

The United States is represented by Rev. Dr. Washburne, Rev. C. L. Brace, General Pillsbury and others, of New York, Hon. Mr. Chandler of Pennsylvania, Dr. Wines and Governor Haynes of New Jersey, and Mrs. Julia Ward Howe of Boston. Among the members from the countries of Europe are Count Sollohub, director of a large prison in Russia, Count Scalia, Director of Prisons in Italy, Privy-Councillor Steinmann of Germany, Professor Marquardsen of Erlangen, Baron Von Holtzendorff, the great authority on criminal law in Prussia, and Miss Carpenter, one of the most celebrated philanthropists in England.

Various questions relating to the subject of reform and punishment have been discussed at considerable length. Corporal punishment, and especially the use of the "cat," met with hearty condemnation from the American and continental authorities, but the English, with some exceptions, advocated it as a means of discipline. The Austrian, Bavarian, and Swiss delegates stated that corporal punishment had been totally abolished in their respective countries with the best effect. The argument on the British side took the ground that the lash was a necessary requital for crimes of brutality, such as wife beating and garrotting. The latter species of robbery, which had become alarmingly prevalent in London, had almost disappeared since its perpetrators were punished by severe castigations.

The "treadmill," a most useless and degrading penance, was found to be still in use in British prisons, although it has been abolished for over forty five years in those of America. The continental delegates affirm that it is unknown in their countries. Several English members were eloquent in its denunciation. Colonel Colvill, a prison director, states that he had been obliged to employ the mill on an average of 600 prisoners yearly for eighteen years past, and that he had never known a human being to be benefited by it. On the contrary, its only effect was to harden and depress.

The question of the prevention of crime was also brought up, several members making reports of the labors of societies for that purpose. Reformatories of different types were discussed, the general conclusion being that the "Family Reform School" was superior in every way to the "congregated" system.

It was considered that the best mode of aiding discharged prisoners was by obtaining for them co-operative employment. Thirty-four aid societies are in existence in England, which have yearly provided for about 5,500 discharged convicts. Regarding the rehabilitation of the latter, the system of placing them under the surveillance of the police was condemned.

Mr. Sergeant Cox, in reference to the repression of criminal capitalists, stated that in his opinion the receiver of stolen property should receive double the punishment imposed upon the thief.

The industrial school system of New York was fully explained, and the value of the institution shown by the fact that 2,200 children had been sent to honest employment in the West. Compulsory education was defended and generally considered a valuable auxiliary in the prevention of crime. Baron Von Holtzendorff stated that, by the law of Germany, no child could come before a magistrate for crime until above the age of twelve, but all cases of crime under that age were reported to the schoolmasters, who punished. In that country, also, the children of prisoners who are without friends are taken care of by the State in the same manner as orphans. In the United States, it is customary to consider a child as a "ward of the State," and the prisoner, when his sentence has been served, can only regain control and possession by order of court.

A correspondent of the New York Times says that "the British delegates were amazed to hear from General Pillsbury, of Albany, that he had carried on various prisons not only without expense to the public, but saving a handsome surplus for permanent purposes; and that, in his experience, teaching a man a trade saved him from repetition of crime. Similar experiences, from Massachusetts, of self supporting prisons, were detailed, and produced a deep impression. Count Sollohub, director of a large prison in Moscow, stated that in three months he could give a man a trade; that the prisoner became better under it, and out of the thousands he sent forth annually, less than one per cent repeated their offenses, or came under the law again."

The results of the deliberations of this congress of philanthropists, composed of men and women who are thoroughly familiar with the darkest side of life and with the statistics of crime in both the old and new worlds, cannot but be of the greatest importance. By this interchange of views, the many and grievous faults of our present system of prisons and reformatories, which in a great measure are due to adherence to old and obsolete ideas, may be clearly seen and remedied; while valuable improvements and innovations will be suggested through the contrast of our methods of repression and prevention of crime with those adopted by other nations.

NEWSPAPER BENEVOLENCE.

Among the benevolent enterprises lately put in motion in New York was a subscription to pay the expenses of giving the poor children a holiday excursion. This was set on foot by the New York Times, and the holidays have been very properly designated the "Times excursions." Nearly twenty thousand dollars have been contributed, and perhaps forty thousand ragged youngsters have enjoyed the luxury of a steamboat ride, a romp in the woods, and a good time generally, with refreshments.

One or two of these excursions was exclusively devoted to poor mothers and their young children. Another notable ex-

ursion was that of the newsboys, of which the Times says: "The party was composed entirely of newsboys and boot-blacks, than whom there is not a rougher and more irrepressible class in New York. Large posters announced the picnic and called for a thousand boys. When the manager of our picnics reached the Times office at 6 1/2 o'clock A. M., he found it besieged by boys clamoring for tickets. The crowd was quickly transferred by him to the City Hall Park, where the smaller boys were all picked out and badges pinned on their jackets, if they had any, but on their shirts as a general thing. Shortly before 7 1/2, the superintendents of the various newsboys' lodging houses with their contingents marched into the Park; and till the order for the column to march was given, a scene went on such as perhaps has never before been witnessed in New York or any other city."

