbsp. pickling spice
Onion, thinly sliced

Boil spice in wine vinegar and sugar. Mix with vinegar. Cut cleaned and trimmed carp fillets into small pieces. Layer fish with sliced onion, sprinkle with salt. Pour hot vinegar mixture over fish. Let stand 48 hours. Yield 1½ quarts. Fish should be loose in jar. Refrigerate. Keeps about a month. Wide mouth jars work best.

Cooked Pickled Carp

4 lb. raw carp fillets
1 tbsp. salt (20 gm.)
1 qt. water

Sauce

1 c. cooking water
2 c. vinegar
1 oz. whole pepper (28 gm.)
1½ oz. nutmeg (42 gm.)
1 oz. mace (28 gm.)
2 tbsp. salad oil

Place fish in cheesecloth, simmer or steam 45 minutes in salted water. Drain. Cool.

Make a sauce of cooking water, vinegar and spices. Cook 5 minutes. Cool. Pour cold sauce over cold fish and add salad oil to make a layer of oil on top of fish. Cover and store in refrigerator. Will keep several months. Makes 4 pints. Wide mouth jars work best.

Another way to get rid of the small bones in carp is to grind the fillets with seasonings. Several products may be made with fresh ground meat. It is best to grind fish when it is still partially frozen or add crushed ice to fresh fillets, omit water when using ice. Fish sausage is much easier to slice when frozen.

Carp Sausage I

- 1 lb. carp fillets, partially thawed (454 gm.)
- 1½ tsp. salt (8 gm.)
- Dash black pepper (0.9 gm.)
- 2½ tbsp. rice flour (20 gm.)
or 1 tbsp. all-purpose flour (10 gm.)
- ½ tsp. sage (0.6 gm.)
- ¼ tsp. thyme (0.3 gm.)
- ¼ tsp. sugar (1 gm.)
- ¼ tsp. onion powder (1.6 gm.)
- Scant ½ c. hard shortening (90 gm.)
- ¼ c. water

Grind fish through coarse blade. Mix in seasonings and water. Add shortening that has been melted and cooled. Grind again through a fine blade. Form into small patties or shape into a roll about 8 inches long on wax paper or plastic wrap. Freeze, slice into half inch slices. Fry in a lightly greased fry pan until well-browned, about 10 minutes. Turn as necessary. Serve hot, either plain or with a favorite sauce.

The color of fish sausage is rather uninteresting. With the addition of a quick curing salt, it takes on a reddish color which seems to make it more acceptable.



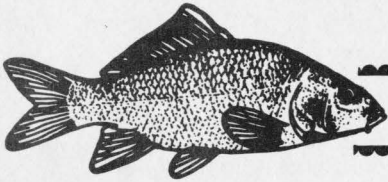
Carp Sausage II

- 1 lb. filleted carp, partially thawed (454 gm.)
- ½ tsp. salt (2.2 gm.)
- ⅛ tsp. white pepper (0.2 gm.)
- 2 tsp. quick curing salt (9 gm.)
- 2½ tbsp. rice flour (20 gm.)
- ½ tsp. ground sage (0.6 gm.)
- ¼ tsp. onion powder (0.6 gm.)
- Scant ½ c. hard shortening (90 gm.)
- ¼ c. water

Grind fish through coarse blade. Mix in seasonings, water, shortening that has been melted and cooled. Grind again through fine blade. Shape into a roll about eight inches long on wax paper or plastic wrap, refrigerate overnight. Then freeze, slice half inch slices and fry in a lightly greased fry pan about 10 minutes; turn as necessary.

Carp Salami

Use the above recipe. Shape the meat into a roll on aluminum foil. Bring edges together and fold down tight. Refrigerate 24 hours. Fold up ends to seal, then boil gently in a kettle with just enough water to keep boiling for one hour. Cool and refrigerate. Fish Salami is ready to eat. Will keep a week or two in the refrigerator or may be frozen. Do not keep any seasoned fish product in frozen storage very long or it will become strong in flavor.



Finely ground carp fillets may be used in other delicious ways as indicated in the next group of recipes.

Carp and Potato Pancakes

4-6 servings

- 1 lb. raw carp fillets
- 3 eggs, beaten
- 2 tbsp. flour
- 2 tbsp. grated onion
- 1 tbsp. chopped parsley
- 2 tsp. salt
- Dash of nutmeg
- Dash of black pepper
- 2 c. finely grated raw potato
- Applesauce

Grind fish through food chopper twice (coarse and fine blades). Add flour and seasonings to well-beaten eggs. Stir in onion, parsley, fish and potatoes. Blend thoroughly. Drop ⅓ cup on hot, well-greased griddle or frying pan, flattening slightly. Brown and turn. Cooking time 6-8 minutes. Drain on paper toweling and keep warm. Serve with hot applesauce or hot drawn butter sauce (p.24).

Carp Balls Poached in Milk

4 servings

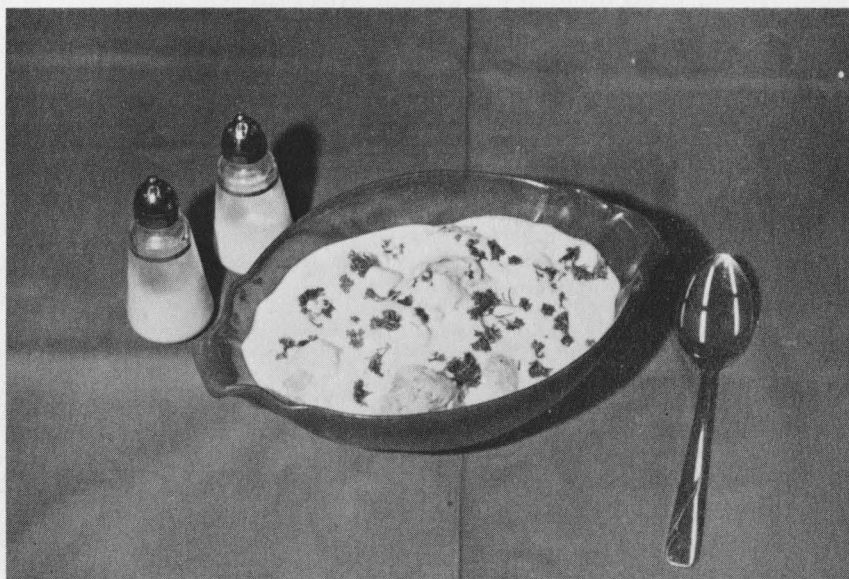
1 lb. carp fillets
½ c. onion, finely chopped
2 tsp. salt
¼ tsp. pepper
⅛ tsp. mace
1 egg, beaten
2 tbsp. melted butter
¼ c. bread crumbs
½ c. milk

