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DEPARTMENT OF COMMERCE

U. S. BUREAU OF FISHERIES

Economic Circular No. 22 : : : : : : : : : Issued November 29, 1916

THE GRAYFISH. TRY IT.

It Knocks H. out of the H. C. of L.

The man who first spoke of the "fickle public" may have been a milliner, a theatrical manager, a baseball star, or a politician; but it is certain that he was not in the fish business, for in few things is



the public so steadfast and conservative as in the fish which it eats. This is particularly the case with the American, who, blessed beyond most peoples with a great variety of excellent food fishes, eats but few of them. He, or possibly in this case it is she, talks fluently and often of the high cost of living, but takes no practical steps to reduce it, even when to do so requires no more initiative than the substitution of one word for another when the order is placed with

the market man. This is especially true of sea foods, of which to-day we are wasting by neglect more than we are using, largely because we do not even know the names of them and do not know what to ask for when we wish something at a low price better than some of the high-priced things which we have been eating. The tilefish in abundance lay off our coast unsought and unconsidered until by a little judicious publicity and the cooperation of a few progressive dealers its name was made a household word. Then it bounded into popularity, and within a year was providing the people with more "square meals" per annum than had been provided by the bluefish, the mackerel, the whitefish, or the lake trout, and at a lower cost.

Quality and price fix the economic character of a fish, but not until it has a name can it have a reputation, and without a reputation, and a good one, the public will not eat it, however excellent it may be. Fortunately for the fish, but unfortunately for the public, the early reputation of the grayfish was based not on its high quality as a food but on its destructive habits. It is a pirate and a marauder, like the bluefish, but its weapons are more efficient, and it not only eats and drives away other food fishes, but it cuts to pieces with its teeth the fisherman's gear and leaves him helpless and exasperated.

Naturally under such conditions no name was too bad to apply to it, and the mildest one in common use is "dogfish." That is a poor one to conjure with. It lacks an alluring sound, and, besides, there are several inferior fish known by the same name. For both reasons it is desirable to call it something else, and grayfish has been selected as obviously appropriate. Adult grayfish weigh from 5 to 15 pounds, 7 pounds being a common weight. They feed on fish, crabs, shrimps, and even lobsters. In this exclusive animal diet they are like bluefish, cod, haddock, and most other of our important food fishes, but are so ravenous in getting their food that they frequently make themselves nuisances by robbing the fishermen's nets and trawl lines.

Trawl lines are long, stout lines to which shorter ones, each with a hook, are attached at intervals of about 6 feet. They are stretched on the bottom of the sea, held in place by suitable anchors, and marked by buoys; and as a single dory, or fishing boat, will often fish several thousand hooks, each baited with a piece of herring, alewife, or other fish, with 10 or 12 dories to the schooner, the fishing banks are thus strewn with food which the grayfish finds acceptable and readily obtainable. When schools of grayfish appear they greedily seize these baits and either carry them away or are themselves hooked, the result to the fishermen being essentially the same in either case, for the line set for other fish is either denuded of its lures or is loaded with grayfish, for which the fisherman until now has had no market. The address and rapacity of these fish are such that when they are on the banks or alongshore in large bodies they

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 seize the baits before other fish can take them, and the fisherman in the past has lost his time, the labor expended in setting and hauling his lines, the value of his bait, and all of the other items which enter into the expenses of the fishery.

In the case of the gill-net fishery the grayfish are attracted by the helpless food fishes enmeshed in the nets, and they either tear them bodily away and devour them or bite them in two, leaving nothing but the head to show where a valuable fish had been. Worse than this in some respects is the damage wrought to the nets, the sharp teeth of the grayfish cutting like shears, often leaving the poor fisherman's property little but a string of tatters attached to the foot and head lines.

These fish are found on both shores of the North Atlantic, south almost or quite to the Tropics, and probably range widely on the high seas between. They travel in great schools, making sudden forays on the coasts, remaining for a time and then as suddenly disappearing. When they arrive on a fishing ground they take possession and are likely to either eat or drive away every other fish not too big to be swallowed.

Most abundant fishes produce great numbers of eggs, some, like the cod, producing millions, of which nearly all are sacrificed for the sake of the two or three which develop to maturity. With the grayfish nature pursues another course and the six or eight young are born alive as fully developed little fishes, quite able and willing to care for themselves in the ceaseless battle for life which goes on in the sea, and in consequence the proportion reaching maturity is large.

