

made a very bad shot with the ladle, and instead of getting the fish had thrown one of the flies into the boat, where it stuck in my trousers. Nevertheless I got the hook out and saved the fish too. This was luck. Then I got a really fine fish, over two pounds in weight. All had gone well thus far; the fish had behaved like gentlemen, keeping out in the clear water, and making a fair fight. Such an opening was surely the promise of good luck for the rest of the day. Alas, alas! how little we know of what is before us. We certainly had got a trout for dinner, but when fish are rising well who cares to give up with a whole day before him?

I feel that I have digressed shamefully, and that the big fish should have been introduced long ago; but this is even yet a sore subject, and I suppose that is why I find it hard to come to the point. I had made a cast diagonally down stream, when there was a sudden rush and splash that decidedly woke me up. I have missed lots of small trout, but one seldom misses a heavy fish. I struck instinctively and decidedly. The fish seemed to become at once convinced that I was acting strictly on scientific principles, and that he had to play his best card immediately or lose the trick. He made a deadly rush toward the lily-pads, and the reel screamed. I checked him and got back a few feet before his next plunge toward the lilies, out of which I kept him by free application of the butt, the little seven-ounce split bamboo doing its work handsomely. The chief now broke through the lily-pads and we were in clear water, the fish going straight toward the lake, some thirty or forty feet ahead of us. A little further on there was a stake to the right of the channel, and our fish went for it as if he lived there and could not pass without calling. Much stress of rod and tackle was necessary to get him away from it. We now got into the lake, and I implored my red brother to keep me in deep water—"only this and nothing more." Alas, alas! White man is said, not without reason, to be "very unsartin." I include one "Injun" in the same category. The camp now came in sight, with the stout party still sitting in the doorway dozing over his pipe. As we came within his range of sight, slowly drifting down before the wind, my red bent nearly double with something throbbing at the end of the line, and occasionally going slowly around the boat; he sprang up into sudden excitement and activity, dived into the house, whence he emerged immediately, sat down again and leveled a large opera glass at us. Oh! but I was proud. The eyes of my countrymen were upon me. That fish should be sent down to Kinco with the fly and the leader that took him. I should have one of the biggest fish stories to tell. Woe is me, pride goeth before a fall.

Our stout friend gazed at us through his binoculars as long as we were in sight, but a point soon hid us from his view. By this time the fish had given up any attempt at running off the line, or even circling round the canoe, but held on like a bulldog. The knot fastening the leader to the line was visible at the surface; but not another inch could I get him up, and the water was so broken up into ripples by the breeze that I could get no sight of him. Another point loomed up and was passed. I kept urging the chief to keep in deep water; but the traditions of his tribe and his own great experience, no doubt made him deaf to my request. He craftily approached the shore, moved, as he said afterward, by some wretched notion about a sandy beach being a good place to kill a fish. Suddenly my eye caught a clump of lily-pads, and looking up I saw that we were considerably inside the last point passed.

A moment afterward the nature of the strain changed. There was life in it no longer. I reeled up slowly and brought up a lot of brush. The upper fly with whatever it had held was gone! I didn't faint, neither did I break forth in wrath and use objectionable language. Not a reproach did I address to the Indian, whose stoicism was hard to contemplate under the circumstances. Wearily I took off my hat and wiped my forehead, feeling as if life was scarcely worth consideration for the time being. Then "hope told a flattering tale," and I said to myself, if not to-day, why then to-morrow, but that to-morrow has not come yet.

Returning to the spot where we had decided to camp, we met the stout man coming cautiously along the lake shore to see the big fish. Sorry to have disappointed him, but man proposes and his guide disposes. I thought bitterly of that Indian until dinner time, when his manner of serving up trout, potatoes and tea, made me take a more cheerful view of his ability. We are all of us good at something. Cooking was his forte, but what he didn't know about fishing might fill a big book. C. H.

YANKING THEM OUT.—Crossing one of the numerous creeks that empty into the Hudson near New York, is a railroad bridge which is a favorite resort for fishermen. One of the many users of the pole who make this bridge their sporting ground is a very excitable fellow who, at the slightest indication of a bite, will yank his pole so as to invariably entangle his line in the telegraph wires which are at this point rather low. No amount of chaff or advice would cure him of this, although often told that he would pull the head off a fish some time. One day having fastened his rod to the bridge and left his line in the water, he had gone off to a little distance to get more bait. Sitting near the rod was a great practical joker, who no sooner saw his chance than he quietly drew the line out of the water and hooked on a large fish head. Then dropping it in he awaited developments. The nervous fisherman, seeing his float drawn somewhat under water, grabbed his rod and swung it over his head, as usual catching his line in the wires. When he saw the fish's head, he imagined he had pulled it off, and tried to get his line down before any one should see him. But the boys were watching him and guyed him unmercifully. He at last had to break his line, leaving his trophy dangling in the air. He was so mad that he did not come to the bridge again for some time, and even then would not go near the spot of his unlucky adventure.—N.