Sauce

2 ½ c. milk
3 tbsp. fat (butter)
4 tbsp. flour
½ tsp. salt
⅛ tsp. pepper
Chopped parsley

Grind fillets through a food chopper three times, using a coarse blade and then a fine blade. Add the onion, seasonings, egg, melted butter, and the crumbs soaked in ½ c. milk. Shape the mixture into small balls. Scald 2½ cups of milk in a double boiler, add balls and cook 15 minutes. Remove the balls to a serving dish. Make sauce by melting butter, adding the flour, then the hot milk gradually while stirring. Season with salt and pepper and pour over the balls. Garnish with chopped parsley.

Variation: The fish mixture used for the fish balls may be put in a loaf pan, covered with bacon strips, baked at 350°F. (177 C.) for 50 to 60 minutes to make an excellent fish loaf. Serve with Tartar Sauce I. (p.26).



Carp and Bulgur Pudding

6 servings

- 2 c. cooked Bulgur
- 1¼ lb. raw carp fillets, finely ground
- 1 can (10½ oz.) cream of mushroom soup
- 2 c. half and half
- 1½ tsp. salt
- ⅛ tsp. nutmeg
- 1 egg, slightly beaten

Blend all ingredients in a 2 qt. baking dish. Place in pan of hot water and bake uncovered in a 350°F. (177 C.) oven for 30 to 35 minutes or until set. Watch closely; it will water out if overdone. Time will depend on thickness of pudding. (Reference #2)

Small bones may be softened by pressure cooking, either in a large canner type or a small saucepan type cooker. The following chowder recipe may be made in a pressure saucepan. The hors d'oeuvres are a little more work but delicious, and can be prepared ahead of time then deep fat fried when ready to serve.

Carp Chowder

4-5 servings

- 1½ lb. raw fish fillets
- 1 c. water
- 2 strips bacon, diced
- ¼ c. onion, diced
- 2 c. potato, diced
- 2 c. whole milk (evaporated milk plus water
or skim milk plus butter or bacon drippings)
- 1½ tsp. salt
- Dash of pepper

Process fillets 1 hour at 15 pounds in pressure saucepan with water or use inset pan in larger pressure canner. Use juice in pan for cooking the vegetables. Remove the fish, add the vegetables and enough water to the broth and boil until vegetables are tender (about 15 minutes). Add milk, fish, salt and pepper. Bacon may be diced and cooked with the vegetables or fried then crumbled over the chowder before serving. Simmer and serve hot.



Carp Hors d'oeuvres

Brine fish fillets (125 gm./gal. water) for 1 hour. Stack fillets on cheesecloth to form blocks $\frac{3}{4}$ inch thick. Process 1 hour at 15 lb. pressure. Cool, remove cheesecloth and freeze blocks of fish on a tray. After frozen, saw blocks into strips and cube. Keep frozen.

Make batter:

- 1 egg, slightly beaten
- 1 c. milk
- 1 c. flour
- $\frac{1}{2}$ tsp. salt

Beat until smooth.

Dip frozen cubes in batter, drain on a rack, then roll in bread crumbs. Return to freezer or deep fat fry immediately in oil at 375°F. (190 C.) for 2 to 3 minutes or until delicately brown. Serve hot.

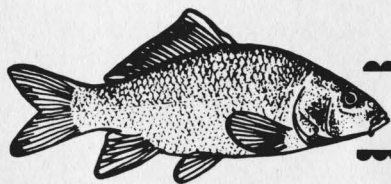
Baked Carp

This dish takes long slow cooking, a good one to start in the morning of that all-day meeting. It will be ready to serve the family in the evening. Just add your favorite fish sauce plus a crisp salad and supper is ready.

4 servings

- 4-5 lb. carp fillets
- Peanut oil
- Salt and pepper
- 3 slices of bacon
- 6 green onions, sliced

Put a large piece of cheesecloth dipped in peanut oil in an oiled roasting pan. Season fish with salt and pepper and place on the cheesecloth. Cut bacon slices into halves and arrange on top of fish. Add boiling water to depth of 1 inch. Place onions around fish. Cover pan and bake in preheated very slow oven (200°F., 93 C.) for 8 hours. Lift fish out carefully to a serving platter. Serve with your favorite sauce.



The following group of recipes use canned or precooked fish with edible bones. These have all been adjusted to the mild flavor of carp. A strong-flavored fish will give different results. Fish entrees plus a crisp salad will make a good meal for anyone.

Carp Loaf I

4 servings

- 1 pt. canned carp
- 20 crushed soda crackers
- 1 beaten egg
- 1 c. milk

Mix ingredients together carefully and bake in greased and crumbed single loaf bread pan at 350°F. (177 C.) for 1 hour or until firm and nicely browned.



