SCIENCE:

A WEEKLY NEWSPAPER OF ALL THE ARTS AND SCIENCES.

PUBLISHED BY

N. D. C. HODGES,

47 LAFAYETTE PLACE, NEW YORK.

SUBSCRIPTIONS.—United States and Canada.....$3.50 a year.
Great Britain and Europe..... 4.50 a year.

Science Club-rates for the United States and Canada (in one remittance):

1 subscription	1 year		$ 3.50
2	"	1 year	6.00
3	"	1 year	8.00
4	"	1 year	10.00

Communications will be welcomed from any quarter. Rejected manuscripts will be returned to the authors only when the requisite amount of postage accompanies the manuscript. Whatever is intended for insertion must be authenticated by the name and address of the writer; not necessarily for publication, but as a guaranty of good faith. We do not hold ourselves responsible for any view or opinions expressed in the communications of our correspondents.

VOL. XIV. NEW YORK, SEPTEMBER 13, 1889. No. 345.

CONTENTS:

EDWARD ATKINSON'S PLANS FOR THE WORLD'S FAIR OF 1892.

THE suggestions made by Mr. Edward Atkinson, and printed in *Science*, of Aug. 30, bearing upon the scope of the exhibition to be held in this city in 1892, have attracted much attention from many business men. Voicing the sentiments of those business men and others interested in the success of the exhibition, the president of the Chamber of Commerce of this city requested Mr. Atkinson to present his views more in detail. To this request Mr. Atkinson responded with the following detailed plans for the development of an historic and economic exhibit on certain lines of industry which might be made a part of the proposed exhibition of 1892:—

We may begin with the art of spinning and weaving. The origin of these arts is prehistoric. From the earliest dawn of history woven fabrics have been in use. The linen in which the mummies of Egypt are wrapped is equal in the fineness of the thread and in the texture of the web to many of the examples of the finest work of the modern loom. The distaff is classic, but unless the railway has completed its revolution, some of the natives of northern Italy could be brought to the exhibition who would spin linen thread with the distaff after the manner of Penelope. The loom and the weaver are pictured, as I have been informed, on the walls of Babylon and on the pyramids. The hand-loom worked by the native Egyptians in the same way, and of identical type, could be brought to the exhibition. Neither the inventor nor the date of the invention of the spinning-wheel is known. The spinning-wheel of the prehistoric type is worked to-day for clothing nine-tenths of the population of China; the wheel and the spinner, the loom and the weaver, could be brought together from there. The wheel and the loom of the same identical type are to-day in operation in the heart of the Southern mountains, working on cotton and wool, and in the western counties of Ireland, working on Irish homespun. The representatives of these prehistoric arts could be brought from there and from many other points in Asia, Africa, South America, Australia, and Polynesia, with examples of all their fabrics, ancient and modern.

Such an exhibition as the one proposed in this paragraph would undoubtedly lead to the establishment of a great and permanent textile museum and weaving school, equal or superior to that at Crefeld in Rhenish Prussia, which was formerly open to Americans, but from which they are now excluded. Such schools have only lately been established even in England, although they have existed for a long time in Germany and France. We have made a small beginning in Philadelphia and in Boston, but nothing in any measure adequate to the necessities of the case. A complete museum of textile fabrics and of looms of various kinds would be among the primary elements required for such a school. The co-operation of the Arkwright Club of Boston, of the Wool and Woollen Association, of the Silk Association, of the Manufacturers' Club of Philadelphia, and of other similar organizations, might be called for in determinating the conditions both for the proposed exhibition and for the ultimate destination of the examples of machinery and fabrics which might be brought together at that time.

Within the same rail on the floor of the Atlanta Exposition were two hand carders, two spinners with their wheels, and one weaver, — five persons who could make in a day of ten hours eight yards of narrow coarse cotton osnaburg. Within the same rail was the carding and spinning machinery of the Willimantic Thread Company and the looms which were sent there from Massachusetts, on which the cotton which was growing in the field in the morning, after it had been picked, ginned, and prepared, was spun, woven, dyed, and made into a dress suit which I wore at a reception the same evening. The difference in the capacity of the operatives who worked these modern machines as compared to the homespun art on the same fabric was one hundred to one, by actual computation.

The first step in the progress from the spinning-wheel of a single spindle to the spinning-mule of twelve hundred spindles was the spinning-jenny of eight or ten spindles. Some of these spinning-jennies are still made use of, I believe, in Africa, to prepare the yarn for a hand-loom which is carried about in the hands of the natives, on which they weave the narrow strips of which their garments are made when they have been stitched together. The African spinners and weavers, with their machines, can be brought to the exhibition.

In South America, in Mexico, among the Indians of the far North-west, and in every part of the world, are people of various tribes and races who clothe themselves in homespun and hand-woven fabrics, as our grandfathers and grandmothers did in New England only a century since.

It is easy to conceive of a department in the exhibition of 1892 in which shall be built the cabin of the African, the cobble-stone dwelling of the Irish cotter, the model of the cottage of the English peasant, the dwelling of the Chinaman, the wigwam of the Indian, the log cabin of the Southern mountaineers, where each type of each race may conduct the art of spinning and weaving in their own way; while in the next compartment may be exhibited the finest examples of the most modern textile machinery: in this one section would be given the history of clothing from the fig-leaf to the type of the present day. Even the preparation of the different fibres may be brought into view. The seed of the cotton is cleaned from the fibre in China at the present time by the snapping of a bowstring, precisely as it was done in Georgia, giving the name of "bowed cotton" to the Georgia staple before Eli Whitney invented the cotton gin.

Again, while the art of weaving begins with the hand-loom in making the fabrics of the coarsest kind, the art also ends with the