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Contents.

(Illustrated articles are marked with an asterisk.)

erican boys and American	235	Letter boxes, street car	235
abor	235	Light, electro-mechanical	236
rels, steel	236	Locomotives of 1831 and 1891	239
line, new heart tonic	236	Millstones, rock emery	235
ser, colored	236	Mixer, quick delivery, Brough	235
ical action at low tempera-	236	Post office at Exposition	231
ure	237	Power, transmission of, Edison's	236
re, traveling*	238	improvement*	236
ectric systems at Exposition	239	Prints, blue, brown	231
ectricity at Exposition	237	Recorder, steam pressure, Lewis	235
osition, Columbian	238	Roadbed, metallic, Kaufman's*	232
osition, Columbian, opening	238	Science, modern, conquests of	235
osition notes	239	Screens, magnetic	237
od, canned, industry*	236	Steamer Christopher Columbus*	237
rnaces, electric*	232	Stone age in Tasmania	233
urance, life	232	"Strip," the electrician*	233
igation in Arizona	232	Tree growths, curious*	233

TABLE OF CONTENTS OF

SCIENTIFIC AMERICAN SUPPLEMENT No. 906.

For the Week Ending May 13, 1893.

Price 10 cents. For sale by all newsdealers.

HITECTURE.—St. Theodore, Venice.—Curious results of the	1448
ation of the statues on the Venetian monoliths	
LOGY.—The Position of Pathology among the Biological	1448
By Prof. RUDOLF VIRCHOW.—A most valuable and	
ve paper by the great German biologist, recently de-	
fore the Royal Society	
—Fertilization and Hybridization.—The production of	1448
es and other plants.—The results of recent experi-	
ments	
HEMISTRY.—Elegances from the German Journals.—By	1448
Y. MOORE.—A direct-acting analysis and products, princ-	
y in the line of pharmacy, of interest to druggists and medi-	
cationists	
CIVIL ENGINEERING.—Bridge over the Mississippi, at Mem-	1447
phis, Tenn.—Details of the cantilever bridge of third greatest	
span in the world.—3 illustrations	
Drainage of the Valley of Mexico.—The interesting problem of	1447
draining the city of Mexico.—Present aspect of the tunneling	
operations now in progress.—1 illustration	
ELECTRICAL ENGINEERING.—Reynolds' Instructions for	1447
Erecting and Testing Lightning Conductors.—Elaborate instruc-	
tions for establishing lightning protective systems	
MECHANICAL ENGINEERING.—Blake New High Duty	1447
Pumping Engine.—A direct-acting flywheel pumping engine by	
the George F. Blake Manufacturing Co., of this city.—1 illustra-	
tion	
Improved Quadruple Expansion Engines.—Mining pump en-	1447
gines of English construction and of the most advanced type.—1	
illustration	
METALLURGY.—On Some of the Mechanical Properties of	1448
High Steel as Related to its Composition and Structure.—By	
JOHN W. LANGLEY, Ph.D.—A valuable contribution to this	
branch of metallurgy, involving a consideration of fusibility,	
hardness, toughness, tendency to water cracking, and other pec-	
uliarities of steel.—5 illustrations	
MISCELLANEOUS.—Confetti and Serpentine.—The supplies	1448
for Carnival time in the city of Paris.—The harmless weapons of	
the revelers.—4 illustrations	
The Bigrath.—A species of pantograph for producing two copies	1447
of a letter at once.—1 illustration	
Gun Drill in the Upper Alps.—Italian Army Corps.—1 illustra-	1447
tion	
VAL ENGINEERING.—H. M. S. Australia.—The belted cruiser	1447
Australia, of the British navy.—1 illustration	
The Effects of a Collision.—Illustration of the effects of a recent	1447
collision in Boston Harbor.—1 illustration	
HOTOGGRAPHY.—A Photographer's Electric Pencil.—Several	1447
applications of electricity to the retouching of negatives.—1 illus-	
tration	
Photographing Interiors.—By ELLERSLIE WALLACE.—Practical	1447
as on this interesting branch of the photographic art	
PHYSICS.—The Specific Heat of Liquid Ammonia.—By C.	1448
KEING and J. E. STARR.—Direct determination of this fac-	
A new physical constant determined	
CHEMISTRY.—Improvements in the Manufacture of Borax.	1448
N. WARREN.—A method of producing borax from com-	
mon and boracic acid	
Collapse of Fountain Linings.—By THOMAS WARWICK.—A	1447
study of deterioration of soda water fountains.—Its cause and	
remedy	
Painting of Wood and Iron Structures.—By EDWARD H.	1447
—A valuable paper on paint from the point of view of the	
ing engineer	
Painters.—By T. K. SPENCE.—The aspect of the manufac-	1447
turing papers from the artistic standpoint	