Carp Loaf II

4 servings

- 2 c. flaked cooked carp (1 pt.)
- 1 tbsp. lemon juice
- 1 c. medium white sauce
- ½ c. milk or fish stock or half and half
- ½ tsp. salt
- 1 beaten egg
- ½ c. chopped celery
- 1 c. dry bread crumbs (divided)

Mix all ingredients but fish - fold fish in last to avoid flaking too fine. Put in greased and crumbed loaf pan. Sprinkle a few crumbs on top. Bake in moderate oven 350°F. (177 C.) for 30-35 minutes or until firm and nicely browned.

Carp Loaf III

4 servings

- 2 c. flaked, cooked carp (1 pt.)
- ½ c. chopped celery
- 1 c. bread crumbs
- ¼ c. chopped green pepper
- 1 c. evaporated milk
- 1 beaten egg
- ½ tsp. salt
- 2 tsp. lemon juice

Mix all ingredients but fish. Blend in fish carefully. Pour into greased and crumbed loaf pan. Bake in moderate oven 350°F. (177 C.) for 30-35 minutes or until firm and nicely browned.

Carp Balls

4 servings

- 2 c. flaked cooked carp (1 pt.)
- 2 c. mashed potatoes
- 1 egg
- Salt and pepper
- Deep fat frying oil

Use canned carp or cook fresh carp in a pressure cooker to soften bones (1 hr. at 15 pounds). Remove fish, chill, flake. Blend flaked fish, mashed potatoes, egg, salt and pepper to taste. Chill. Shape in balls, roll in flour, and deep fry until golden brown.

Carp and Potato Patties

4-5 servings

- 1 c. flaked, cooked carp
- 2 c. mashed potatoes
- $\frac{1}{4}$ tsp. salt
- $\frac{1}{8}$ tsp. pepper
- 1 egg
- 1 tbsp. butter
- 2-3 tbsp. flour

Mix fish, potato, egg and seasonings together. Form patties and dip in flour. Fry in butter to golden brown. Serve hot with Drawn Butter Sauce (p.24).

Carp and Flat Noodles (Lasagna)

6 servings

- 1 lb. cooked or canned carp, flaked
- 1 tbsp. olive oil
- 1 c. onion, chopped
- 1 clove garlic, minced
- 1 1-pound can peeled tomatoes
- 1 8 oz. can tomato sauce
- 1 tsp. salt
- $\frac{1}{4}$ tsp. pepper
- $\frac{1}{4}$ tsp. dried rosemary
- $\frac{1}{2}$ - $\frac{3}{4}$ lb. lasagna or any flat noodles, freshly cooked
- $\frac{1}{2}$ lb. mozzarella cheese (NOT pre-sliced)
- $\frac{1}{2}$ lb. ricotta cheese
- $\frac{1}{4}$ - $\frac{1}{2}$ c. grated Parmesan cheese

Heat olive oil in large, heavy skillet and lightly saute onion and garlic. Add canned tomatoes, tomato sauce and seasonings, stir well, cover and simmer slowly for 20 minutes or until ingredients are blended and sauce is no longer runny. Add fish, blend carefully and pour $\frac{1}{4}$ mixture over bottom of a baking dish (8 x 12 inches). Arrange $\frac{1}{3}$ lasagna over sauce, spread $\frac{1}{3}$ mozzarella and ricotta cheese over lasagna. Repeat these layers 2 more times and top with remaining fish-tomato sauce. Sprinkle with grated Parmesan and bake, uncovered, for 30 minutes in oven pre-heated to 350°F. (177 C.). Remove from oven, let stand 5 or more minutes before cutting.

Carp Croquettes

- 1 c. flaked, cooked carp
- 4 tbsp. butter or margarine
- 4 tbsp. flour
- 1 c. milk
- ¼ tsp. salt
- 1 egg, beaten
- 2 tbsp. flour
- ½ c. bread crumbs
- Deep fat frying fat or oil

Melt butter in saucepan, blend in flour and salt until smooth. Add milk, cook to a boil, and until sauce draws away from side of pan. Stir constantly. Carefully stir in flaked fish. Chill. Beat egg till foamy. Shape croquettes (about egg size), roll in flour, egg and crumbs, being sure all areas are coated with egg before crumbing. Deep fat fry at 375°F. (190 C.) about 5 minutes or until golden brown, drain on absorbent paper. Serve hot, plain or with a sauce as Drawn Butter Sauce (p.24).

Carp Casserole

6 servings

- 2 c. flaked, cooked carp
- 2 c. cooked rice
- ¾ c. chopped onion
- ¼ c. diced green pepper
- 2 tbsp. butter
- 1 can cream of celery soup
- ½ c milk
- ½ -1 c. bread or cracker crumbs

Flake fish. Cook onion and green pepper in butter until tender. Add fish and rice, mix lightly. Blend soup and milk. Coat the bottom of a well-greased 2 qt. casserole with crumbs. Cover with alternate layers of fish and soup mixture. Top with remaining crumbs. Bake in moderate oven 350°F. (177 C.) for 20 to 30 minutes.



Flaked Carp Omelet

4-5 servings

- 1 c. cooked or canned flaked carp
- 1 tsp. olive oil or bacon fat
- 1 tsp. finely chopped onion or shallot
- 2 tbsp. butter
- 1 tbsp. cooking oil
- 4-6 eggs
- ½ tsp. salt
- ⅛ tsp. pepper
- 1/16 tsp. garlic powder
- 1 tsp. fresh basil (minced) or ⅛ tsp. dried basil
- 2 tbsp. liquid (water or milk)

Heat olive oil or bacon fat in small heavy skillet. Add minced onion or shallot and lightly saute. Turn off heat, add flaked fish to skillet, stir and cover. Heat butter and cooking oil in another large, heavy skillet until sizzling hot but not smoking. Break eggs into mixing bowl, beat lightly and stir in seasonings, liquid and fish mixture from first skillet. Pour omelet into large skillet, turn down heat to medium and gently lift edges of omelet as it gels so that uncooked portion will run underneath. If egg starts to stiffen, turn heat to low. It is done when bottom is very pale gold and top is soft but no runny egg remains. Serve on pre-heated plates.

