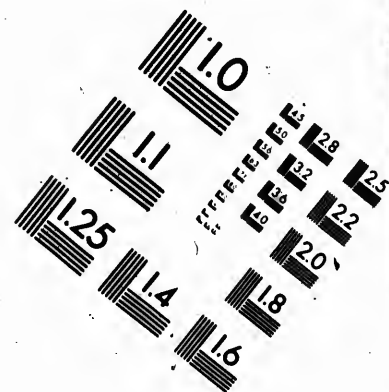
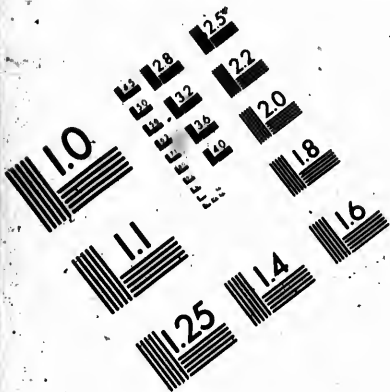




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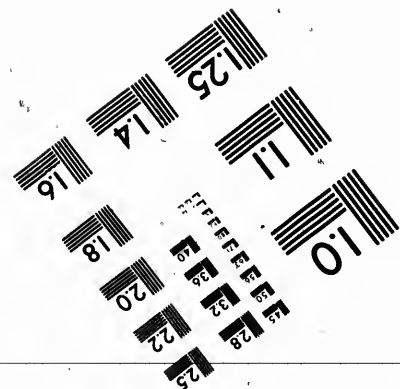
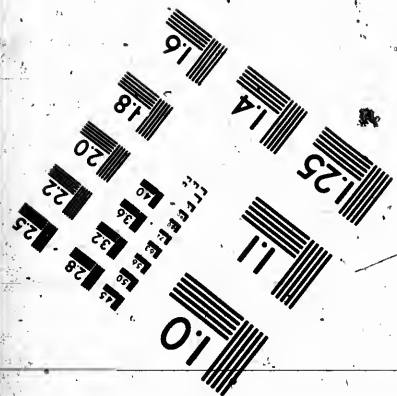
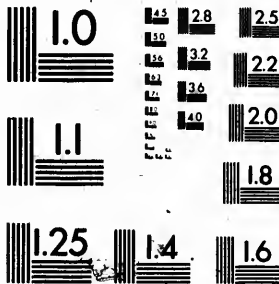
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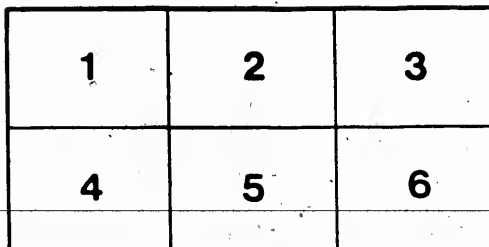
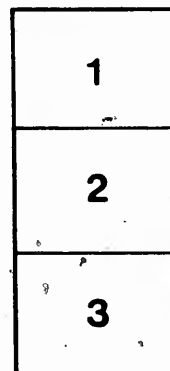
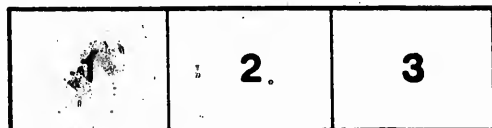
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# Industrial Exhibition Assoc'n OF TORONTO.

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September 3rd to 15th, 1894.

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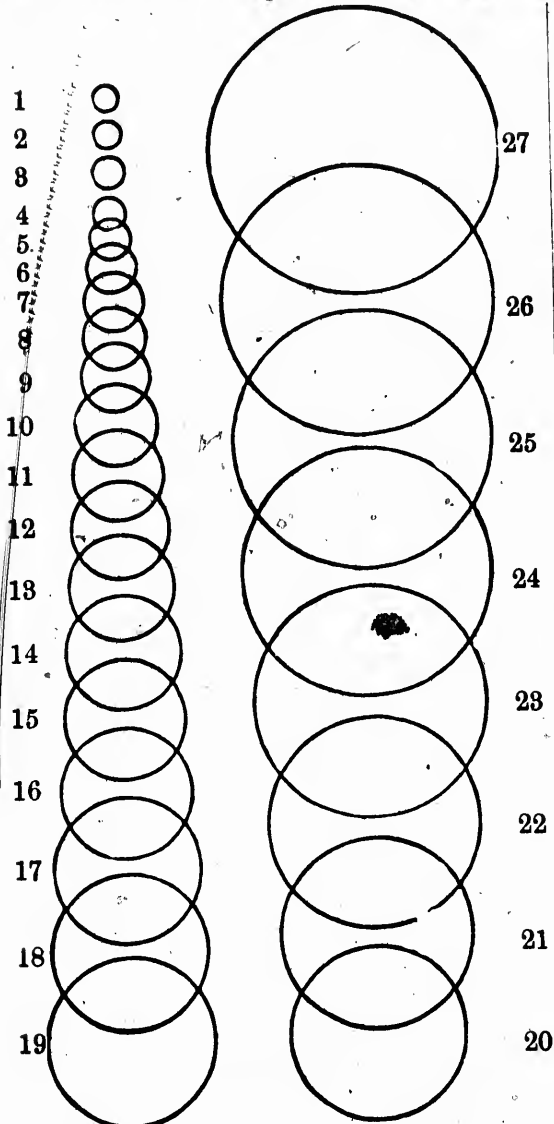
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## Descriptive Catalogue of Exhibits