The grayfish is a trim, clean, clipper-built fish, swift in the water, as is required by its piratical habits. Its skin looks scaleless, but when touched is found to be as rough as emery cloth, owing to close-set sharp little particles encrusting it. The hide is sometimes used for polishing fine metal, ivory, and wooden articles, and, as a more important possibility, gives promise of producing a leather suitable for the production of small "novelties." The liver is valuable for its oil, which is in demand in the arts, particularly for dressing leather, and is said to have medicinal qualities not inferior to those obtained from the cod. The eggs, which as has been said are hatched within the body of the mother, are as large as the yolks of hens' eggs, and a market has been found for them, also, in the leather trade. All of these uses are important in themselves, but particularly because the utilization of these by-products makes it possible to can the fish as food at an attractively low price. Grayfish is excellent eaten fresh, and a market for it in that state has been developed by the Bureau in New York City, in connection with the tilefish fishery; but it is as a preserved product that it will find its largest use. It can

be prepared in a number of ways: Salted and dried like cod, smoked, and canned in a variety of styles. The smoked fish is excelled by few, if any, products of similar nature, and it is probable that it will be available to the consumer during 1917. At present the fish is obtainable canned plain like salmon, and a can containing 14 ounces of solid meat is purchasable for about 10 cents, making it one of the lowest-priced fishery products on the market. It must not be inferred from this, however, that it is a low-grade commodity, for it is rich, wholesome, and generally excellent, and the variety of ways in which it may be served will make it an important addition to the country's diet. It has been used as a fresh food on the shores of the Mediterranean from times immemorial, and of late it has come into consumption in the countries of northern Europe. The officials of the Bureau of Fisheries have been testing it and having others pass on it for years, and some of them are now using it in their own households. They are now giving the opportunity to others, and suggest the following as a few of the ways in which it may be cooked to suit varying tastes and incomes.

RECIPES.

1. GRAYFISH HASH.^a

1 can grayfish,	1 teaspoonful butter,
1 pint boiled potatoes, in small pieces,	

Flake the fish and mix with the other ingredients. Place in a buttered frying pan and stir until thoroughly heated throughout, then leave long enough to brown on the bottom. Turn out on a platter, brown side up.

2. GRAYFISH, LOAF.

1 can grayfish,	$\frac{2}{3}$ cup of milk,	
1 cup cracker crumbs,		paprika and salt.
1 egg,		

Flake the grayfish, mix with the cracker crumbs and the egg, well beaten, and season to taste. Bake for 15 minutes in a buttered dish.

3. SCALLOPED GRAYFISH.^b

1 can grayfish from which liquid has been drained,	1 cup liquid (water, milk, tomato juice, or canned tomato soup).	
2 level tablespoons butter,		few drops onion juice,
3 level tablespoons flour,		few grains cayenne pepper.
1 teaspoon lemon juice, or $\frac{1}{2}$ tablespoon finely chopped capers or sour pickle,		

For the sauce, melt the butter, add the flour, and cook for 1 minute; then add the liquid and boil until the mixture thickens. Do not make the mistake of oversalting this sauce. Into a baking dish put alternate layers of fish and

^a Contributed by Mrs. William C. Redfield.

^b Contributed by Office of Home Economics, Department of Agriculture.

sauce, cover with buttered crumbs, and bake. If tomato juice or tomato soup is used in place of water, omit the lemon juice. If economy is an object, use vinegar in place of lemon juice. Either may be used with milk, provided it is not added until the sauce has become thick.

4. SCALLOPED GRAYFISH.^a

1 can grayfish,		2 tablespoons butter or finely chopped
3 cups stale bread crumbs broken into small pieces, or		salt pork, rendered suet, or other cooking fat,
3 cups boiled rice,		1 tablespoon finely chopped onion, 1 tablespoon finely chopped sour pickle, few grains cayenne pepper.

Into a baking dish put a layer of bread crumbs or rice. Spread over it a small amount of chopped pickle, onion, and fat. Add a layer of fish and another layer of crumbs or rice, and so on. Reserve about half the fat for a final layer of bread crumbs on top of the dish. Bake until the crumbs are brown.

5. SCALLOPED GRAYFISH.^b

1 can fish,		dash of red pepper,
1½ cups bread crumbs,		1 tablespoon tomato catsup,
1½ cups milk,		butter.

