

A VISIT TO LLOYD'S CRYSTAL PALACE AQUARIUM

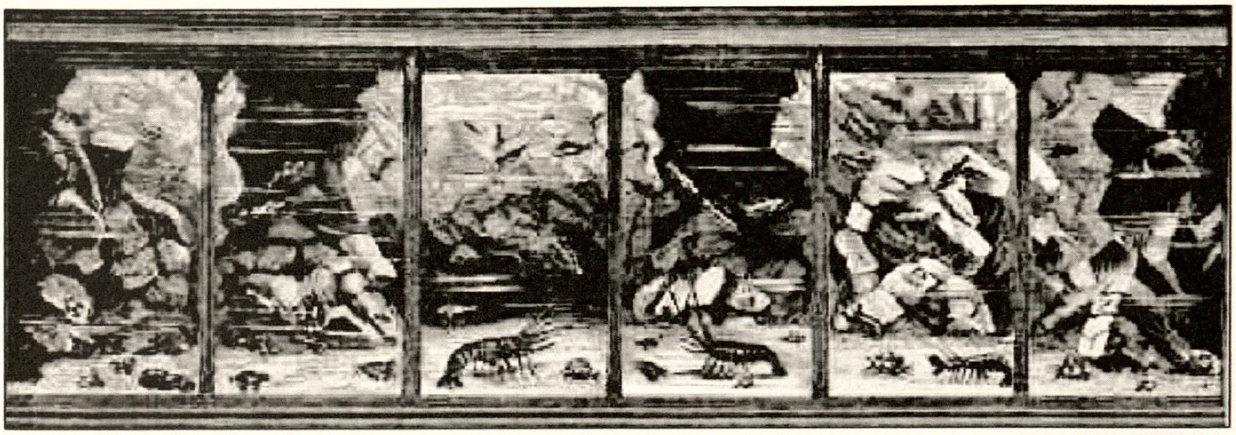
by Chris Meister of Royal Oak, Michigan

'The 10th of November [1871] will long be remembered... as the day which witnessed the opening of this magnificent aquarium.'[1]

So noted the journal *English Mechanic and World of Science* reporting upon the Crystal Palace Aquarium. It was the largest aquarium in the world, and the crowning event in the career of its designer, William Alford Lloyd (1824-1880). Its opening was indeed an auspicious occasion with 500 invited guests, including Richard Owen, of the British Museum, and Frank Buckland, the celebrated natural science author and fisheries expert.

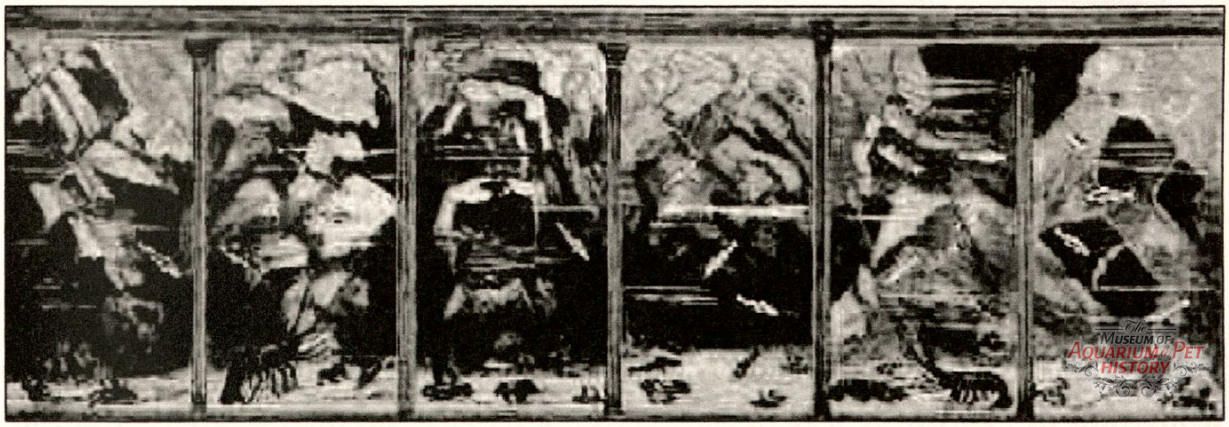
The Art Journal reported the proceedings:

> 'The Aquarium was then publicly 'opened' and 'inaugurated' by Professor Owen and Mr. Frank Buckland, who delivered addresses to the audience, highly complimenting Mr. Lloyd, whose long and continuous efforts to promote the study of marine-produce have been at length crowned by success.'[2]



In truth, Lloyd's career in natural science had been a series of ever-greater successes. He was one of those wonderful geniuses that flowered in the Victorian era. He became enthralled with fish keeping when he happened to peer into a window of the Fish House - the first public aquarium, which opened in Regent's Park in 1853. At the time he was a stocker in a London bookstore, earning barely enough to support his wife and daughter, but he was hooked, so to speak. He began keeping sea anemones, rescued from the folds of discarded fresh oyster shells and nursed back to health. His interest grew and he earned extra income writing articles on his observations for science journals. In time he opened the first shop to cater to aquarium enthusiasts, and was widely recognized as an expert - perhaps the expert - on the subject.

