

**THE CHANNEL CATFISH** (*Ictalurus punctatus*, Rafinesque).—The channel cat reaches a length of 2 to 3 feet and a weight of 15 to 20 pounds or more. As usually seen in the markets it ranges from 1 to 5 pounds in weight, and those exceeding 5 pounds are not common. It is handsomer, more graceful, and more active than any other of our catfishes. It is light olivaceous and silvery in color, covered with small brown spots when young. The skin is thin and translucent, much less thick and leathery than in our common catfishes (*Ameiurus*). The head is small, the mouth small, and the body slender. There is much less waste in the body of the channel cat than in other fishes, as the latter lose more than half their weight by the removal of the head, the entrails and the skin. The flesh of the channel cat, when fresh, is very superior; it is white, crisp and juicy, of excellent flavor and not tough. It is much more delicate both in fibre and in flavor than that of our other catfishes. When well cooked, I consider it superior to that of the black bass, the wall eye, the yellow perch, or any other of our percid fishes. Among our fresh-water fishes, it is inferior only to the whitefish, the trout, and other *Salmonide*. The channel cat abounds in all flowing streams from Western New York westward to Montana and southward to Florida and Texas. It is, perhaps, most common in Tennessee, Arkansas, and Missouri. It seems to prefer running waters, and both young and old are most abundant in gravelly shoals and ripples. The other catfishes prefer rather sluggish waters and mud bottoms. I have occasionally taken channel cats in ponds and bayous, but such localities are apparently not their preference. They rarely enter small brooks unless these are clear and gravelly. Whether they will thrive in artificial ponds we can only know from experiment. The channel cat is much less tenacious of life than the "bull-head" (*Ameiurus nebulosus*) and other *Ameiuri*. It is a carnivorous fish, although less greedy than its larger-mouthed relatives. It feeds on insects, crawfishes, worms and small fishes, and readily takes the hook. It spawns in spring, but its breeding habits have not been studied. As a food fish, the channel cat is certainly better worthy of attention than any other American catfish. If once introduced, it ought to thrive in the rivers of the Middle States, of Southern New England, and of California. It is also to be commended to the attention of European fish-culturists. In the streams of Western Europe, which are not cold enough nor clear enough for the trout, the channel cat ought to thrive, and there is no fish native to those waters which is as valuable for food.—*David S. Jordan in Bulletin of the U. S. Fish Commission.*

**BASS FISHING.**—Putnam, Conn., July 17.—Fishing in this part of the country has been good this spring, and now the fraternity are after black bass, and are bringing in good strings. Speaking of bass tempts me to give **FOREST AND STREAM** readers my first and only day's bass fishing as yet this season. A friend of mine who never saw a bass caught wanted to go with me. We went to Webster Pond one day this week. After taking some fifteen or twenty bass of small and medium size, the larger ones began to fool around, and at this stage of the proceedings I thought I would try the old 9-ounce fly-rod, just to show my friend how the thing was done. A big swirl, a light yank, a rush, and the old click reel spun out the usual music, until forty or fifty feet of line was played out. "Where's your bass gone to?" "Look out yonder," said I. At that instant a small-mouth, 3-pound bass broke water, and shook himself two or three feet in the air. "Say, is that fish the one you are after?" "Well, yes, I should smile and say he was." The fish now makes a dive for the boat, but swinging her around in time the bass makes another leap forty feet on the other side of the boat. "Look out, he'll break your rod; he will break your rod." "Don't be alarmed, my friend; this rod has killed a 9-pound trout in rapid water, and I guess it's good for this." And in about three minutes that bass took a scoot into the landing net. My friend looked admiringly at the bass, and then at the rod, quietly remarking, "Well, it's worth the whole trip up here to see that fellow taken with that whip of yours." I do think there is more fight to the square inch in a small-mouth black bass than in any other fish that swims. And as I intend to spend a few days fooling with them about the first of August, and if any of the "old settlers" undertake to "telegraph" to me from their end of the line, I will tell the readers of **FOREST AND STREAM** what luck I had in "telegraphing" back to them.—W.