—IN THE—

# Natural History Building

—OF—

## Toronto Industrial Exhibition.

### INTRODUCTION

The following brief description of the principal exhibits in the Natural History section of Canada's Great Fair, is the result of numerous requests for some such guide to the various objects shown in this department. It is intended, not so much as a list of specimens, which, considering the short duration of the Exhibition, and the varied and numerous objects, would be impossible, but rather as a summary of those specimens most likely to interest the general visitor, so that during a brief visit the most may be made of the time to spare.

It has been thought advisable by the management to devote special attention to particular branches of Biology each year, believing that by taking this course and alternating the subjects, there would be less of that sameness which is unavoidable in an exhibition of Natural History, and also that a better display of each branch could thus be made. This year their special efforts have been directed towards the live fish and reptile, and also in the ornithological exhibits. Many new features have been added, notably the illustration of fish hatching, as shown by salmon and white fish incubators in working order. These, and also the collection of preserved food fishes of Canada, have been kindly lent by the Department of Marine and Fisheries of the Dominion Government. Another exhibit shown for the first time this year is the large glass globes containing specimens of the young and smaller fishes.

The Reptile cases have been refitted and improved, and the interior of the building has been arranged with a view to avoid crowding as much as possible.

As during hot weather especially it is very difficult to keep certain of the more delicate of the fish alive, and also to obtain fresh specimens, it may happen that some may be described in this catalogue without any representative in the tanks. This will, of course, be avoided as much as possible, and only such species described as are likely to be on exhibition.

The common and scientific names of the species will be given in the catalogue and also attached to the specimens, so that there will be no difficulty in distinguishing each object.

## FISH.

Although we have in our lakes and rivers a vast number of species of fish, a large proportion of them are only to be obtained during certain seasons; and unfortunately it so happens that the month of September is about the worst time of the whole year for this purpose. Another difficulty is that of keeping many of the most beautiful and interesting species alive, the large and important family of the *Clupeide*, or herrings, being of this number. The exhibit has, however, been made as representative as possible, and contains many of the most useful and interesting species of the family.

### The Yellow Perch. *Perca flavescens*.

Body oblong, somewhat compressed; the back elevated; cheeks scaly; opercules mostly naked striate; snout projecting; dark olivaceous; sides golden yellow, with six to eight broad cross-bars from back to below middle of side; lower fins orange, upper olivaceous, spinous.

A well-known fish, inhabiting Europe, where it is found as high as 4,000 feet above the level of the sea. In America it inhabits the temperate fresh waters from Labrador to Georgia, but is not found in the lower Mississippi basin. It has been mentioned by some observers that these fish arrange themselves in shoals, according to size. As the perch bites freely, it is a favorite of the young angler; its flesh is firm and good.

### The Sun Fishes. *Contrarchide*.

A family of fishes, including the Basses, characteristic of the Mississippi valley, all but one species (*Archoplites interruptus*, of California) being confined to the waters of the Eastern States and

Canada. Some of the species build nests, and all are voracious and gamey. We have several species of this family in our tanks.

**Grass Bass.** *Pomoxis sparoides*,

Body oblong compressed, the profile comparatively even; fins very high; silvery olive, much mottled with clear green; vertical fins, with green reticulations around pale spots.

**Rock Bass, Red Eye.** *Amploplites' rupestris*.

Body oblong; eye very large, iris red; olive green; sides brassy, much mottled with dark green; young with blackish bars adult with rows of dark spots along sides. Living among rocks.

**Common Sun Fish.** *Lepomis gibbosus*.

Known by a number of names—Bream, Pond Fish, Pumpkinseed, Sunny, etc. Body flattened; eye large, the maxillary or outer bone of the upper jaw reaching its front; cheeks with four rows of scales; spines moderate; pectoral fins scarcely larger than head; opercular spot bright scarlet, moderate; greenish olive; the sides profusely mottled with orange; dorsal fin bluish orange, spotted. An exceedingly common fish in our lakes and rivers, rare south-west. A very beautiful and compact fish, and the joy of the amateur fisherman.