OPENING OF THE WORLD'S COLUMBIAN EXPOSITION AT CHICAGO.

On the first day of the present month the Columbian World's Fair, at Chicago, was formally opened. The programme for its inauguration was simple and effective. It included music, prayer, poetry, and oratory, followed by an official reception by the President of the United States and the officials of the Fair and foreign commissioners. The music was rendered by a band of six hundred musicians; the prayer was delivered by the blind chaplain of the United States Senate, who, as he was led to his place upon the platform by his adopted daughter and faced the great audience, which he could not see, gave the requisite touch of pathos to the occasion. The principal oration was delivered by Director-General Davis, president of the Exposition. President Cleveland followed him in a very short address, warmly appreciative of the wonderful work which has been done at Jackson Park. On a table near his left hand was a gold telegraph key. As he finished his address, he pressed the key. The closing of the circuit marked the beginning of the Fair. The electric current started the machinery. The electric fountain began to play, some seven hundred flags were unfurled, and the White City, as it has been appropriately called, started into life. Its brief existence began with the pressing of the key by the President of the United States.

The Fair is designed to commemorate the discovery of America by Columbus. As it was to take place in the temperate zone, the summer was the proper season for it. The definitive site was determined at so late a day that the time afforded for preparation was unavoidably very short. Such considerations as these justified the postponement of its opening from October, 1892, the true quadri-centennial, to May, 1893. Six months more were afforded for the construction work, and the only possible time for it, the summer season, became available.

Seventeen years have elapsed since the United States, by a World's Fair, celebrated the centennial of their independence. The original exhibition of the character of a World's Fair was held in England in 1851, under the auspices of the Prince Consort of Great Britain. After exhausting its superfluous energies during centuries in international war, the world made an effort to establish an international contest in the arts of peace, and succeeded. The Crystal Palace, of London, a building unique in construction, and in many processes used in its erection, fittingly marked an epoch in itself, irrespective of its contents. New York followed the example, and soon after had its own Crystal Palace in what is now known as Bryant Park.

World's Fairs have been frequent since the early days referred to. London, Paris, Vienna, Philadelphia, have successively surpassed previous efforts. But the crowning achievement in every sense is that established on the shores of the inland sea—Lake Michigan. In every respect the Chicago exposition surpasses anything which the world has seen.

The readers of our columns have learned of the new methods of construction employed. The very walls are covered and decorated in a peculiar way. The architectural features, striking and chaste, have their impressiveness increased by their gigantic size. The same element affects the superb groups of statuary employed upon the buildings. But not content with this much, the highest skill of the landscape artist has been invoked. The water front has been utilized to the fullest possible extent in introducing the beauties of lake scenery. A new city built upon the low shores of the lake made the Venetian character appropriate, and the beautiful canals of old Venice are reproduced by the side of the pre-eminently modern Chicago. The entire conception and production are unique.

A World's Fair has never been held in a country of so large a population as that of the United States. A quarter of a million of people were present at its opening. Even this number at first sight might seem disappointing, a fact which alone indicates the immensity of the enterprise. But Chicago after all is a center of population not greatly exceeding a million of souls. Philadelphia, but two hours distant from New York, represented in 1876 an available area inhabited by several times this number. As the season advances the great trunk lines will pour thousands of visitors from all parts of the world into the metropolis of the lakes, and the White City will be adequately tenanted day by day.

Every world's fair has surpassed its predecessor. Such is the rule of existence of these institutions. Yet so immense is the Chicago Exposition, so utterly unprecedented in every respect, that it is hard to believe that it will be excelled in magnitude or beauty for many years to come.

