

DEER'S VITALITY.—Chicago, Ill.—*Editor Forest and Stream:* The article in your issue of Jan. 17 on this topic reminds me that I once shot a fawn (about eight months old), cutting its belly open in such a way that its paunch dropped out. It was running when I shot, and going to the place where I last saw it I found blood on the snow and took up the trail. Within a short distance of the first blood stains I saw where something belonging to the deer had been swinging back and forth at intervals, leaving irregular marks on the snow, and, not knowing the nature of the wound, I thought I had broken a leg. But on further investigation I found that all its feet were being firmly planted in the snow at each jump. I was puzzled until I reached a place where the deer had lain down. Then I saw that a portion of its entrails were hanging, and had left their imprint in its bed. It was in a river bottom, thickly grown with underbrush, and, though from this time on it lay down at the end of every hundred yards or so, it invariably jumped before I could get sight of it, and I followed it for, I think, fully a mile before it gave me a chance for a second shot, and when I killed it I found its paunch hanging out so that it touched the ground every time the deer did. The wound itself had bled but little, yet I was astonished that such an animal could run so far with its hay basket flopping hither and thither. Another mystery is that he did not catch on some of the brush he was constantly dodging through, and pull the whole business out of him.—G. O. SHIELDS.

DEER MUST BE PLENTY THERE.—Charleston, S. C., Jan. 23.—*Editor Forest and Stream:* I take the liberty of quoting from a letter received this morning from a friend from Flat Rock, N. C., who was here about ten days in a Christmas and New Year's hunt. It is certainly interesting and will give some idea to my northern friends of what sport can be had here. "You will be sorry to have ignored me when I tell you my luck. We hunted eight days, killed fourteen deer, caught four foxes, and killed a lot of ducks, woodcock and partridges. How is that for high? The best of it is, out of the fourteen deer I killed seven myself; stood on an old cawsey, and seven deer ran up to within 35yds, and stopped; I tore loose both barrels with my old No. 10, rammed in two more cartridges and blazed away again, at which time four out of the seven bit the dust then and there. We jumped twelve in that small drive and killed six, besides three others that I killed at different times previous to this. I never expect to have such luck again. Only regret that you were not there to help me do some of the tall old tiding that I had to do." The above is the quotation from my friend's letter. The sport he had certainly is good, but, I can assure you, I consider him the best all-round sportsman I have ever met. We want some of your pilgrims, who are seeking a genial climate and are lovers of the dog and gun to wend their way to our "City by the Sea," where a warm welcome and a good time awaits them.—MILBANK.

BULLETS.—St. Louis, Mo.—*Editor Forest and Stream:* In reply to Mr. Theodore Roosevelt's query in a recent issue of your valuable journal regarding the Keene bullet, I use with great success in my .45-90 Winchester a bullet similar to that described by your correspondent R. H. W., in FOREST AND STREAM, Dec. 13, the only difference being that I fill the cross-cut with tallow, which I think increases the accuracy of the projectile, but does not interfere in the least with its action. I also make the cut slightly wider at the point than at the base, thereby insuring the splitting of the bullet. I have brought a grizzly bear to friendly terms with a single bullet of this kind, and a grizzly is never friendly unless he is stone dead. I inclose a rough sketch of the bullet as used by me, which you are at liberty to make use of if suitable.—EX-COWBOY.



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FOREST AND STREAM, Box 2,833, N. Y. city, has descriptive illustrated circulars of W. B. Leffin's book, "Wild Fowl shooting," which will be mailed free on request. The book is pronounced by "Nanit," "Gloan," "Dick Swiveller," "Sybillene" and other competent authorities to be the best treatise on the subject extant.

NEW YORK, Aug. 9, 1888.—U. S. Cartridge Co., Lowell, Mass.—Gentlemen: Your new primers gave me the best of satisfaction. I have averaged nearly 80 per cent. of kills both on live birds and targets ever since I began to use them. Yours truly, (Signed) M. M. F. LINDSEY, Supt. American Wood Powder Co., West Hoboken, N. J.—Ad.

Camp-Fire Glickerings.

"That reminds me."