PHILADELPHIA, Sept. 10.—Complaint has been made that the use of dynamite cartridges is being resorted to for the purpose of securing fish in the streams about and above Jenkintown, Pa. This is a matter which should be attended to by the Eastern Pennsylvania Anglers' Association, as the parties who have resorted to this illegal method, I understand, can be readily apprehended. Your correspondent likewise learned from good authority, while at Manch Chunk, Pa., last week, that Pine Creek and other trout streams near there have been "fished" in the same way. It is hoped that action will be taken against these lawbreakers. Fishing at Barnegat and Tuckerton bays has been better during the past week than the week previous. Weakfish are fairly plentiful, but not large.—Homo.

THE DEAD RIVER REGION.—Boston, Sept. 10.—I have been to the Maine land of trout. The size and numbers of trout in Tin Pond were not exceeded in 1873, the first year I was there, and when the first boat was launched upon its waters. The taking of trout by visiting sportsmen depletes the fish less than did the work of the natives taking them from the spawning beds before the law of protection was in force. And so for the remainder of our fishing days we will visit the Dead River Region, where so many gentlemanly sportsmen wend their way till they number thousands. I did think to send you in a very few lines a record of my late tramp, including a short account of the chain of ponds, through Monmouth, Winthrop, Readfield, Mt. Vernon and Belgrade, which have become a grand black bass resort, the very best in Maine, if not the best in all New England. I had rare sport there for ten days.—J. W. T.

A BIG TROUT.—Sault Ste. Marie, Aug. 30.—The fishing here is very fair and some large trout have been taken. A party of us have been in camp for a few days on Sugar Island, and we killed eleven trout that weighed over three pounds each, one of them scaling 4½ pounds. On coming in to the Chippewa House on the 27th, we were surprised to see a monster of 6½ pounds, which was killed by Mr. H. M. Garlick, of Youngstown, O. It created great excitement, as it is said to be the next to the largest ever killed here. There is no doubt about its being a genuine brook trout, for its caudal fin and red spots were distinctive marks not to be mistaken.—POKE-O'-MOONSHINE.

THE BLACK PRINCE.—This fly, about which so much has been said, seems to be very killing in the Rocky Mountain region. Our correspondent "Cyrtooux," who fishes in that country, sends us a specimen to settle the question as to the fly which should bear this name. As he was the first to mention this fly in our columns as being his favorite we may say that the fly sent was made with black wings, body and hackle, the body was wound with silver twist and the tail was red. It was made by James F. Marsters, Brooklyn, and was identical with one before described.

GROG ISLAND POOL.—Major Lawson B. Bell, of New York city, has leased for a term of five years from Mrs. Louisa Aylett, of the parish of Ashington, in the county of Restigouche, Province of New Brunswick, what is known as the Grog Island Pool, northern bank to shore of the Restigouche River, in the township of Metapedia, in the county of Bonaventure and Province of Quebec.

Fishculture.

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THE CHIEF CHARACTERISTICS OF NORTH AMERICAN FISH FAUNA.

[Read before the American Fisheries Society.]
BY PROF. THEODORE GILL.

I DO not think that I can appropriate the time which I was requested to devote to a communication for your Society more profitably than by inviting your attention to some of the characteristic features of the North American fish fauna. If we include the marine as well as the fresh-water fishes in our study we would have to consider the constituents of four primary different geographical divisions or realms, and we are therefore compelled by the limits of time to restrict ourselves to the consideration of the fresh-water forms alone. America, north of Mexico, forms a primary terrestro-aquatic realm which has been variously designated as the North American, Nearctic and Angloganean region or realm. It is one of the very richest of all in fresh-water types, considerably over six hundred species living exclusively, or nearly so, in the rivers and lakes, and these represent nearly one hundred and fifty genera and about thirty-four families. It is a large exhibit compared with the fauna of any of the other realms.