The benefits direct and indirect to Chicago and to the West cannot well be overestimated. Even to-day the most serious misinformation as to the United States obtains in Europe. The present occasion will be a true revelation of an unknown civilization to many visitors to our shores, who do not realize that a city almost as large as Berlin has within the span of a lifetime grown

up at the foot of Lake Michigan, nearly a thousand miles from the nearest sea port.

In this sense the Exposition will not be confined to the area, large as it is, of Jackson Park. The preliminary sight of New York City and the thousand mile ride through the Empire and Lake States, or over the Allegheny Mountains and across Pennsylvania and Ohio, teeming with industry of all kinds, will be the most impressive part for many. Over this ground the work of the past century is depicted. After lying almost inanimate for three hundred years' the discovery of Columbus took effect and awakened to life. It is only the last hundred years which have made the Columbian Exposition possible.

We have in preparation an extensive series of illustrations of notable objects pertaining to the Exposition, publication of which will soon be commenced. It will of course be impossible for us to illustrate all of the wonders gathered at Chicago; but we hope to place before our readers the pictorial forms of many of the most interesting things, and to present a general idea of the greatness and nature of this, the most recent and most remarkable assemblage of modern productions of science and the industrial arts.

THE WORLD'S COLUMBIAN EXPOSITION.

The World's Columbian Exposition is now a reality. It has been formally opened to the public, and although there had been more or less fear that the great claims made for it would not be realized, the results are even greater and finer than could have been anticipated. Chicago has fully demonstrated that she is competent to conceive, in all its details, the scheme of by far the greatest exposition ever undertaken; that she can carry it to consummation on a much broader scale than was first conceived. Not only has Chicago accomplished this, but she has paid out of her own coffers the chief cost of this vast undertaking. She has completed her part of the work in twenty-one months, and she has handled over 250,000 people on the opening day without difficulty. Such an achievement is stupendous; it is even beyond the conception of those who have witnessed the progress of the work.

A dreary sandy waste and swamp of 700 acres has been converted into a veritable city, the "White City," as it is called. The land has been transformed into a most artistic and beautiful park. It has been provided with a system of drainage designed on the latest improved scientific principles. Water, gas and electricity are supplied in almost unlimited quantities in all parts of the grounds, while compressed air is furnished in nearly all the larger buildings. The electric lighting plant, both arc and incandescent, has nearly twice the capacity of all the central lighting stations combined in the city of Boston. Practically 400 buildings have been planned and constructed, the aggregate floor area of these buildings reaching about 200 acres. These are some of the things that have been conceived and carried out in this remarkably short space of time.

There are things in connection with the Exposition that can be criticised. It is the fruit of human ability and effort. But there is so much that challenges admiration that the visitor, with any knowledge of what the Exposition is, how much has been accomplished, and under what difficulties work has been carried on, cannot fail to appreciate the great undertaking for what it really is. President Cleveland well said in his address at the opening exercises that we ask for no allowances on account of our youth. Neither the United States nor the Exposition need ask for such allowances. Every citizen should feel proud of the undertaking, and he who misses seeing it misses the crowning achievement of the century.

THE ELECTRIC SYSTEMS AT THE COLUMBIAN EXPOSITION.

One of the first exhibits ever made of an incandescent electric lighting plant in which the power to generate the electricity was furnished by steam was the one made at the Paris Exposition of 1878 by Mr. Edison. The engine and dynamo were practically one machine, the engine being probably the first one of high speed used for purposes of generating electricity. It was about this time that the incandescent lamp became a commercial success, and coincident with the accomplishment of this came the practical development and use of electricity. With the precedent of this plant it would be supposed that direct-connected plants would have become popular, especially as this particular plant was put into daily use in a light station at Milan and did excellent service.

Such high rates of speed were demanded that the matter of regulating the engine was a serious question to engine builders, and because of the greater success that attended the regulating of speed by belting down or up, the matter of direct connection was practically dropped in this country for many years. It has been carried to a point of much perfection in Europe, and is now fast coming into use in this country. Much larger units of power and of electrical energy are demanded each year, and while builders have been adding refinements to the wonderfully per-