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THERE were out hunting rabbits a few days ago, Jim Shipman and George. They came to a pile of brush and Geo. ascended the brush heap while Mr. Shipman stood guard with his six-shot Winchester in hand; and soon the rabbits commenced coming out about as fast as Shipman could work the pump-gun; and when the smoke cleared away there lay on the ground five rabbits out of six shots. The hunters passed on down the road and soon saw a rabbit sitting in the hedge; and Shipman says, "Here, George, take the gun and see if you can kill it." "But," exclaims George, "what will I do after I hit it with the first load? I do not want to tear it all to pieces, and the gun will keep right on shooting." "Well," says Shipman, "Just hold her up in the air and let her go." "No," says he, "Take it; I won't shoot it, or I will throw the gun down," and so he did and walked off. W. N. J.

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Hurrah! shrieked the cyclone, as it raged through the Dakota town and killed or destroyed everybody and everything—all but one man who escaped in time by getting down a well. But the cyclone whirled off to one side and back again with the church steeple which it most effectually rammed down after him. Moral: Where there's a will there's a way. E. E. T.

Sea and River Fishing.

FISH AND FISHING IN ALASKA.—I.

THE writer has been occupied for several years in the preparation of a report upon the fishes and fishing grounds of Alaska, as a continuation and conclusion of various preliminary papers published in the Proceedings U. S. National Museum, Volume IV.; Bulletin 27, National Museum, and The Fishery Industries of the U. S., Sections III. and V.

The illustrations of all the species known in the Territory have cost a large outlay of time and money, but this work of the U. S. Fish Commission is now almost completed. One cause of delay has been the entire lack, until last summer, of deep-water exploration in Alaska. So far as we are informed, the beam trawl was never used in those waters until the Albatross began her investigation of the fishing grounds, and the only deep-sea species recorded in the Alaskan catalogues are the two lance-tongues, or wolf fish, *Alepidosaurus asculaptus* and *borealis*. It has been admitted that a report based upon the shore fishes, which are the only ones we know at present, would need extensive revision as soon as proper apparatus should be employed in the search for new forms of deep-sea animals. Now that the Gulf of Alaska has been explored to some extent and the collections will soon be available for study, we will be able to add materially to our list of fishes, and determine the elements of a fauna hitherto inaccessible to the student.

At the present time we are acquainted with 135 species of Alaskan fishes, 108 of which live in the sea and 27 permanently or temporarily in the fresh waters. Although this may seem a small number when we consider that a greater list of species can be obtained at various points on our east coast during the period of migration in a single year, it should be noted that the proportion of large and valuable food species is very great, and the individuals of a species in most cases are excessively numerous. The number of kinds of food and bait fishes, omitting several that form an important part of the native supply but are not usually classed with the edible fishes, is 62. Of these 15 are permanent residents of the fresh waters, 8 ascend from the sea to their spawning grounds in streams and lakes, and the rest are marine.

Among the fresh-water fishes Alaska has, in common with the temperate regions of the United States, the burbot, the pike, the lake trout and the long-nosed sucker. These are all abundant and grow to a luxuriant size. The burbot is said by reliable observers to reach a length of 5ft. and a weight of 60lbs. The pike develops great size and fine colors, and has a wide range. Dr. Dawson had one measuring 39in. The lake trout is darker and more shapely than the same species from the Great Lakes, its coloration not being exactly matched in the eastern region. The long-nosed sucker is larger in Alaska than in the United States, and is a well marked race distinguished by the length of its snout and some other characters.

In the sea we recognize old acquaintances in the halibut, the cod and polar cod, the capelin, the spined dog-fish and the sleeper shark. Unlike the fishing grounds of the Atlantic, which have receded further and further away from the shore and into depths at which the fishery has become extremely laborious and hazardous, the haunts of the cod and halibut are close to the land in moderate depths, and their young swarm about the shores. Eleven additional sea fishes are common to Alaska and the Atlantic coast.