Variation: With cheese. Add grated cheese to egg mixture before cooking.

Carp Souffle Casserole I

6 servings

- 2 c. cooked carp (1 pt.)
- 2 c. seasoned mashed potatoes
- ¼ c. finely chopped onions
- 1 c. green peas (cooked)
- 1 c. medium white sauce
- 2 egg whites, beaten

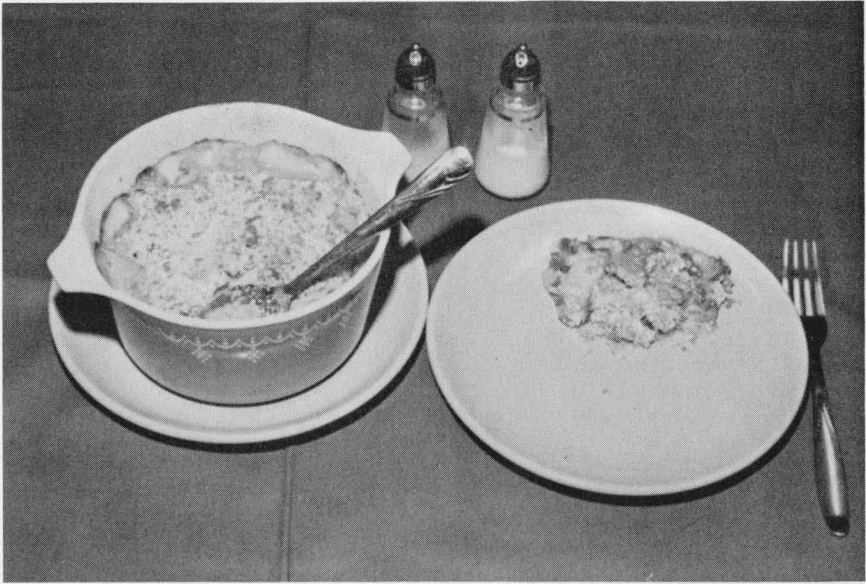
Flake fish. Combine potato and onion, place in bottom of greased 2 qt. casserole. Cover with peas. Add fish to white sauce. Fold in beaten egg whites and pour over vegetables. Bake in moderate oven 350°F. (177 C.) for 45 minutes or until top is golden brown. Serve immediately.

Carp Souffle II

5-6 servings

- 2 c. cooked or canned carp (1 pt.)
- 3 tbsp. butter
- 4 tbsp. flour
- 1 c. liquid (from fish plus milk)
- ½ tsp. salt
- ⅛ tsp. pepper
- 3 egg yolks, beaten
- 3 egg whites, beaten

Drain fish and save liquid, flake fish. Cook butter and flour until bubbly. Add liquid gradually. Cook and stir until thick and smooth. Season with salt and pepper. Cool slightly and fold in egg yolks, then add flaked fish. Fold beaten egg whites into mixture. Pour into ungreased 1½ qt. casserole. Place casserole in shallow pan of hot water and oven poach in a moderate oven 350°F. (177 C.) for 45 minutes or until set and lightly browned. Serve immediately.



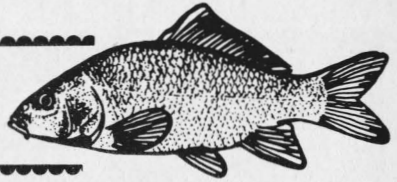
“Down East” Baked Carp

4 servings

- 1 c. onion
- $\frac{2}{3}$ c. green pepper
- 2 c. celery (6 stalks)
- $\frac{1}{2}$ c. mushroom - canned or fresh (6 whole)
- 2 tbsp. butter
- 2 c. cooked or canned carp (1 pt.)
- 2 c. cream sauce or 1 can mushroom soup
- $\frac{1}{2}$ tsp. salt
- Paprika
- Nutmeg
- 1 tsp. lemon juice
- $\frac{1}{2}$ c. buttered crumbs
- $\frac{1}{2}$ c. grated Swiss cheese (optional)

Cut onion, pepper, celery and mushrooms into small pieces and cook until tender in butter. Pour in cream sauce or soup, add seasonings and lemon juice. Mix. Add coarse flaked fish, mix gently. Pour into buttered and crumbed baking dish ($1\frac{1}{2}$ qt.) and cover with buttered crumbs and a generous layer of cheese (may be mixed together). Bake in a moderate oven 350°F. (177°C.) 25 to 30 minutes or until golden brown.

Salads



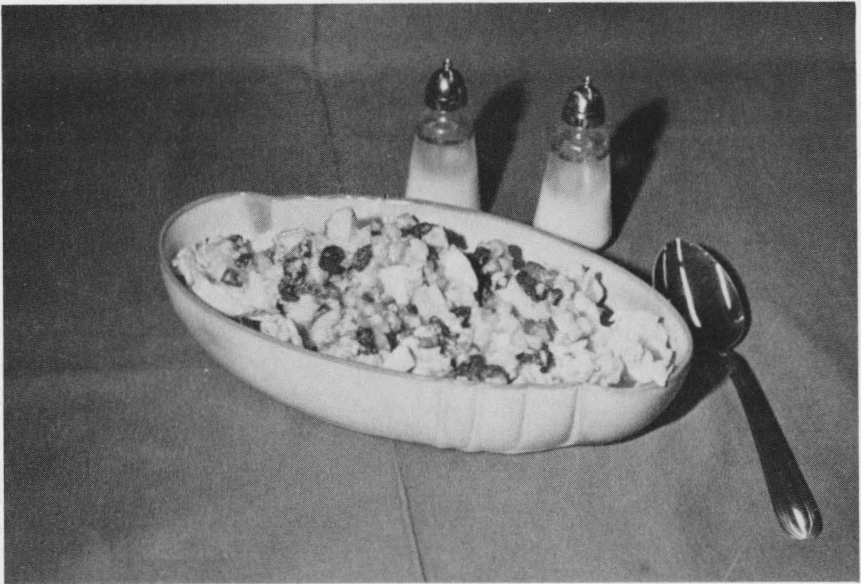
Processed fish lends itself well to salads. Carp is a soft meat and easily broken too fine to identify as a main ingredient. Chill canned carp before using and avoid excessive mixing when making salads or any other combined ingredient dishes.