**Black Bass.** *Micropterus dolomieu*.

Small-mouthed Bass. Mouth moderate, the maxillary in the adult not extending beyond eye; scales small; young more or less barred or spotted, never with a black lateral band. Body ovate-oblong, growing deep with age; dorsal fin less deeply notched than in the large-mouthed species; coloration variable; the young, dull golden green, with darker spots on sides, which tend to cluster in short vertical bars; three bronze bands across cheeks; caudal fin yellowish, next black, with a white tip; dorsal with bronze spots; adult nearly uniform green.

The Black Bass is eminently an American citizen, asserting his presence and making himself completely at home wherever placed, his preference being clear and running streams. Plucky, unyielding, he holds out to the last when hooked. As a table fish he holds a deservedly high place.

**Large-mouthed Black Bass.** *Micropterus salmoides.*

Known also as Green Bass, Oswego Bass, &c. Body rather deeper and more compressed than in the preceding, growing deeper with age; scales on cheek large; color, dark green, silvery below sides, with a broad blackish band in young, with some dark spots above and below it; three dark strips across cheeks; adult, dull green, nearly plain. More common than the last, preferring sluggish waters. Also one of the best of food fishes, and eagerly sought for by the sportsman.

**White Bass.** *Roccus crysops.*

This species belongs to a different family from any of the preceding, viz., the *Serranidae*, or Sea Bass. It differs from the perches in having three anal spines, and fewer vertabræ. Back arched, silvery greenish above; sides with several dusky longitudinal streaks, those below lateral line more or less interrupted; specific name meaning gold eye. Great Lakes and upper Mississippi Valley rather common. A very delicate and tender fish.

**The Carp.** *Caprinus carpia.*

According to Jordan the Carp is a native of China, elsewhere it is mentioned as a European fish, and is generally known as the German Carp. These fishes belong to the minnow family, and are distinguished by a very long dorsal fin, which, like the anal fin, is preceded by strong spine serrated behind. The carp is normally covered with large scales, which, in the course of domestication, have varied to a considerable extent, prominent varieties being known as the Leather Carp, naked, and the Mirror Carp, with a few series of very large scales. The Carp has been domesticated in the States and Canada.

**The Gold Fish.** *Carassius auratus.*

This well-known species also belongs to the Carp family; is a native of China, where the original color is olivaceous, the orange, red and silvery forms being varieties much valued for aquaria.

**Stickleback.** *Gasterosteus aculeatus.*

Common Stickleback. Olivaceous, sides silvery, back dotted, opercles striate, sides entirely covered with bony plates; armed with spikes. One of the most curious of fishes, building nests and defending

7  
them with much spirit. Found in fresh and brackish waters of northern regions.

### Speckled Trout. *Salvelinus fontinalis*.

Brook Trout. Head large, the snout bluntish, mouth large, eye large; the tail fin lunate, forked in young. Dusky greenish, sides with red spots, mostly smaller than pupil; back mostly unspotted; barred or mottled with dark; dorsal and caudal fins mottled or barred; lower fins dusky, with an orange band followed by a darker one; belly mostly red in males. There are numerous varieties of this, the finest of all game fishes, at one time abounding in clear cold streams. Trout fishing may be considered the highest degree in angling. The relation of Trout stories the highest degree of !!!

### Lake Sturgeon. *Acipenser rubicundus*.

This fish, which changes considerably with age, is generally known in its younger stages as the Rock Sturgeon. It is one of the few remaining species of what are known as the Ganoid fishes, a term used to distinguish forms which are armed with horny plates, instead of the regular cycloid or etenoid scales; a group related to the mailed forms of the Devonian and Carboniferous ages. The Sturgeons have an elongated fusiform body, with five rows of bony keeled shields; mouth inferior, protractile, toothless; four barbels in a cross-row before mouth; gills four, an accessory opercular gill; tail heterocercal or unequal. The young have a sharp snout and very rough shields, and the spines strongly hooked; these characters disappear with age. Length, six feet. Mississippi Valley, Great Lakes and North. Feeding on small animals and plants, sucked in through the tube-like mouth.

### Lamprey. *Ptarmioan concolor*

Body, eel-shaped, naked, compressed behind; mouth sub-circular, armed with horny teeth, which rest on papillæ; gill openings seven, arranged in a row along the side of the chest; lips present fringed, nostril on top of the head, just in front of the eyes; color, bluish silvery, sometimes mottled, a small bluish spot above each gill opening. Length, twelve inches. These animals attach themselves to the Sturgeon and other large fishes, and feed by scraping off the flesh with their rasp-like teeth. Some of the species were at one time considered a great delicacy.

deposition of the strata.

The Sturgeon and Gar-pike are also members of the Ganoidei. The Dog-fish seems to form the nearest approach of the Ganoidei to the Teleastia or bony fishes, which constitute the majority of our modern species.