If we notice the constituents of this North American fauna, we find that they may be segregated into two primary categories. A considerable number of the families are shared with European and Northern Asia, and may be designated as the Arctogean, while an exceptional number of families are peculiar to our continent. These peculiar are the Amidiæ, Hyodontidæ, Percopsidæ, Amblyopsidæ, Aphredoderidæ, Elasmomidæ and Centrarchidæ, and several well-marked sub-families are also limited to the regions. Such are the Camptostomina, Exoglossina, Plagopterinæ, Etheostomina, Haplodotina and Hysteroleporina. It is possible that even the Lepidosteidæ are at present peculiar, but Dr. Bleeker has named as such a species, based upon a Chinese drawing of a fish supposed to have been obtained in China. Fifteen families represented chiefly by marine species, but with members also in the fresh water, are the Petromyzontidæ, Siluridæ, Clupeidæ, Dorosomidæ, Argentinidæ, Salmonidæ, Cyprinodontidæ, Anguillidæ, Gasterosteidæ, Atherinidæ, Labracidæ, Sciaenidæ, Embiotocidæ, Cottidæ and Gadidæ, and among these we find the families which are represented by the same genera in both the old and new worlds.

The fresh-water species and even the genera of most of these families are, however, to a large extent, peculiar to the interior waters; of the others, (1) some are anadromous, like certain of the Salmonidæ, Clupeidæ and Labracidæ; (2) others inhabit fresh and salt water almost indifferently, as the Dorosomidæ, many Cyprinodontidæ, and most Gasterosteidæ, and (3) one (the eel) perhaps should be considered as a salt-water rather than a fresh-water species, inasmuch as it is catadromous and appears to breed only in the sea. Conversely those fishes which resort to fresh water to spawn and therein spend their early days may be considered to be fresh-water forms. If all species which, to some extent, run up into fresh water were included, the list might be very greatly increased, and it is by this inclusion of these species running up into fresh water that the faunas of other countries have been unduly enhanced.

If now we consider the bearings of the known facts, we may deduce the following conclusions:

(1) The number of family types peculiar or almost peculiar to North America and the very large number of genera also confined to the temperate and cold regions of the continent indicate that the region specified has such characteristics as to entitle it to be considered a primary geographical division of the globe which will appropriately bear the name of the Angloganean realm, inasmuch as its habitable portions are occupied by the largest portion of the Anglo-Saxon race. Several of the families peculiar to this realm are almost coincident in their range with its limits, and such coincidence is especially manifested in the case of the family of Centrarchidæ.

(2) If we compare the constituency of our ichthyic fauna with that of the Eurasiatic realm we find several notable contrasts. The North America is distinguished by the great development of Acanthopterygian types, while there are few in the Eurasiatic one. North America has as many as 180 species, while nineteen are all that have been credited to Eurasia. The Centrarchidæ and certain little fishes related to the perches, which have been distinguished as Etheostomines, are very characteristic for the American fauna, and are among

the most prominent features, while those types are entirely wanting in Europe. The catfishes, so abundant in America, and of which there are at least twenty-six species, are represented by only one in Europe, and even that one is of an entirely different type.

Another noteworthy contrast is exhibited by the Cyprinidæ. The species of Europe and Asia are almost all of large size and are the most conspicuous fresh-water fishes of that region, whereas the American species of the family are almost all small and even of minute size, and (if we except the Pacific slope, which has features in common with Eurasia) there are not more than a couple of what can be called large species of the family in the entire region. It is indeed to a related family, the suckers or Catostomidæ, (entirely wanting in Europe proper) that we have to look for analogue of the European Cyprinidæ. Among them we have forms equaling in size the European carp, barbel, and others, and some quite similar in superficial appearance. Summing up all the species we find that Europe has been accredited with 360 fresh-water fishes, while the North American fauna has at least 625.

The number of the genera common to North America and Europe is indeed extremely few, and the idea suggested by some recent authors, that the North American fauna is merely a subdivision of a common Arctogean, Triarctic or Holarctic realm, is entirely traversed and negated by the fish fauna.

It is also especially noteworthy that a number of the types peculiar to America are distinguished by the care which the parents take of their young; whereas the European forms are generally indifferent to the future progeny, and after spawning, leave the eggs to take care of themselves. In this connection it may be recalled to the American Fisheries Society, that the care of the eggs and young is accompanied by an apparent diminution of the number of eggs, and we have a sort of analogy in this respect to the relation between fishculture and nature. The fishculturists assume the part which, in nature, is exercised by the attentive parent, and the eggs and young being provided for, stand a less danger of destruction, and consequently in such, the ratio between the eggs laid and fertilized and the young matured is very much less than that between the number of eggs of the indifferent parents and that of other progeny matured.

BLACK BASS IN GERMANY.—In a letter to the superintendent of the hatchery at Cold Spring Harbor, N. Y., Herr von dem Borne, the well-known German fishculturist, writes: "Perhaps you remember that you recommended to me the introduction of the black bass, and also that I received some of them when Mr. Eckardt returned from America. I am pleased to say that the fish have multiplied abundantly. We had 1,200 in the fall of 1884, and have caught more than 2,200 fry this season."