This led to his being hired to design public aquaria on the Continent. The Fish House was little more than a green house with table tanks displaying aquatic life. It was plagued with problems and Lloyd knew he could do better. In Paris he designed the first public aquarium as a building built for the purpose, with display tanks set into the walls similar to those we are familiar with today. It opened in 1860 and consisted of a single corridor, with 14 marine and fresh water tanks along one side.



Exhibition tanks in the Crystal Palace Aquarium top and bottom of page



The Crystal Palace Aquarium

The Paris Aquarium led to Lloyd being hired to design and operate another in Hamburg. He basically mirrored the Paris design, creating a corridor with tanks on both sides. Lloyd devised many solutions for problems with fish keeping, including using dark reservoirs to naturally purify expensive salt water so it could be safely recycled in the tanks instead of being discarded. This resulted in an economical operation displaying healthy fish in crystal clear water. The success of the Hamburg Aquarium led to the building of many others on the Continent following its 1864 inauguration. Lloyd was involved in the design of some of these, while others merely built upon his work.

In 1870, Lloyd was able to return home to London and build the largest aquarium in the world for the Crystal Palace. The *English Mechanic* provides us with a glimpse of a visit late in 1871, following a stroll through the Crystal Palace proper.

> 'The aquarium is entered from the tropical department, and extends toward the water-tower. The visitor descends a flight of steps, and passing through a door, finds himself in a broad and spacious corridor, on one of which are three handsome rooms or alcoves containing black marble tanks with brass fittings. On the other side are twenty large tanks of different sizes, with plate glass fronts set in the wall. They are lighted from above... There can be no doubt that this aquarium will be of much use, both practically and scientifically, and it is certainly well worth a visit.'[3]

My wife Katie and I were able to make a visit 144 years later in March 2016, through the kindness of the Crystal Palace Foundation, and Martin Frelford in particular. Our interest stems from our volunteer work at the Belle Isle Aquarium in Detroit. It was designed by the Detroit architect Albert Kahn in



Excavation of part of the site of the Crystal Palace Aquarium in 2008

PRICE TWOPENCE.

CRYSTAL PALACE

PROGRAMME

FRIDAY, MAY 23rd, 1890.