Add pepper and catsup to fish. Put in baking dish alternate layers of fish and bread. Put in milk, dot with butter, and bake until brown. One tablespoon lemon juice or vinegar added to fish improves its flavor.

6. SCALLOPED GRAYFISH.^b

1 can fish,		3 level tablespoons butter,
1½ cups milk,		crumbs.
4 level tablespoons flour,		

Melt butter, add flour and blend, then add hot milk and cook until smooth and thick. Mix with fish, place in buttered casserole or baking dish, cover with dry bread or cracker crumbs and bake until brown.

7. GRAYFISH TURBOT.^c

1 can grayfish,		2 tablespoons butter,
1 cup milk or cream,		1 tablespoon minced onion,
½ cup bread crumbs,		salt and pepper to taste.

Drain and flake 1 can of grayfish. Butter a baking dish and spread a layer of the fish on the bottom. On top of this place a layer of bread crumbs, dust with a little pepper and salt, dot with small lumps of butter, and sprinkle with a tablespoon of finely minced onion. Proceed in this way until the dish is full, being sure that the top layer is of crumbs. Pour in a cup of cream or rich milk. Dot the top with lumps of butter. Bake for 30 minutes in a rising oven, an oven in which the intensity of the heat is gradually increased.

8. GRAYFISH CHOP SUEY.

1 can grayfish,		1 egg,
½ pound rice,		1 teaspoonful chopped cooked onion,
1 cup milk,		1 teaspoonful chopped red pepper.

^a Contributed by Office of Home Economics, Department of Agriculture.

^b Contributed by Miss Grace L. Bennett, president of Cornell Cafeteria Co.

^c Contributed by Mrs. J. Y. Norton, author of "Mrs. Norton's Cookbook."

Flake the fish, add one-half cup of cold boiled rice, onion, and red pepper. Bake in a buttered dish in a hot oven; when about half done, add the milk and the egg, well beaten. Serve when brown.

9. GRAYFISH OMELET.

1 can grayfish,		1 tablespoonful flour,
5 eggs,		butter.
$\frac{1}{8}$ teaspoonful salt.		

Flake the fish, beat the eggs, mix the salt and flour, add to eggs, and stir in the fish. Melt a piece of butter in a pan until it smokes, turn in the mixture, and bake on top of the stove until brown.

10. GRAYFISH CAKES.^a

1 can grayfish,		1 egg, fried salt pork and parsley for
1 pint mashed potatoes, seasoned with butter, salt, pepper, and cream,		garnish.

Drain, bone, and flake, one can of the fish. Boil and mash six potatoes, seasoning them with butter, pepper, salt, and a little cream; work the fish into the potato, add a beaten egg, a dusting of flour, and shape the mixture into cakes of the usual size. Fry the cakes in hot fat and serve garnished with a thin slice of fried salt pork on top of each and sprays of parsley.

11. GRAYFISH KEGEREE.^a

1 cup grayfish,		1 teaspoon mixed mustard,
2 eggs,		1 teaspoon onion juice, salt and pep-
1 cup boiled rice,		per to taste; garnish with water-
$\frac{1}{4}$ cup cream,		cross.
1 tablespoon butter,		

Take one large cup of flaked grayfish, two soft-boiled eggs, a heaping tablespoon of butter, the juice of an onion, a teaspoon of mixed mustard, one-quarter cup of cream, and a teacup of freshly boiled rice. Heat altogether, adding pepper and salt to taste, and serve heaped on slices of toast, garnished with fresh water-cress.

12. GRAYFISH JEANNETTE.^a

1 can grayfish,		3 or 4 tomatoes, good size, salt and
2 eggplants, medium size,		pepper to taste, grated cheese, bread
		crumbs, water-cress for garnish.

Take 2 medium-sized eggplants, cut them in thick slices and put the slices into cold, salted water for an hour. Drain. Parboil the slices for 5 or 6 minutes, then drain and cool. Flake a can of grayfish and add enough well-seasoned cream sauce to moisten the fish. Lay the slices of eggplant on a buttered baking dish; spread them with the mixture, laying a thick slice of tomato on top of each. Sprinkle the tops with a mixture of bread crumbs, grated cheese, salt, and pepper. Put a lump of butter on top of each and bake for 10 or 15 minutes, not long enough to lose the shape. Serve garnished with sprays of fresh cress.