**TROUT FISHING IN OREGON.**—*Editor Forest and Stream:* I have noticed an occasional item in the columns of your paper giving specimens of "good catches" in Oregon. I wish to contribute another item that will not compare unfavorably with those that have happened before. In company with Captain Fowler, of the Second Cavalry, U. S. A., stationed at Fort Klamath, Bishop Morris, of Portland, and myself spent several days last month on Williamson River in Klamath county, Oregon, testing our fishing tackle and the quality of the trout that abound there. Unfortunately we did not keep a record of all the fish taken and so cannot give the total number or weight. There were caught at that time, however, several whose weight was not forgotten. The Bishop landed without gaff or net and with an eight-ounce rod, one that weighed 6 pounds 10 ounces. I had the good luck to land three that together weighed 18 pounds 5 ounces. Captain Fowler also landed several that weighed over 5 pounds. The fish were taken with eight-ounce rods and large flies. The coachman was the favorite. I have never seen fish more game or make a better fight. They were in every respect similar to the Rocky Mountain trout that abound in the streams on this coast. Captain Fowler, whose enthusiasm for fishing is only equalled by his generous hospitality, states that trout were taken from the river this spring that weighed over eight pounds and I can well believe it. Having cast flies in many streams in the State I have come to the conclusion that there is but one place to fish and that is in Williamson River.—W. E. POTWINE.

**THE BLACK PRINCE.**—Chicago, July 25.—*Editor Forest and Stream:* Some time ago in your valuable paper under the heading "The Most Killing Fly," I described a fly of which I did not know the name, and the description agrees exactly with that of "Cyrtonyx" in your issue of the 23d inst., save that mine had a long red tail instead of shoots as he describes it. I never knew the name of the fly until "Cyrtonyx" named it, and it is certainly one of the most killing flies for Colorado and New Mexican streams. This fly having proved so tempting to the *Salmo virginialis* tribe, I set to work (though no fly-maker) and made myself some flies exactly like it save that I used silver tinsel twist in place of the gilt; this proved, if anything, more killing than the

black prince, so I named it the black killer. If Mr. Hart will send me his address, I will be most happy to send him a black prince, black killer and several other flies that I have found remarkably good in Colorado waters, and if I can give him or any of my fellow sportsmen any information regarding the trout streams, ponds and lakes of Colorado or New Mexico, I shall be most happy to do so. "Next!"—SPORR.

**MARYLAND NETTING.**—Fairlee Creek, Kent County, Md., July 16.—While the oyster law of Maryland is strictly enforced, the seine fishermen are hauling day and night, taking great quantities of rock, pike, etc., and destroying thousands of small fish. This is a grand game and fish country; but this constant seine-hauling will tell in the course of time. Fishing with hook and line for private use could never make any perceptible difference, but will not the guardians of the law look after the wholesale destroyers? Most of them belong in other States, where they cannot haul seine at this time of the year.—EVERETT VON CULIN.

**Fishculture.**

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**A GLANCE AT BILLINGSGATE.**

BY WILLIAM VAN ZANDT COX.

[A paper read before the American Fisheries Society.]

The Thames being the highway to London and originally the source of its fish supply, it was very natural that some point upon it should become the center of the fish trade. Billingsgate has for centuries been that point. As to the origin of the name there are many traditions. One is that Belin, an ancient Britain ruler, who lived three or four centuries B. C. and was held in great reverence by the fisher folk, constructed a gate in the immediate proximity to the present market and gave it his name. Stow, a very practical writer, after considerable research, comes to the conclusion that a Mr. Beling or Billing, in the time of Elizabeth, had a wharf there. This commencement, though less flavored with romance and more of fish than others, we think more than likely was the beginning of this unpoetical fish mart. The market has been the property of the city of London for centuries, and the revenues derived from it, though no statistics seem to have ever been compiled on the subject, must in the aggregate be enormous.

Originally the market was very primitive both in structure and equipments, indeed, until within the memory of those still living, it consisted of "a batch of uncleanly old sheds reeking with fishy smells and more or less beset by ruffianly company."

The language used by those who frequented it has, as is well known, become proverbial for its coarseness. At one time women were engaged in selling fish in the market, and it is said were largely instrumental in giving the place the bad name it bore, and though at this time it has entirely changed from what it once was, it still bears the stigma of coarseness in the minds of many, illustrating, says a clever writer, that "as in the case of men, the evil that women do lives after them."

The old sheds disappeared some years ago, their places being occupied by a building which in turn has given way to the present market. This structure extends north and south from the Thames River to Thames street and was built with the idea of having not only ground space, but also space in the basement below and the gallery overhead. The basement part was intended for shellfish dealers. But it was not occupied by them long, for being twenty-six feet below the level of the river, it was so dark, damp and disagreeable that few buyers cared to go there. Several deaths also occurred among its occupants, and those remaining being unwilling to stay longer in the "black hole," it was abandoned, except as a place of storage and for lobster boiling purposes. The overhead space was for dealers in dried fish and is connected with the ground floor both by spacious stairs and elevators. Being sought, however, by few patrons, it was also abandoned and its occupants went below and squeezed in, as did the shellfish dealers from the basement; so that at this time the entire trade is concentrated on the ground floor. Without going into details concerning the architecture of the building, it is sufficient to say that it is generally admitted that the corporation did not act wisely in enlarging the market at a great expense and in a way that is of no practical use, instead of widening the approaches to it on the Thames street side. The floors of the building are of polished granite, concealed beneath which are drains of iron for carrying off the dirt and refuse when the market is flushed, which is done daily at the close of the market hours.

