## THE COLUMBIAN AND THE CENTENNIAL EXPOSITIONS.

Now that the world's fair at Chicago is over, the last half dollar taken from the public and the splendid buildings which have not been entirely removed either dismantled or burned, it can do no harm to compare the two world's expositions in the United States.

The first was born of a great patriotic uprising of the people—chiefly of Philadelphia—to commemorate the birth of the nation. The second was the fourth centennial of the discovery of this continent, for which enthusiasm was manufactured by means of the powerful aid of the Government, added to hitherto unheard of subsidies of money, and by means of unprecedented advertising at enormous expense undertaken by reason of the ambition of a great young city of which the motto is "I will." It is not too much to say that the Government of the United States did not expend a dollar without return for the elder exposition, while it freely gave millions for the later one.

Charles Sumner in the Senate and Mr. Springer of Illinois in the House of Representatives opposed the giving of Government support to the former, while all the representative members of every state's delegation to Congress, and notably those of Pennsylvania, united to further the objects of the later project. Had it not been for the munificence of private monied men of Philadelphia, and the contribution of small sums by her less fortunate people, the Centennial would needs have been abandoned. Yet the donations of foreign countries and exhibitors to the Government scientific museums in Washington were, in proportion to their magnitude (and perhaps actually) greater in the first exposition than in the last.

A recent communication to the public press by an observant student of the late Exposition in Chicago contains the following language:

After stating that Philadelphians must admit "the far greater richness and elaboration" of the later enterprise, it proceeds to state that the Chicago Fair "cost three times the money of the Centennial, and while it has about the same greater proportion of exhibits, it has by no means a three-fold power on national invention and progress." . . . "It is doubtful indeed if all these added millions add an ounce to the momentum exerted by the Centennial, and for the reason that everything here beyond the essentials of practice, which were demonstrated at the Centennial, are in the simple though immense direction of spectacle, constituting a bewildering appeal to the senses but not being of necessity a lasting force in industrial science."

The writer of these lines may claim both the desire and the opportunity to make a fair comparison between the two expositions in the department of mines and mining, having occupied positions in both expositions which gave him facilities for doing so.

He can only bring to the judgment of the other exhibits such qualifications as any man of ordinary intelligence and the experience of several world's fairs possesses.

The buildings; their arrangement with reference to each other and to the general architectural effect; the laying out of the grounds and all those many elements of architectural taste which are so difficult to catalogue, were never so perfectly attained in any part of the world as they were in Chicago. The buildings themselves, too, were spacious, well fitted for their purpose and imposing in their lines.

In all the above respects, and perhaps in the means of transportation of crowds to and from the grounds, the Chicago Fair was in advance of any enterprise of the kind ever undertaken.

But the appearance of the interiors was not in keeping with the majesty of the structures. Even to the superficial glance the exhibits seemed too often commonplace or "padded." Not but what there were thousands of gems imbedded in this matrix of mediocrity and advertisement, but, as is usually the case, the most striking objects were of subordinate interest, and the really valuable objects needed careful and weary searching, and most frequently one failed to find any adequate description or competent attendant when these treasures were found. The writer first quoted excepts from his strictures the Electricity building, but to me this building was an excellent illustration of the defects alluded to. Everything which would arrest the attention of the ignorant was shown in profusion. There were masses of light of many and continually changing hues, including an illuminated column with a make-believe indicator to mystify the beholder; but the searcher for the more modern application of electricity, the apparatus for signalling electrically by means of a ray of light; the Tessla apparatus; the means of heating by electricity, etc., was unsuccessful or partially so. So far as the general public was concerned, there might as well have been no electric stoves as those placed at the end of one gallery. Outside of a favored few the visitors were able neither to see the interior working of the ovens nor to obtain any information concerning them. If there is one department in which the enormous advance since 1876 should be shown, it is that of electricity, and yet when it is considered that the Bell telephone was first brought out there and that the then latest English apparatus for exact measurement of the electrical current were exhibited in profusion, while totally lacking from the British section of the electrical display at Chicago, it is doubtful if, to say the least, any superiority can be claimed at Chicago in 1893 over Philadelphia in 1876 in this particular, so far as the instruction of the general public is concerned. For the public the most instructive object lesson of the possibilities of electricity as an agent for decoration, light, heat and power was given by the Columbian Commission itself in the brilliant illumination of the dome of the administration building, the basin, and the electric launches and intra-mural railway.

The collection of paintings, while numerous, contained in the aggregate fewer objects of rare value than many much smaller and less pretentious collections of modern days, both international and national.

The agricultural display was fine but was a disappointment to those who expected to see a full representation of the agricultural implements of all the nations of the earth which manufacture such objects. Here, as elsewhere throughout the fair, many objects whose place was in the building were sequestered by the commissioners to adorn State buildings or to meet the eyes of the more general public in the greatest building, *i.e.*, that of Manufactures and Liberal Arts.

There seems to be no difference of opinion as to the shoe and leather exhibit. With the exception of the Russians, and possibly one or two individual displays, the contents of the splendid building consecrated to this subject were disappointing or without significance.

As to the Mines and Mining, in hardly any part of this great profusion of objects was any attempt made to educate as well as to astonish the non-professional visitor.

Great piles of rocks and ores were scattered about, but utterly without system in most cases. The silver statue of Ada Rehan, the purely hypothetical miner's cabin built out of ores and the more or less artistic statue of a distinguished far western fellow citizen of the self-taught sculptor in sandstone, of which the advertisement took the place of a catalogue, were the cynosures.