^a Contributed by Mrs. J. Y. Norton, author of "Mrs. Norton's Cookbook."

13 GRAYFISH CHOPS. ^a

2 cans grayfish,
1 cup bread crumbs,
1 tablespoon chopped parsley,
1 teaspoon onion juice,

1 egg,
3 tablespoons flour,
1 tablespoon butter,
1 cup cream or milk.

Drain, bone, and flake 2 cans of grayfish. Add to the fish a tablespoon of chopped parsley, a cup of dry bread crumbs, a salt spoon of pepper, a pinch of salt, and the juice of an onion. Melt together three tablespoons of flour, one of butter, and a cup of cream or milk; when blended and slightly thickened set aside to cool. When cool mix with the fish. Shape the mixture into chops, dip them in egg, then in crumbs, and fry in hot fat. Have ready enough potatoes fried in stick shape to insert as chop bones. Garnish with parsley.

14. GRAYFISH SALAD. ^b

1 can grayfish,
1 cup finely chopped celery.

Mix with 3 large tablespoons mayonnaise, 1 tablespoon tomato catsup, 1 teaspoon prepared mustard, 2 teaspoons lemon juice, and dash of red pepper. Mix lightly with fish and celery and serve on lettuce. A boiled dressing might be used in place of the mayonnaise. One cup diced cucumbers may be substituted for the celery.

15. GRAYFISH SALAD. ^a

1 can grayfish,
1 cup celery,
1 red pepper,
1 cucumber,

1 head of chicory,
1 lemon,
1 onion,
mayonnaise sauce. Garnish with olives.

Drain, bone, and flake 1 can of grayfish, add to it 1 cup of chopped celery, 1 chopped red pepper, 1 cucumber seeded and sliced like cabbage for slaw, the juice of an onion, the juice of a lemon, and the white heart of a head of chicory cut fine. Mix all lightly with mayonnaise and garnish with olives.

16. GRAYFISH CHOWDER, NEW ENGLAND STYLE. ^a

3 cans grayfish,
 $\frac{1}{2}$ pound salt pork,
8 or 10 medium-sized potatoes,
2 or 3 medium-sized onions,
4 pilot crackers,

1 pint milk,
1 cup cream (or increase quantity of milk),
1 tablespoon butter,
salt and pepper to taste.

Drain and bone 3 cans of grayfish, leaving the fish in large pieces. Put two slices of diced salt pork in the bottom of the chowder kettle and let them melt and slightly cook. Then cover them with a layer of fish. Over the fish place a layer of finely sliced onions, and over that a layer of thickly sliced raw potato; dot with lumps of butter, dust with pepper and salt, and put on a layer of pilot crackers broken in large pieces. Continue the layers in this order until the fish is used up; then add 2 cups of milk. Boil evenly for 40 minutes, add a cup of hot cream (or milk), and serve. If the chowder seems to absorb the

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^b Contributed by Miss Grace L. Bennett, president of Cornell Cafeteria Co.

liquid too freely as it cooks add 1 pint of hot milk. In case pilot biscuits are not procurable, as is often the case in many inland towns, any good water crackers may be used, but they should be split and soaked in cold milk or water long enough to slightly soften them before being added to the chowder.

17. GRAYFISH SEA PIE.^a

1 can grayfish,	1 tablespoon cornstarch,
1 dozen little neck clams (or substitute additional oysters),	1 saltspoon baking soda,
1 dozen oysters,	1 wineglass sherry (may be omitted for economy),
1 cup milk,	1 teaspoon sugar,
$\frac{1}{4}$ pound butter,	salt and pepper to taste.

Drain and flake 1 can of grayfish. Steam open 12 little neck clams. Cook 1 dozen oysters in their own liquor for 2 or 3 minutes, until the beards curl. Add the oysters and clams to the fish. Make a cream sauce in the following way: Place the juice of 1 lemon with a quarter of a pound of butter in a granite saucepan; when melted together add a saltspoon of baking soda, and when the mixture froths up add a cup of milk in which a tablespoon of cornstarch has been dissolved. Cook, stirring constantly, until thickened, being careful not to let the sauce burn. Add pepper and salt to taste, a wineglass of sherry and a teaspoon of sugar, then add the fish mixture. When slightly cool turn into a deep pie dish that has been lined with a good crust, put on the top crust, and bake until the crust is done.

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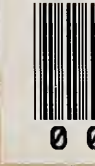
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