Main Dish Salad

4 servings

- 1 c. diced raw apple
- ½ c. diced celery
- ¼ c. raisins
- 1 - 1½ c. cooked carp, broken in chunks
- Tart French dressing
- Lettuce cups

Mix apple, celery and raisins with French dressing (add 1 tbsp. lemon juice for tartness). Carefully blend in the fish. Serve in lettuce cups.





Carp Crunch Salad

6 servings

- 2 c. cooked carp - tuna style or plain
- 1 tbsp. finely chopped onion
- ¼ c. diced green pepper
- 2 c. finely shredded cabbage
- 2 tbsp. vinegar
- ¼ c. salad dressing
- 1 c. salad croutons

Flake fish. Combine onion, green pepper and cabbage. Mix vinegar with salad dressing and combine with vegetables. Just before serving, add fish and croutons, reserve a few to sprinkle on top, toss lightly together. Serve on lettuce leaves.

Carp Salad

4-6 servings

- 2 c. cooked flaked carp (tuna style)
- ½ c. salad dressing
- ½ c. diced celery
- ½ c. peas
- 2 tbsp. chopped sweet pickle
- 2 tbsp. chopped onion
- 3 hard cooked eggs, diced
- Lettuce garnish

Mix all ingredients with a fork except lettuce. Add fish last to avoid breaking into too small of pieces. Spoon carefully onto lettuce leaves before serving.

Carp-Banana Salad

4 servings

- 1 c. cooked carp
- 1 medium ripe banana
- ½ c. drained, diced pineapple
- ½ c. diced celery
- 2 tbsp. chopped gherkins or sweet pickle relish
- ½ tsp. salt
- 2 tbsp. mayonnaise or French dressing

Flake fish. Slice banana and mix with pineapple. Add celery and gherkins. Sprinkle with salt. Add flaked fish and mayonnaise and toss lightly. Serve on lettuce cups.

Carp Cranberry Mold

4-6 servings

Bottom layer

- | | |
|--------------------------|---------------------------|
| 1 c. cooked carp (½ pt.) | ¼ c. salad dressing |
| ½ c. diced celery | 1 tsp. unflavored gelatin |
| ½ tsp. salt | ½ c. cold water |

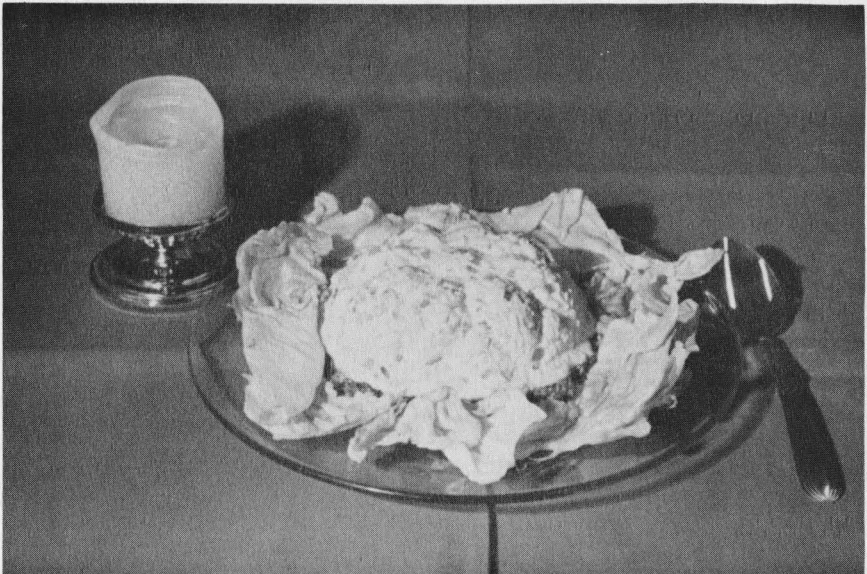
Top layer

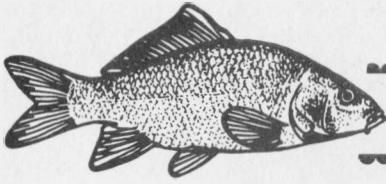
- | | |
|--------------------------|---------------------------|
| 1½ c. fresh cranberries* | 2 tsp. unflavored gelatin |
| ½ c. sugar | ½ c. cold water |
| ½ c. boiling water | |

Bottom layer—Combine celery, salt and salad dressing. Soak gelatin in cold water and dissolve over hot water. Stir into celery mixture. Carefully blend in fish. Place in a mold which has been rinsed in cold water. Chill until firm.

Top layer—Cook cranberries with sugar and boiling water for 5 minutes after skins stop bursting. Soak gelatin in cold water and dissolve over hot water. Stir into cranberry sauce and allow to cool but not set. When fish layer is firm, pour on cranberry layer and chill until firm. Unmold and garnish with lettuce or other greens.

* Small can of cranberry sauce may be substituted for fresh berries. Omit sugar and boiling water.





Sandwiches may be plain or fancy. Canned carp, with a few added ingredients, makes a nice filling when used with well-buttered slices of bread.