**Cat-fish.** *Ameiurus nebulosus.*

Common bull-head, body more or less elongate; lower jaw not projecting; dark yellowish brown, varying from yellowish to black; sometimes sharply mottled with dark green and whiteish; one of the commonest of Cat-fishes. Another species, *A. vulgaris*, having the lower jaw projecting, but resembling this in other particulars, is also abundant in rivers and swamps. These fish generally rest upon the muddy bottom, moving slowly about with their barbels outspread, watching for anything eatable. They spawn in spring, and the old fishes lead the young in great schools near the shore, seemingly caring for them as a hen for her chickens.

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~~to capture young ducks and snakes.~~  
Lurking under some shady leaf, perfectly motionless, with its keen eye it is always on the alert, and should a victim be detected, a rush, a gulp, and all is over. It is a native of the temperate waters of Europe and America. Its flesh white, flakey and excellent.

**Little Pickerel.** *Esox vermiculatus.*

A near relative of the Pike, it is also noted for its voracity. Olive green; sides with many darker curved streaks, usually distinct; and more or less reticulate; fins mostly plain; flesh white and good; average length, twelve inches.

**Creek Chub.** *Semotilus atromaculatus.*

Horned dace. Body robust; head large and broad; barbel minute, not evident in the young; dusky, little silvery; a dark band at shoulder; young with dark lateral band, variable. In small, clear brooks.

tion supposed to be possessed by these animals, and which, according to some, gives them the power of attracting their prey. My own observations lead to a very different conclusion, viz., that while the eye of snakes in general is very far from possessing any such power, it is the tongue that is the attraction. It will be seen that the snakes have a habit of protruding this organ, not in the manner of other animals, but with a rapid flickering motion, which any one might mistake for the movements of an insect hovering over some object. This I believe to be the intention of the snake, it is simply a lure for bird or frog, which, spying the fluttering object, dashes toward it, intent on its capture; an open mouth, a sudden dart, and the would-be victor becomes the victim. I think this will be found to be the true solution of the matter. My observations have been principally in connection with the Moccasin, which is comparatively sluggish in its movements, and which makes considerable use of the tongue in this manner. The true danger from a snake lies in the poison fangs,

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In its native haunts in North Carolina to South Illinois, Arkansas and southward, it is often found resting on overhanging bushes over streams watching for frogs and fishes. This species is considered even a more dangerous reptile than the Rattlesnake, and, unlike that animal, gives no warning of its presence.

**Chain Snake. Thunder Snake.** *Ophibolus getulus.*

Black, with narrow yellowish lines forking on the flanks, each fork embracing a large black spot; belly checkered; scales 21, ventral plates 210 to 240; length 50 inches, variable. This snake is represented westward by variety (*sayi*) called the King snake. Lustrous black, many scales, with a yellow spot in the centre; these sometimes forming cross lines on back; belly blotched. A handsome snake, said to be an enemy of the Rattlesnake.

**Milk Snake.** **HOUSE SNAKE.** *Ophibolus doliatius var. triangulus.*

Spotted adder, greyish, with three series of brown rounded blotches bordered with black; about fifty of them in the dorsal row;

~~... .. a very snake, five feet long, and had~~  
another all over but about one foot, when it was rescued, and is now  
alive.

*Cemophora coccinea.*

Crimson, with 20 to 26 black rings enclosing yellow ones ;  
yellowish below. Southern to South Ohio and Arkansas. A very  
pretty and active snake, with lots of pluck.

*Coluber emoryi.*

Ashy grey, with transverse brown blotches ; verticle plate elong-  
ated. It will be noticed that one of the specimens is differently marked,  
this probably owing to sexual distinction.

**Blowing Adder.** *Heterodon platyrhinus.*

Vary variable in coloring, sometimes brownish, reddish, or even  
uniform black, *var niger*, a peculiar snake ; when disturbed it de-  
presses and expands the head, hissing and threatening, but it is per-  
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artificial ones, which will be illustrated by practical work in the Building.

The principal exhibit of Birds and Mammals is by Oliver Spanner & Co., Taxidermists, 265 Yonge Street, and comprises a number of cases got up specially for this Exhibition, comprising three Bald Eagles, Coweens, Native Ducks, Sandpipers, and Plover; over 50 varieties of Native Birds, case of Australian Birds, Wild Cat, Lynx, and Fox Squirrels; a Screech Owl attacked by Blue Jays. Cases 13 and 14 obtained the only medal given at World's Fair for this class. Two males of *Paradisea augustievictoriae*, a newly-discovered Bird of Paradise, from German New Guinea, the first ever brought to Canada, also a large number of Corals, Sea Fans, Sponges, Star Fish, &c., &c.

Several cases of Birds are exhibited by Mr. James Goldie, of Guelph, and contain many specimens that are now rarely met with in such perfection; the superior merit of this collection will at once be seen.

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All

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