The fishery resources of Alaska are undeveloped and under-estimated. The salmon canneries, driven to seek new supplies by the depletion of the great rivers of California and Washington Territory, have pushed their way around the Gulf of Alaska, into Cook's Inlet and northward, until they will soon occupy the outposts of salmon migration; but the treasures of the sea are as little appreciated as were the resources of George's Bank a half century ago. The writer has frequently attempted by personal interviews and printed statements to convey a truthful idea of the liberality of nature in providing for the fisherman in Alaska, affording him a superabundance of fish, conveniently located with reference to good harbors, where ample supplies of fuel, water and game may be obtained; spreading out for his occupation tens of thousands of square miles of soundings, inhabited by valuable fish and the food that attracts them. Only recently, when the continued scarcity of halibut and mackerel threatened to ruin the fortunes and starve the families of many of our New England fishermen, did it become possible to draw attention to the fish wealth of Alaska and precipitate a movement of vessels, whose reluctant lead will soon be followed by fleet upon fleet until the Shumagins and Marmot Island, Semimovsky and Unalaska will be as familiar names as LeHave, George's and Grand Banks. Then we will begin to realize the value of our outlying province and the possibilities of its future.

For the sake of students who may wish to know the present constituents of the Alaskan fish fauna, it will perhaps be sufficient to state that the Preliminary Catalogue, published in Proceedings National Museum, 1881, page 239, is to be amended by removing numbers 7, 24, 29, 110 and 114, and adding the species discovered since the date of the catalogue, which are as follows:

- Psettichthys melanostictus.*
- Porophrys ischyros.*
- Porophrissoides exilis.*
- Delolepis virgatus.*
- Lamparus fabricei.*
- Muraenoides ruberrimus.*
- Xiphister mucosus.*
- Chrotophus polyacteocephalus.*
- Aspidophoroides blrli.*
- Brachyopsis dodacavarus.*
- Cottus acacetrans.*
- Cottus acillaris.*
- Cottus quadrifilis.*
- Cottus quadricornis.*
- Patanocottus gulosus.*
- Sebastichthys nigrocinetus.*
- Sebastichthys nigrocinetus.*
- Micrometrus aggregatus.*
- Coregonus nelsoni.*
- Stenodus nackenzii.*
- Sabellinus umaycusi.*
- Rata stellulata.*
- Somniosus microcephalus.*
- Galeorhinus zyopterus.*

The red rockbass, No. 67, is to be replaced by *Sebastichthys brevispinis*. The sticklebacks are represented by three species, and, notwithstanding their pigmy size and stout spines, form a considerable addition to the food supply of the natives and their dogs. All parts of the coast are inhabited by one or more species, and the ten-spined form occurs in streams and fresh-water lakes.

The flounder family is distributed around the entire coast and includes eleven species, or about as many as occur in corresponding latitudes on the Atlantic shores. All of the flounders and flat fishes of Alaska are suitable

for food, most of them being really excellent, and some reaching a great size. There is one, the starry or stellate flounder, which deserves special mention, because it ranges from the southern portion of California to Mackenzie River, and is, consequently, in latitude at least, the most widely distributed member of the family. The species diminish in size and number north of Unalaska, but the proportion of individuals is rather increased. In the high north the stellate flounder and the little polar flat fish are the prevailing species, and they add materially to the resources of the larder. The latter is universally found in the skin boats of traveling parties on the sea coast, and makes up in abundance what it lacks in size. The halibut is one of the commonest fishes of the Gulf of Alaska and Behring Sea; it is not different from ours specifically, but is a plumper fish, and dwells in shallow water about the wharves as well as in moderate depths. The species reaches a weight of 300lbs., and is abundant "in spots," according to recent testimony of Gloucester fishermen who have transferred their industry to the Pacific coast. Our own investigations convinced us that the fish is common except in localities in which the fur seal and other destructive enemies destroy the young and drive the adults from the spawning grounds. One very singular deep-water flounder, occurring in the Gulf of Alaska and southward to San Francisco Bay, has been called the arrow-toothed flounder, on account of the barbed teeth in its jaws.