Carp Salad Sandwiches

4 servings

- 1 c. flaked carp - plain or tuna style
- ½ c. chopped celery
- 1 tbsp. sweet pickle relish
- 1 tbsp. chopped onion
- ¼ c. mayonnaise
- ⅛ tsp. salt

Blend well, spread on well-buttered bread and cover with a buttered slice of bread. One secret of a good sandwich is to have the bread well-buttered.

Carp Apple Sandwich Spread

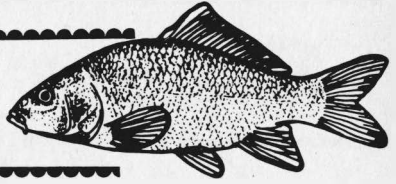
2 cups or 8 sandwiches

- 1 c. flaked, canned carp, plain or tuna style
- 2 c. finely diced unpeeled apple
- 1 tbsp. lemon juice
- ⅓ c. mayonnaise

Sprinkle apple with lemon juice. Combine flaked fish, apple and mayonnaise and mix lightly. Proceed as above.



Roe



When filleting female carp, carefully separate the roe (eggs or egg sac) from the viscera (internal organs) and save for cooking.

Carp-Roe

Clean the roe by removing all bit of viscera and washing in cold water. Tie in a cheesecloth and place in boiling water to cover, to which has been added 1 tbsp. each of salt and vinegar. Reduce the heat and simmer about 15 to 20 minutes. Drain.

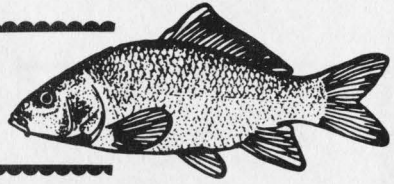
This is just one way of using roe. It is different, but tasty.

Roe Cutlets

- 2 c. par-boiled roe
- 2 slices bacon
- $\frac{3}{8}$ c. thick white sauce
($\frac{1}{2}$ c. milk, 2 tbsp. butter,
2 tbsp. flour, $\frac{1}{4}$ tsp. salt)
- 1 tsp. salt
- $\frac{1}{4}$ tsp. pepper
- 1 egg beaten with 2 tbsp. cold water
- Fine dry bread crumbs

Break the roe into pieces and smooth out the lumps with a fork. Fry the bacon crisp, and break it into pieces. Mix roe, bacon, sauce and salt and pepper. Chill the mixture and form it into flat cakes. Roll them in crumbs, dip in beaten egg, and roll in crumbs again. Fry in the bacon fat over low heat until brown on both sides. Serve hot with Easy Tomato Sauce (p.26).

Sauces



Sauces for fish: Many prefer the natural flavor of fish without any sauces added. Others find the conventional few drops of lemon juice insufficient and prefer the additional flavorings of particular sauces.

The benefits obtained from the use of sauces with fish are threefold.

1. The savory fragrance of the sauces adds new flavor to stimulate the appetite. 2. Their color contrast tempts the eye and the palate. 3. Their richness adds to the food value of any fish food.

Choose a sauce to accentuate the fine qualities in fish. The right sauce blends with the natural flavor of fish, rather than disguising or concealing it.

The following sauce recipes were tested as a complement to carp rather than to a particular dish. A favorite sauce may be used, but try others for variety.

Drawn Butter Sauce

1 cup

- 4 tbsp. butter, divided
- 2 tbsp. flour
- ½ tsp. salt
- ⅛ tsp. pepper
- 1 tsp. lemon juice
- 1 c. hot water or fish stock

Melt 2 tbsp. butter, add flour and seasonings, blend in hot water. Cook until thick. Add lemon juice and stir in remaining butter in small bits until melted and blended. Serve warm.

Dill Sauce

1½ cup

- 2 tbsp. butter
- 3 tbsp. finely chopped onion
- ½ tsp. dill seed
- 1 tbsp. finely chopped parsley
- 1 tbsp. flour
- ½ c. boiling water
- 1 c. evaporated milk
- ¼ tsp. salt
- Dash of pepper
- 1 tbsp. lemon juice

Melt butter in saucepan, add onion and dill seed. Cook until onion is tender. Stir in parsley and flour. Blend in boiling water, cook and stir until thickened. Gradually add milk and reheat. Add salt and pepper. Stir in lemon juice just before serving. Serve hot.

Cucumber Dressing

1 cup

- 1 medium cucumber
- $\frac{1}{4}$ tsp. salt
- $\frac{1}{2}$ c. whipping cream
- 2 tbsp. vinegar

Peel cucumber, chop finely and season with salt. Allow to drain thoroughly. Whip cream until thick but not stiff. Add vinegar gradually and continue beating until mixture is stiff. Fold in drained cucumber.

Lemon Sauce I

$\frac{3}{4}$ cup

- $\frac{1}{2}$ c. butter
- $\frac{1}{4}$ c. lemon juice

Melt butter. Blend in lemon juice, serve warm.

Lemon Sauce II

1 $\frac{1}{4}$ cup

- $\frac{1}{4}$ c. mayonnaise
- 2 tbsp. flour
- 1 c. milk
- 1 tbsp. lemon juice
- 1 tsp. grated lemon rind
- 1 tbsp. chopped parsley
- $\frac{1}{4}$ tsp. salt

Blend mayonnaise and flour in saucepan. Stir in milk and cook until thickened. Slowly add lemon juice. Stir in grated rind, parsley and salt.

Lemon Parsley Butter Sauce

6 servings

- 2 tbsp. lemon juice
- 2 tbsp. chopped parsley
- $\frac{1}{4}$ c. melted butter
- $\frac{1}{2}$ tsp. salt
- $\frac{1}{8}$ tsp. pepper

Add lemon juice and parsley to melted butter. Season. Serve hot. Lime juice may be substituted for lemon juice.