The Kennel.

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FIXTURES.

- BENCH SHOWS.**
Sept. 22, 23, 24 and 25.—Dog Show of the Milwaukee Exposition Association. John D. Olcott, Superintendent, Milwaukee, Wis.
Sept. 29, 30 and Oct. 1, 2.—Third Annual Dog Show of the Southern Ohio Fair Association. H. Anderson, Secretary, Dayton, O.
Sept. 29, 30 and Oct. 1.—Twelfth Dog Show of the Western Pennsylvania Poultry Society, Pittsburgh, Pa. C. B. Elben, Secretary.
Oct. 6, 7, 8 and 9.—Second Annual Dog Show of the Philadelphia Kennel Club, in conjunction with the Pennsylvania State Agricultural Society. E. Comfort, Secretary, Philadelphia, Pa.
Oct. 6, 7, 8 and 9.—Fourth Annual Dog Show of the Danbury Agricultural Society. S. E. Hawley, Secretary, Danbury, Conn.
Oct. 7, 8 and 9.—Dog Show of the York County Agricultural Society. Entries close Sept. 28. A. C. Krueger, Superintendent, Wrightsville, Pa.
Oct. 8 and 9.—Second Annual Dog Show of the Stafford Agricultural Society. R. S. Hicks, Secretary, Stafford Springs, Conn.

FIELD TRIALS.

- Nov. 9.—Second Annual Field Trials of the Fisher's Island Club, for members only. Max Wenzel, Secretary, Hoboken, N. J.
Nov. 9.—First Annual Trials of the Western Field Trials Association, at Abilene, Kan. Entries close Oct. 15. A. A. Whipple, Secretary, Kansas City, Mo.
Nov. 10, 1885.—Seventh Annual Field Trials of the Eastern Field Trials Club, High Point, N. C. Entries for Derby close May 1. W. A. Coster, Secretary, Flatbush, L. I.
November.—Fourth Annual Trials of the Robins Island Club, Robins Island, L. I., for members only. Wm. H. Force, Secretary.
Dec. 7.—Seventh Annual Field Trials of the National Field Trials Club, Grand Junction, Tenn. Entries for Derby close April 1. B. M. Stephenson, La Grange, Tenn., Secretary.

A. K. R.—SPECIAL NOTICE.

THE AMERICAN KENNEL REGISTER, for the registration of pedigrees, etc. (with prize lists of all shows and trials), is published every month. Entries close on the 1st. Should be in early. Entry blanks sent on receipt of stamped and addressed envelope. Registration fee (50 cents) must accompany each entry. No entries inserted unless paid in advance. Yearly subscription \$1.50. Address "American Kennel Register," P. O. Box 2832, New York. Number of entries already printed 2704.

JUDGES AND REPORTERS.

Editor Forest and Stream:

Apologies of the coming dog shows; now that the "all round" judge, however excellent, has had his day, why may not the "all round" reporter retire into the background also, and let each special judge speak for himself over his own signature, after making his decisions? Then the many who are unable to attend and see for themselves may perhaps acquire some information about the dogs, at present withheld. The reporters have never failed to give us spicy reading, interesting and amusing, disclosing their varying moods. Now their pens are dipped in honey to laud the astuteness of A. in bestowing blue ribbons upon certain dogs, and anon plunged into bitter gall to blame blundering B. for his stupid failure to decorate others of their canine friends. Meanwhile we who are trying to learn something about the dogs of various breeds are left perishing in our ignorance. One critic tells us—by way of consolation perhaps—that only the good dogs are noticed at all, yet how he ridicules them! We read, for example, that the winner "is not clean enough, leggy, faulty at both ends," or that the first prize animal in Class 1,000 is "faulty all over," or "faulty in head, ears, body, legs, tail," etc., until utterly bewildered and weary we begin to wonder how much worse those poor creatures could be who received no awards and were spared all criticism.

If judges are authority on the classes assigned them, can they not be allowed or persuaded to speak for themselves? Or if they are really incompetent will not their statements as well as their awards convict them? The wise "Lililubuzette" to the contrary notwithstanding, the English Kennel Gazette reports after any of the leading English shows are instructive and exceedingly interesting, though quite free from personalities. They give us something about the good points of the winners as well as their faults, and moreover we know just who is responsible for each account—a matter of consolation sometimes.

An artist, puzzled by the conflicting statements of reporters and the remarkable fact (3) in natural history that dogs change in quality and proportion with their owners' names, suggested that large paintings of typical dogs of all breeds be made and placed in conspicuous positions at the shows, where all could see and study them, and judge and compare for themselves without following judges or heading reporters' notebooks.

CONSTANT READER.