At the present time there are 156 stalls and 14 shops on the ground floor. The former are located in the center, while the latter are on the sides of the building. There is also a tavern where fish are served as the leading article of diet. Formerly there were three taverns, Simpson's, Bowler's and Bacon's, where in other days the salesmen congregated before daylight, drank their black coffee and "aff and aff," ate fish and talked over the prices, sales and supply of fish for the coming day. In order to have more space, however, the number of taverns has been reduced to one, which now brings in a rental of \$4,000 annually. The stalls vary in size, averaging 32sq. ft., according to the Clerk of the Market, Mr. John Little, to whom I am indebted for many courtesies. The stalls, according to location, bring from 10 to 18 cents per square foot per week, or an annual rental from \$166 to \$300 each. The shops bring from \$1,700 to \$2,000.

Avenues cross the market at regular intervals, and from necessity are very narrow. Great effort is required to keep them open, and the rules of the market are very explicit in regard to placing obstructions in them. Porters carry the fish into and from the market in baskets, boxes, crates, barrels, in fact in all kinds of ways. No one is permitted to perform the duties of porter without a license, for which he has to pay 2s. 6d. When on duty, in order to readily distinguish him, the porter is obliged to wear on his left arm a metallic badge having on it the armorial bearings of the city of London. If a porter misbehaves, uses any abusive or obscene language, gets intoxicated, steals, commits assault or violates any of the rules of the market, his license is at once taken from him. I was told that the present conduct of employes in Billingsgate so happily in contrast with "ye olden times," is due to rigid enforcement of rules similar in tenor to those just mentioned.

The porter's dress consists of cotton overalls, a coarse cotton shirt, worn on the outside of the trousers, which from the begrimed and bespattered appearance are very appropriately called "slops." The head is protected by a "porter's knot," a hat which has a cushion in the crown, very necessary padding, it might be remarked, as the rough and heavy "trunks" are either borne directly on the top of the head, or resting on the shoulders, back and neck. Wooden sandals are generally worn on the feet to keep the bottoms of the shoes from contact with the sloppy surface. The porter receives on an average about a penny farthing for carrying each box of fish to the salesman. The taking of it from the salesman to the conveyance of the buyer is an optional charge, depending upon the kinds of fish and distance to be carried.

Land-borne fish enter the building on the Thames street

side, while river-borne fish are brought into the market through the south door facing the river. The boats bringing them to London are not permitted to come alongside the building to unload, but, for some reason unknown to me, are required to make fast to fastenings provided for them adjacent to floating pontoons and barges that intervene. Planks, mostly unprotected by side rails, extend from boat to market about a hundred feet distant. Up and down and across these planks the porters tramp with their heavy burdens, for each trunk weighs about 100 pounds.

Nine steam carriers run to and from Billingsgate and the fleets in the North Sea, and bring the bulk of the water-borne fish. The unloading of these boats—indeed all kinds of craft—is an interesting sight. But let Sala tell the story: "This wharf is covered with fish, and the scaly things themselves are being landed with prodigious celerity and in quantities almost as prodigious from vessels moored in triple tier before the market. Here are Dutch boats that bring eels, and boats from the North Sea that bring lobsters, and boats from Hartlepool, Whitstable, Harwich, Great Grimsby, and other English seaports and fishing stations. They are all called boats, though many are of a size that would render the term ship, or at least vessel, far more applicable. They are mostly square and squat in rigging, and somewhat tubby in build, and have an unmistakably fishy appearance. Nautical terms are mingled with London street vernacular; fresh mackerel competes in odor with pitch and tar; the tight-strained rigging cuts in dark indigo relief against the pale blue sky; the whole is a confusion, slightly dirty but eminently picturesque, of ropes, spars, baskets, oakum, tarpaulin, fish, canvas trousers, osier baskets, loud voices, trampling feet and 'perfumed gales,' not exactly from 'Araby the blest,' but from the holds of the fishing craft."

The method of handling and carrying the fish may strike the author of "Twice Around the Clock" as one of "prodigious celerity," but to an American familiar with steam appliances and labor-saving machinery, it appears to be very tedious, costly, old-fashioned and in great contrast to systems seen with us, where a vessel puts in, unloads, packs up, and leaves the wharf in two hours.

Steam appliances have not been adopted at Billingsgate. I am informed, because the fish would be more rapidly brought to the salesmen than they could be handled, and so the old system is clung to, and porters with trunks on their heads approach the salesman, stand in waiting, then deposit them only as rapidly as they can be sold and again borne away.