Mustard Sauce

$\frac{3}{4}$ cup

- 2 tbsp. butter
- 1 tbsp. flour
- $\frac{1}{4}$ c. prepared mustard
- $\frac{1}{2}$ c. dairy sour cream

Melt butter over low heat. Blend in flour and mustard. Cook until thickened, stirring constantly. Stir in sour cream and heat.

Tartar Sauce I

1¼ cups

- 1 c. mayonnaise
- 1 tbsp. chopped capers
- 1 tbsp. chopped olives
- 1 tbsp. chopped pickles
- 1 tbsp. chopped parsley (optional)

Combine all ingredients just before serving.

Tartar Sauce II

1 cup

- ½ c. whipping cream
- 2 tbsp. salad dressing
- ½ c. finely chopped dill pickle

Whip cream stiff, add salad dressing. Blend in chopped dill pickle. Serve at once or keep refrigerated until time to serve.

White Sauce

1 cup

- 2 tbsp. butter
- 2 tbsp. flour
- 1 c. milk
- ½ tsp. salt
- Dash of pepper (white)

Melt butter over low heat. Mix in flour. Cook, stirring until mixture is smooth and bubbly. Add milk gradually, stirring constantly until thickened. Add seasonings. Cook a few minutes longer for best flavor.

Variations

- a. Egg sauce: Add 1 or 2 chopped, hard cooked eggs to 1 cup white sauce. If desired, 2 tbsp. chopped parsley may be added.
- b. Cheese sauce: Add ½ c. grated Cheddar cheese to 1 c. white sauce.
- c. Tomato sauce: Use 1 c. tomato juice in place of milk in white sauce.
- d. Spicy sauce: Simmer 1¼ c. tomato juice with 1 slice of onion, 2 cloves and 1 bay leaf. Strain. Complete as for white sauce.
- e. Easy Tomato Sauce: 1-6 oz. can of tomato cocktail and water to 1 cup. Use in place of milk in white sauce.

Smoked Carp

Before the days of refrigeration, fish was preserved by drying, smoking, pickling or a combination of one or more of these methods. Today most of the smoked fish are lightly smoked for added flavor, rather than to preserve the fish.

There are two methods of smoking carp - by cold smoke or by hot smoke. The cold smoke method uses several hours of cool smoke, not over 100°F. (38 C.), until the surface is light brown. The low temperature is not enough to cook the flesh, so the meat should then be cooked or canned. Canning seems to intensify the smoke flavor.

The hot smoke method involves raising the smoking temperature to 150-160°F. (66-71C.) for sufficient time (4 to 5 hours) to cook the flesh and for the surface color to become light brown. This product is edible after smoking and will keep in the refrigerator for 3 to 4 weeks or may be frozen. **Do not** keep in frozen storage more than a couple of months, as any salted product deteriorates quickly.

Preparation of carp for smoking: There are various ways of preparing carp for smoking. The size of the fish will determine somewhat the method used. Small carp may be scaled and the viscera, kidney, roe and blood thoroughly cleaned out by washing the body cavity. Then hang the fish on S-shaped hooks (Fig. 11), which in turn are hung over sticks to fit in the smokehouse or insert a wooden stick under the gill flap and through the mouth (Fig. 12).

If the carp are big - scale them, remove the head by cutting between gill and collar bone. Slit down the backbone on both sides, remove skeletal structure. Clean and wash out viscera and body cavity, lay flat. Hang the split carp by driving a nail through each side just below the collar bone and fasten into smoke-sticks (2" x 2") (Fig. 13). Fillets may be hung across a smoke-stick (Fig. 14); completely dressed fillets may be laid out flat on a wire rack or on aluminum foil, or several may be put together in a stockinette bag. This method usually requires the turning of the fillets - especially those that are on a flat surface.

Do not crowd the fish in placing or hanging them in the smokehouse. The stockinette method is recommended for hot smoking only.

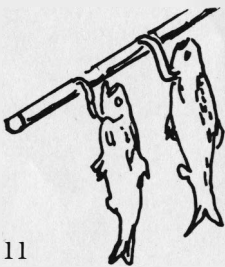


Fig. 11

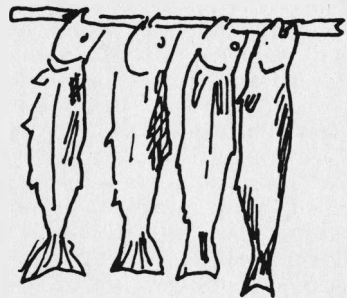


Fig. 12

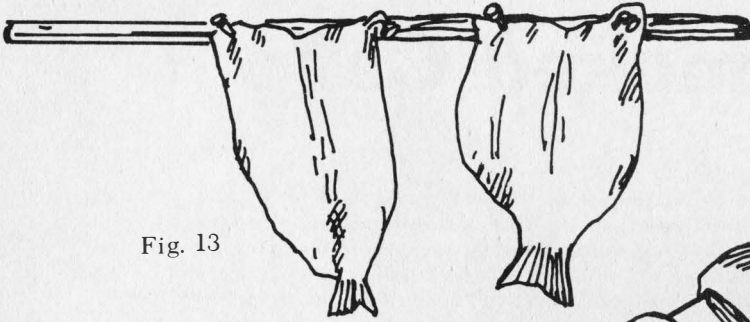


Fig. 13



Fig. 14

Experimental work on smoking of fillets of carp:

Preliminary work done by home economics researchers at SDSU with a taste panel indicated a need for adjustment in the level of salt used for brining the dressed fillets. A commercial sugar-curing salt was used throughout the study. Five pound lots of fresh-dressed fillet of carp were brined in a 25 percent or 35 percent sugar-curing salt brine for 24, 48, 66 and 72 hours. The percentage of salt solution was determined by a saline hydrometer (salinometer). Each lot was refrigerated and stirred at 24 hour intervals where applicable.