As for the rest, either a few mines or localities were

more than amply represented, to the exclusion of many others equally important, or in some cases a great mining State was not represented at all. In all but one or two cases the labels, by means of which the public derives all its concrete information, were without other than local and superficial information; very often they were carefully concealed beneath the specimens they should have described, or illegible, or in a foreigh language unknown to the average visitor. In the German exhibit no account was made of the products and methods which for seven hundred years have made of Saxon Freiberg the Mecca of the miner and metallurgist. The superb collection of iron from Sweden, which was one of the chief attractions of the Centennial, was not represented by anything worthy to be mentioned in comparison, and though Germany exhibited a fine column of steel rails and the peerless Krupp products, these latter were housed in the Krupp building by themselves.

So far as this part of the fair was designed as a means of instructing the public, its value was much less than that of the corresponding department of the earlier exposition. While it is not claimed that there may not have been sections in which the display at the Columbian fair was superior to that of 1876 in other respects than in mere size, the writer firmly believes that the earlier fair was better as an educator and that its influence on American industrial progress will prove to have been more far-reaching and salutary than the stupendous spectacle just concluded.

## OWL NOTES.

BY A. W. ANTHONY, SAN DIEGO, CALIFORNIA.

IN a recent number of *Science* Mr. E. J. Hill gives an interesting account of capturing an owl under circumstances that might lead the reader to think that members of the owl family were dazed by sunlight. This may be the case with some owls, but I have, as yet, never fallen in with any so affected. There is no doubt that the bright glare of the sun is disagreeable to some species, but after flushing a short-eared owl and witnessing the ease with which it threads its way through tangled shrubbery, despite the sunlight, all doubts regarding their vision at such times will be set aside.

Very often, however, an owl will, in hopes of remaining unobserved, allow a person to pass remarkably near, often assuming an attitude suggestive of the knots on the limb on which it is perching.

Long-eared owls are often very averse to flying, judging from my observations. I have suddenly come upon one face to face, and sometimes several that were passing the day in a dense willow, and they immediately assumed a rigid, stick-like position, drawing themselves up to twice their natural length, evidently trusting to their resemblance to the surrounding stubs and branches, which was by no means slight. To escape notice—so great is their faith in the protection afforded them by this resemblance, when several are together, as is often the case in winter—one or more may be shot without the rest showing so much as by the movement of a feather that they are disturbed.

On one occasion a friend with whom I was hunting came upon five of these owls all in a row on a limb of a giant cottonwood. Beginning at one end of the line he shot them all, one after another, his last shot starting a sixth, which he had not seen, from a perch in the same tree. When I arrived upon the scene we began looking for the escaped owl, but failed to discover it. As we were leaving, however, my eye chanced to fall upon what, at first, appeared to be an abnormal growth on the trunk of a small sapling near us, but which, upon a second glance, proved to be a little screech-owl. With its back against the trunk of a tree it was drawn up to its fullest height, all its feathers drawn tight against its body, its ear tufts erect. It looked to be twice its normal length, and so closely did it resemble the gray bark and branches that, unprotected as it was by leaves or twigs and in the strong glare of a bright winter's day, its discovery was purely accidental. Our tracks in the snow proved that we had several times passed within ten feet of the bird, and it was quite evident that it was aware of our presence; for while it made not the slightest movement, it watched us constantly through its half-closed lids, trusting, no doubt, to escape detection, but ready to fly if the occasion required.

On another occasion, while collecting birds along the Platte River, I discovered a screech-owl in a very similar position. The morning was very cold, and *Megascops* had sought the sunny side of a small cottonwood, where, with its back against the trunk, it was enjoying the gratefnl warmth of the bright sun. When discovered it had assumed such an attenuated position that, although quite close, I was by no means sure that it was not a broken branch that had attracted my attention. Thinking to secure a specimen but slightly mutilated, I fired at it with dust shot, but was surprised to see not the slightest movement from the statue in gray before me. Could it be that I had been deceived after all and had fired at a knot? Half inclined to believe that such was the case, I went forward to investigate and when within fifteen feet could see that I was closely watched through narrow slits between the lids. Not a movement was made, however, until I was about to lay my hands on it, and then my owl quietly slipped around the tree and was gone. It is probable that my shot, being so fine, had not penetrated the feathers, as it was not injured in any way apparently.

I once caught a screech-owl on her nest, and while I was by no means gentle in bringing her out into the open air, she was, apparently, sound asleep, and no amount of handling would awaken her. I whistled in her ear, opened her wings and laid her down on a limb, all to no purpose. Megascops had evidently been out all night and did not propose to be disturbed by such trifles. While investigating the contents of the nest she was allowed to lie on a branch for some minutes but gave no sign of life, but I no sooner attempted to drop her to the ground than she revived. Before she had dropped a foot the wings opened, and away sailed my owl, as much awake as any bird and probably congratulating herself upon a piece of very clever acting.

—D. Van Nostrand Company, 23 Murray and 27 Warren streets, New York, design issuing the new edition of their complete catalogue of scientific books in sections, of which Parts 1 and 2 are now ready. The others are in preparation and will be issued in the order named, and copies will be sent gratis on application, as soon as issued. Part 1, Steam and Mechanical Engineering; Part 2, Electricity and Magnetism; Part 3, Chemical and Physical Science; Part 4, Civil Engineering; Part 5, Manufactures and Industrial Arts and Processes; Part 6, Geology, Mineralogy, Mining and Metallurgy; Part 7, Hydraulics and Water Supply; Part 8, Astronomy, Meteorology and Navigation; Part 9, Architecture, Building, Carpentry and Decoration; Part 10, Shipbuilding, Naval Architecture, Yacht and Boat Sailing and Building; 11, Drawing, Painting, and Photography; 12, Mathematics.