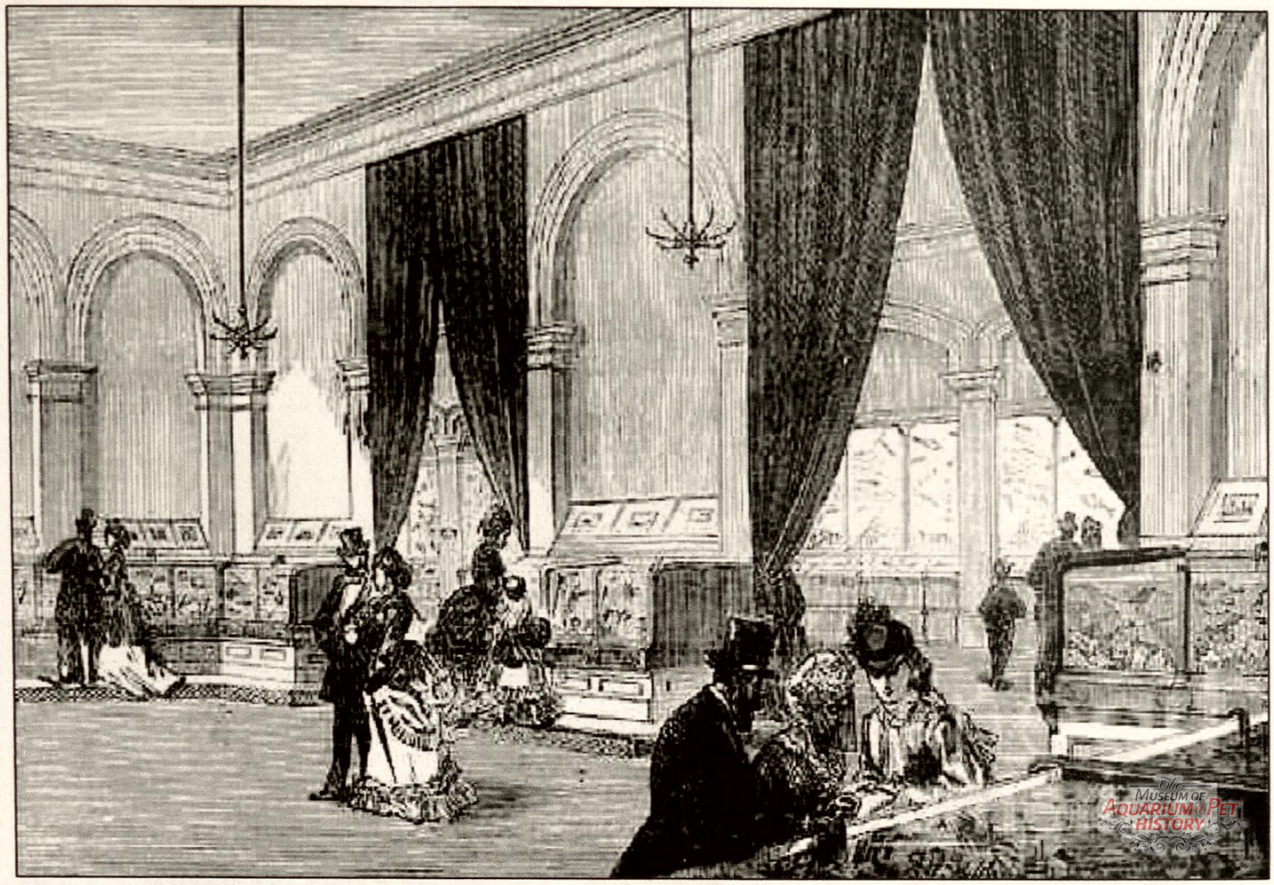
Open from 10 a.m. till 8.30 p.m.

THE CRYSTAL PALACE AQUARIUM

At the Northern or Tropical End of the Palace, near the Byzantine Court.

A Monster Alligator and two fine Seals are now being exhibited. The Animals are fed at frequent intervals. **Admission, Adult, 6d.; Child, 3d., or by Crystal Palace Season Ticket.**

Advert for the Aquarium in 1890 Crystal Palace Programme



The Crystal Palace Aquarium

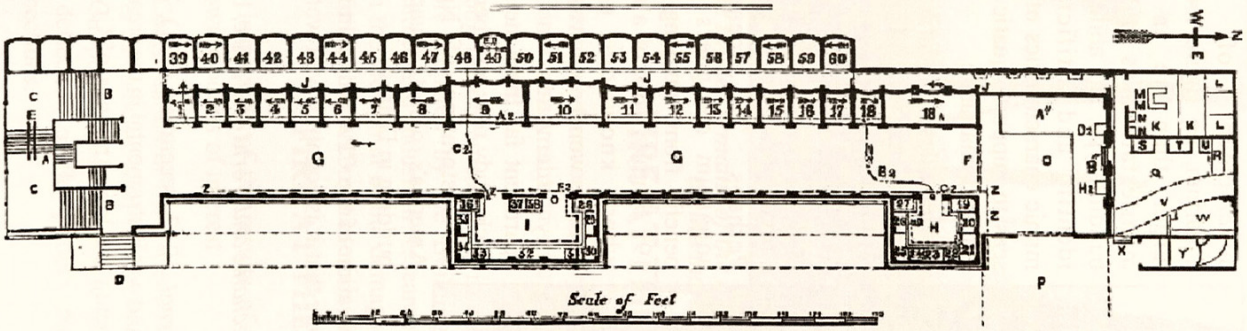
1900, but it was clearly patterned after Lloyd's Hamburg Aquarium; it even had dark reservoirs buried beneath the grounds. My hope is to determine if they still exist and, if so, possibly excavate and bring into use on some level.

The Paris and Hamburg Aquaria are long gone, so the only place to study an actual example of Lloyd's famous dark reservoirs appears to be the ruins of the Crystal Palace Aquarium. (Lloyd consulted on the design of the Naples Aquarium, which still is in operation, but - situated as it is next to the Mediterranean - there was no need for dark reservoirs on the CPA scale.)

Only the portion of the CPA near the water tower has been excavated, but a portion of the reservoir can be seen between the shallow arches that once supported the floor in the corridor with the wall tanks. Other parts of the works, the culmination of Lloyd's endeavours, have been uncovered as well. While the CPA only functioned as an aquarium until the 1890s, it was renowned as the best designed of its time. It was surpassed in size and popularity, but never in quality.