At the end of each brining time, the fillets were well-drained, and taken to the local locker plant for smoking. The fillets were laid on foil and smoked 48 hours in cold smoke (90°F., 32 C.). They were turned once during that period.

The hot smoke treatment (150°F., 66 C.) was 4 hours for the individual fillets and 6 hours for the fillets packed in stockinette. Whole carp was split and skeletal bones removed, brined 48 hours in a 35 percent sugar curing salt solution, then smoked six hours at 150°F. (hot smoke).

The cold-smoked product had to be further cooked to be edible. Two methods of cooking were used: pressure cooking the fillets in an inset pan one hour at 15 pounds pressure, or packing in half pint jars and processing for 90 minutes at 10 pounds pressure. The pan-cooked product was put in frozen storage (-8°F., -22 C.) to be evaluated with the canned product.

It is difficult to give firm recommendations for smoking carp fillets, as each factor evaluated (texture, tenderness, juiciness and flavor) appeared best at different salt levels and different brining times. Overall preference indicated the 25 percent sugar curing salt solution and brining time of 48 to 66 hours were favored. The fresh cooked product was more desirable than the stored product. The canned product was more juicy than the pan-cooked smoked fillets.

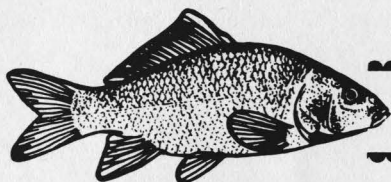
When using the hot smoke method, the stockinette-packed fillets and the whole fish were judged to be much better products than the single fillets. The whole fish also withstood frozen storage better than the fillets.

Other smoked seasonings were tried in a canned product. Fillets were brined in a 25 percent sugar cure salt solution for 48 hours, then liquid smoke added at the amount of ¼ teaspoon per one-half pint jar. The pan method of cooking was tried also, but the product was not as acceptable as that obtained by canning.

A smoked-salt seasoning was sprinkled generously over fresh fillets and refrigerated 24 and 48 hours, then processed as above. The 48-hour refrigeration time seemed to be more acceptable, and again the canned product was preferred over the pan-processed product. Storage of both products was satisfactory.

The results indicate that smoked carp is very acceptable, but that individual tastes varied with respect to optimum saltiness and smoke flavor. As was indicated earlier, salted products should not be kept in frozen storage for extended periods of time.

There are several available sources of information on building homestyle smokehouses. This information may be found under Hints and Helps (reference numbers 3, 4, 5, 6).



Garnishes:

Garnishes are used to add a touch of color and turn a plain dish into an attractive and appetizing one. Some of the more common garnishes are listed below with suggested methods of preparation:

Garnish	Suggested Preparation
Beets	Raw, sliced or wedges; cooked, whole or sliced
Carrots	Tops, sticks, curls or shredded
Celery	Tops, hearts, sticks, curls
Cucumber	Slices or sticks
Green peppers	Sticks or rings
Hard-cooked eggs	Slices, wedges, grated yolks
Lemons	Slices or wedges
Lettuce	Leaves or shredded
Olives	Green, stuffed or black
Paprika	Sprinkled sparingly
Parsley	Sprigs or chopped
Pickles	Whole, sliced or chopped
Radishes	Whole, sliced or roses
Red peppers	Strips or rings
Water cress	Sprigs or chopped

Hints and Helps

Abbreviations:

c.—cup
tbsp.—tablespoon
tsp.—teaspoon
lb.—pound
oz.—ounce
med.—medium
pt.—pint
gm.—gram

Butter and crumb (dry bread or cracker) casserole or pan before pouring in fish product recipe. The product such as fish loaf will come out easier.

Chopped - to cut into small pieces in a random manner.

Common measures and weights: Metric - English equivalents

tbsp. salt	18.0 grams
tbsp. sugar	15.0 grams
tsp. white pepper	1.8 grams
tsp. mace	2.0 grams
tsp. garlic powder	2.8 grams
tsp. dry mustard	1.8 grams
tsp. whole clove	1.8 grams

Cubed - to cut into small ($\frac{1}{4}$ to $\frac{1}{2}$ inch) more or less cubical pieces.

Diced - to cut into small more or less cubical pieces, $\frac{1}{8}$ to $\frac{1}{4}$ inch. Result is finer than cubed food and coarser than minced.

Minced - to cut or chop into very small pieces.

Saute - to fry in shallow fat until light brown.

Suggested amount of fish needed per serving:

whole fish (not yet cleaned) allow $\frac{3}{4}$ pound per person
dressed fish (ready for pan) allow $\frac{1}{2}$ pound per person
fillets or steaks allow $\frac{1}{3}$ pound per person

Temperature Equivalents - common temperatures used in cooking - Celsius (Centigrade) and Fahrenheit.

Fahrenheit (°F.)	Celsius (C.)
75	24
150	66
212	100
275	135
300	149
325	163
350	177
375	190
400	204
425	218

Weights:

1 lb.—454 grams

8 oz.—227 grams

4 oz.—113 grams

White sauce

Yield: about 1 cup

	Thin	Medium	Thick
Butter	1 tbsp.	2 tbsp.	2½ to 4 tbsp.
Flour	1 tbsp.	2 tbsp.	4 tbsp.
Salt	½ tsp.	½ tsp.	½ tsp.
Milk	1 cup	1 cup	1 cup

Melt butter, add flour and seasonings, blend well. Slowly add milk, stirring constantly to keep mixture from lumping while heating. Bring to a boil over low heat, with constant stirring to produce a smooth sauce.

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- 5) **Smokehouses and the Smoke Curing of Fish**, 1965, Washington State Department of Fisheries, 115 General Administration Building, Olympia, WA 98501.
- 6) **A Smokehouse for the Sportsman and Hobbyist**, 1968, Bulletin 788. Cooperative Extension Service, Oregon State University, Corvallis, OR 97330.

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