The salesman or auctioneer gets five per cent. on the sales made. Many fish were formerly sold at "Dutch auction," where the salesman names a high figure, then drops to a lower one, and so on until a bid is made which is accepted, and the procedure is gone through with *de novo*. No license is required to sell fish by Dutch auction, and this method is still in great favor in many of the fishing ports.

The Bummaree appears to be an individual essential to Billingsgate.

Jonathan Bee, in his slang dictionary ("Lexicon Balatronicum"), published 1823, defines the bummaree to be the man who at Billingsgate takes the place of the salesman, and generally after 8 o'clock A. M., buys the last lot of fish.

The author of "London Labor and London Poor," 1853, says that at that time Billingsgate was opened at 4 A. M., but for two hours it was only attended by the regular fishmonger and the bummaree. At the present time, however, not only is the bummaree the first to arrive, but, as in 1823, he is the last to leave. He now purchases from the salesman and sells to small dealers, costermongers and consumers. Before making a sale the bummaree breaks the packages and assort the fish, supplying the buyers with the kinds, sizes and quality desired. A very useful function it might be remarked when we remember that a "ped" often contains various kinds of fish, suitable and unsuitable for the uses for which they are wanted by different classes of purchasers. But however useful the bummaree may be, that such an individual exists at all, only goes to prove the inadequate accommodations of Billingsgate for the trade, and whether there is foundation or not for such accusation as are heard concerning him; the bummaree will exist so long as the fish supply of populous London has to pass through this limited inaccessible market in a limited time.

The market is opened at 5 o'clock in the morning and is practically over at 10 o'clock. Before the opening, however, the auctioneers are in their places, behind what are called "bulks" or "forms," upon which the fish are deposited in "trunks," "doubles," etc. Little if any opportunity is given buyers to ascertain the condition of the fish, for no sooner is the box deposited on the "bulks" than it is knocked down as sold, and again borne away. If the buyer is not informed in some way in regard to the condition of the fish, to purchase the unopened boxes so rapidly, and with such apparent indiscriminate recklessness, seems to an outside observer, to put it mildly, great confidence in the condition of the fish, and in the honesty of the salesman.

During the whirl of business all seems confusion and chaos.

Porters are seen rushing hither and thither with reeking barrels, baskets and boxes. Auctioneers with long narrow account books in their hands are bawling to buyers, who, with hands by the side of their mouths, direct back their shouting answers, while the uninitiated explorer stands bewildered in their midst, until he is called to his senses by the exclamation, "Hout the way." "The only comparison I can find for the aspect, the sights and sounds of the place," says a well-known writer, "is a rush, a rush hither and thither at a heter skelter speed, apparently blindly, apparently without motive, but really with a business-like and engrossing pre-occupation for fish and all things fishy. Baskets full of turbot borne on the shoulders of the facchini of the place, skim through the air with such rapidity that you might take them to be flying fish."

"At that piscatorial house," says Bertram, ("Harvest of the Sea," p. 59) "we can see in the early morning the produce of our most distant seas brought to our greatest seat of population, sure of finding a ready and profitable market. The aldermanic turbot, the tempting sole, the gigantic codfish, the valuable salmon, the cheap sprat, and the universal herring, are all to be found during their different seasons in great plenty at Billingsgate, and in the lower depths of the market buildings, countless quantities of shellfish of all kinds stored in tubs may be seen, and all over is sprinkled the dripping sea water, and all around we feel that 'ancient and fish-like smell' which is the concomitant of such a place."

Commercially speaking fish are divided by the Londoner into two classes: 1. Prime. 2. Offal. The former comprise the choice varieties, such as sole, bull, turbot, etc. The latter includes the commoner coarse kinds, such as place, rother, haddock, etc. The quantities that come into Billingsgate are very disproportionate. Mr. Little says that thirteen boxes of offal reaches the market to one box of prime. That gentleman has very kindly furnished me a table showing the quantity of fish arriving at Billingsgate per month during the year 1853, which I shall make a part of this paper, as also a series of tables showing the amount of fish coming to London since 1875. It will be seen from Mr. Little's statement that the quantity coming by water is much less than by land. Special trains bearing fish alone run daily to London from Grimsby, Hull, Yarmouth and other places. As these trains do not come in the vicinity of Billingsgate, the fish have to be carted through the narrow streets and tortuous lanes, across the city to the market in order to be sold, and when sold to be again carted over the same streets through which it has already with difficulty passed.

Speaking of the approaches to Billingsgate, the *Quarterly Review*, October, 1882, says: "Their badness was of comparatively slight importance so long as the bulk of the fish was brought thither by water. When, however, it became necessary to deal each year with some 90,000 tons of railway-borne