The excavation work at the CPA is of immense value to the study of the history of natural science. While many of Lloyd's fellow naturalists contributed to the

PLAN OF CRYSTAL PALACE AQUARIUM.



KEY TO PLAN.

A Staircase from Palace.
BB Staircase to Palace.
CC Storerooms below Staircases.
D Communication with Palace Grounds (public).
E Turnstiles.
F Screen at north end of Saloon.
GG Saloon, containing Marine Tanks 1 to 18A.
H North Room, containing Marine Tanks 19 to 27.
I South Room, containing Marine Tanks 28 to 38.
JJJ Attendants' Gallery, containing reserved Marine Tanks 39 to 60. (Private.)

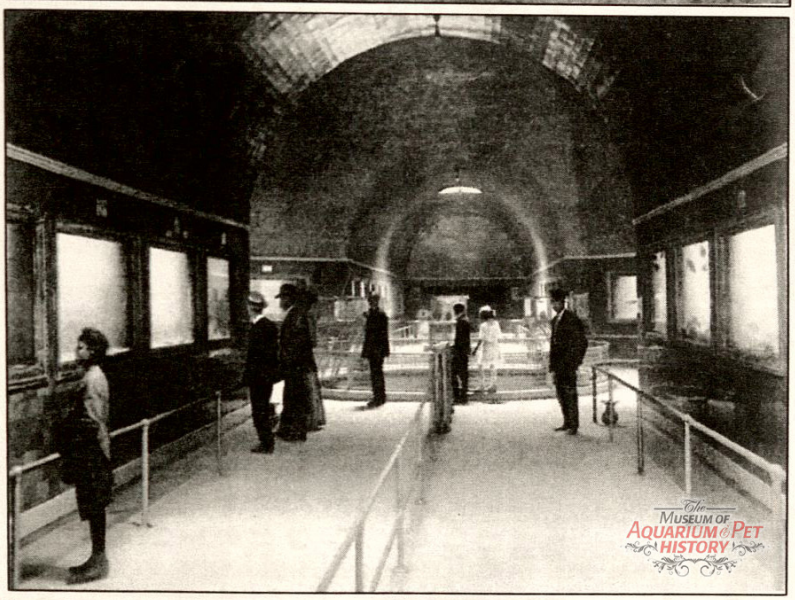
KK Room, containing as follows:—
LL Two Steam Boilers, and
MM Two Steam Engines, and
NN Two Steam Pumps.
O Junction, with Conservatory, to contain Fresh-water Tanks. A' B'.
P Part of Conservatory (upper end).
Q Workroom.
R Slab for preparing Food for Animals.
S Store Cupboard.
T Slab.
U Sink.
V Flue.

W Office.
X Communication with Palace Grounds (private).
Y Heating Apparatus room.
ZZ Heating Pipes.
A2 Sea-water Pipes supplying Tanks 1 to 18.
B2 Sea-water Pipe supplying Tanks 19 to 27.
C2 Sea-water Pipe supplying Tanks 28 to 38.
D2 Point of issue of Sea-water from Reservoir to circulating system.
E2 F2 G2 Three points of entrance of Sea-water from circulating system to Reservoir.
H2 Float showing height of Sea-water in Reservoir.

The direction of flow of Sea-water in the Tanks is shown by arrows, which for want of space are omitted in Tanks 19 to 38, 41 to 43, 45, 46, 48, 50, 52 to 54, 56, 57, and 59.

The Museum of Aquarium & Pet History





Belle Isle Aquarium in Detroit, USA

development of the aquarium, no figure looms larger than he in its manifestation as public building type. His ability to identify and artificially mimic characteristics of the seas to support aquatic life is truly remarkable.

While today's aquaria are complex marvels of high technology, they are basically designed to achieve the same ends as Lloyd pursued in 1870. Perhaps 21st century aquarium designers can benefit from studying the 19th century work of a man whose knowledge grew from his wonder at nurturing tiny anemones in his apartment far from the sea. Such study may also benefit the restoration of North America's oldest aquarium building in Detroit.

Given its importance, I dearly hope the excavation of the CPA will continue. Meanwhile, I agree with the *English Mechanic* that it is certainly well worth a visit.

1. 'The Crystal Palace Aquarium,' *English Mechanic and World of Science,* 14 (8 December, 1871), 306.

2. 'Minor Topics of the Month,' *The Art Journal,* 10 (2 December, 1871), 295. Owen, of course, coined the term 'Dinosaur' and was instrumental in the creation of the prehistoric reconstructions that still haunt the lower regions of Crystal Palace Park.

3. 'The Crystal Palace Aquarium,' 306.