The cod family has five species in the sea and one in fresh waters. The Gulf of Alaska and Behring Sea have the largest species and the most important commercially, but the Arctic forms are quite as valuable where they occur as any other kinds of fish food. Besides the true cod, which is just like ours, there are pollock, polar cod, tomcod, wachna and burbot. The cod grows as large as in the Atlantic and extends all around the territory almost to the northern extremity of Behring Sea; it is destined to become the object of a very important industry at no distant day. The pollock is a very different fish from ours, smaller in size, slenderer in shape, and with streaks or bands on the sides; it is one of the best baits for cod, and occurs in large numbers on the fishing banks. The polar cod is said to be a delicious fish, and, although of small size, it is taken in excessive numbers and with the greatest ease; this is a species of the far north and a prime favorite for winter fishing. The wachna is scarcely less important to the natives than the polar cod, and it is taken in large quantities. In Cook's Inlet we obtained our largest specimens, about twelve inches long. The burbot is the species sometimes styled eelpout in Eastern waters; in Alaska it luxuriates and grows to the enormous length of five feet, and is said to weigh as much as sixty pounds.

The marine eelpouts (*Gymnelis* and *Lycodes*) include three species which have no economic value; one of them occurs rarely at the Shumagin Islands.

The blenny-like fishes are somewhat numerous, comprising a wry mouth, which is banded and has scales, a crested blenny, a tufted blenny, three kinds of rock eels, three sword-bearers, two eel-blennies, and a spotted blenny, which is an inhabitant also of Greenland seas and the north Atlantic coast. None of these have any present value as food or bait, but they are eaten by larger and more important fishes.

There is one wolf fish, or sea catfish, in Alaska, limited apparently to Norton Sound, and not abundant.

The so-called cusk of Alaskan waters is not at all like the New England cusk, and it is not eaten except by fishes, notably by the cod, for which it is one of the most attractive baits. The species is *Bathymaster signatus*, and occurs abundantly where the cod is found.

The hair tooth is a singular little species which buries itself in the sand near the edge of the tide, leaving only its mouth free, ready for business, and its eyes on the alert for unsuspecting sand fleas, which seek friendly shelter within the fringes surrounding the lips of the concealed angler, whose food comes to him with no further exertion than that of closing his mouth when it becomes agreeably full.

The little spiny lumpfish is common in Behring Sea and northward; it forms a favorite food of the lancelet mouth. At Unalaska we secured about twenty lumpfish from one stomach of this formidable species. The spiny lumpfish occurs on our own northern coast, coming south to the deep portions of Massachusetts Bay.

The sea snails or sucking fishes include four species, none of them very large, and all of them unimportant commercially.

The alligator fishes are represented by five species, one of which is known also from Atlantic waters. The species are all marine. One of them is considered a great curiosity because of its resemblance to a little sturgeon.

The sculpins constitute nearly one-fifth of the entire known fish fauna of the Territory, and Alaska probably deserves the palm for sculpins of enormous size. I have seen specimens over 2ft. long—it would not be safe to say how much over—but they were a revelation to me. Two of the species inhabit fresh waters; the rest are marine, but the four-horned sculpin sometimes ascends streams. Some of the species wear bony coats of mail and two have well developed scales and are savory food fishes. One of the forms is so aberrant that a new family is suggested for it, and still another rivals the sea raven for grotesqueness of shape. Some of the species in the breeding season have the belly fins greatly elongated and the rays armed with stiff, spiny bristles.

TARLETON H. BEAN.

[TO BE CONTINUED.]

ENGLISH AND WELSH FISHERY STATISTICS.—R. Giffen, of the Commercial Department, Board of Trade, reports the quantity and value of the fish returned as landed on the English and Welsh coasts during the month of December, 1888, compared with the corresponding month of 1887 as follows: All fish except shell fish, 1888, 48,275,000lbs., valued at £287,146; 1887, 54,566,200lbs., valued at £323,718. Shell fish, 1888, £19,404; 1887, £30,475. Total value of fish December, 1888, £306,550; 1887, £354,193.

SEA FISHING IN ENGLAND.—H. S. Harland communicates to *Land and Water* information about cod fishing in the vicinity of Scarborough. Good fishing has recently been enjoyed off the Promenade Pier, on the north shore, and very good sport with cod off the "White Nab" rocks, about two miles south of Scarborough. The fish ran up to more than 20lbs. and were in exceptionally fine condition.