Hundreds of little ragged urchins, few of them possessing shoes and stockings and many having nothing to protect their close cropped heads from the sun, were dashing about in a high state of glee if they had secured a badge, or in a state of great anxiety if they had not yet done so. Those who were too big to go would beg and pray for a ticket. The boys danced, stood on their heads, turned somersaults from pure exuberance of spirits, and many a bit of roguish satire was sent at those who could not be taken. The steps of the City Hall were crowded with interested spectators of the scene; in fact the whole of the south side of the Park was crowded. At last the boys were formed in line, in three separate divisions, wearing red, white, and blue badges respectively. At 8 o'clock the band from Governor's Island entered the Park, and taking up their position, the order to march to the steamboat was given. The scene at this moment was really exciting. As division after division, each headed by its own banner, left the Park, the crowd cheered and waved their handkerchiefs, ladies appeared at the windows of the Astor House, every store on Broadway and Park Row was emptied in a moment, and the sidewalks were thronged. As the little fellows passed the Times office, they sent up cheer after cheer. Every moment the number of spectators increased, so that in Chatham street and up East Broadway the little army of ragamuffins was escorted by a crowd as large as that which attends the Seventh Regiment on dress parade days. The boys were carried to a fine grove on Long Island Sound, where they had a day of most hearty enjoyment.

WAVE POWER PROPELLERS.

Some fifteen or twenty years ago, we published in the SCIENTIFIC AMERICAN the drawings of a self propelling vessel, in which the sides of the ship were provided with hinged propelling blades, so arranged that by the roll of the boat the blades would alternately open and close, giving the vessel a forward push at every lurch.

This was a novel idea at the time, but it involved the attachment of considerable mechanism to the outside of the vessel, which, under the rough usage of the billows, would be likely to breakage or disorder. It is obvious that the use of ordinary masts and sails is a much better plan of propulsion. The flapping blade system, we observe, has lately been revived, and notices thereof are circulating through the press. It makes a good newspaper item, but has no other value.

WATER VAPOR NOT VESICULAR.

A recent experiment by T. Plateau disproves the commonly received theory respecting the vesicular nature of aqueous vapor. He provided a column of water, contained in a glass tube and held therein by atmospheric pressure, the bottom of the water column being exposed; small air bubbles, on being brought from the point of a small tube into contact with the exposed water surface, immediately rose through the water column. If water vapor is vesicular, it should do the same. But experiment shows that it will not. On directing a current of ascending vapor from boiling water against the bottom of the water column, no appearance of rising vesicles through the water could be detected.

INCLINED RAILWAY IN SAN FRANCISCO.

The steep elevation of the lands immediately adjoining the city of San Francisco and the desirability of providing convenient access thereto have induced some enterprising individuals to attempt the construction of an inclined railway. The incline will be 2,800 feet in length, traversed by cars drawn by steel wire ropes and stationary engines. The cars are to be provided with clutches whereby the rope may be grasped or released at the will of the conductor. At the top of the incline, the cars are delivered over to the horse railway.

Wood Carpeting.

A correspondent recently suggested that a substitute for matting for covering floors, cheap, durable, and cleanly, was desirable. The wood carpeting, made and laid by the National Wood Manufacturing Company, 942 Broadway, New York, is the best, cheapest, and handsomest material for halls, dining rooms, and kitchens that we have ever used. The expense is not so much as that of carpeting, and but little more than that of matting; and when properly laid, it will last a number of years. We have substituted it for matting in a summer residence, and find that it possesses all the advantages of a solid hard wood floor.

THE Fourth Annual Fair of the Carroll County, Md., Agricultural Society is to be opened at Westminster, Md., on September 30, and will continue till October 5. Among the premiums to be awarded are several subscriptions to the SCIENTIFIC AMERICAN, rewards which are always acceptable to the recipients and welcome to their homes and families.

[Special Correspondence of the Scientific American.]

LETTER FROM PROFESSOR R. H. THURSTON.

CINCINNATI, Ohio., July, 1872.

Cincinnati and its approaches. The great suspension bridge of Roebling. The iron railway bridge over the Ohio. The Danks puddling furnaces; interesting particulars concerning their operation. The Cincinnati water and gas works.

The route to Cincinnati via the "Panhandle" line of railroad, although not presenting as many beautiful landscapes and such a panorama of picturesque scenery as the Pennsylvania railroad in crossing the Alleghanies, exhibits to the traveler not a few exceptionally fine views in the neighborhood of Pittsburgh. That of the confluence of the Alleghany and the Monongahela rivers to form the Ohio, and the long stretch of the latter river that can be seen just after leaving Pittsburgh, are especially attractive, possessing such beauty, when seen by the light of a sun just setting among gorgeously colored clouds in the west and throwing no less beautiful though quieter colors over the eastern clouds and along the further river bank, that those who have been fortunate enough to witness it will long hold it in remembrance.

En route, we pass through the city of Columbus, Ohio, a pleasant town with wide streets, having some fine public and many fine private buildings. The capitol would be a noble structure except for what seemed to us its very ugly dome. The city hall is a very neat building. There is not very much manufacturing done here, and we only remained long enough to see something of the city and to take the next train for Cincinnati.

This latter city can hardly claim to be a manufacturing place, although its manufactures, in the aggregate, employ a considerable amount of capital. The business of manufacturing furniture is becoming its leading branch of industry. The comparative low price of walnut and other kinds of wood used in the business enables it to reach profitably for its market as far east as Pittsburgh and all over the West and Southwest. Some of the furniture made here is extremely neat in design, well made and of beautiful finish, fully equal to any thing made east of the Alleghanies. Prices are not very far from New York figures.

THE GREAT SUSPENSION BRIDGE AT CINCINNATI.

In Cincinnati, we were particularly interested in the great bridges over the Ohio river and in the now well known Danks' revolving puddling furnace.

Entering the city by rail from Columbus, one of the first and most striking objects that catches the eye is the great suspension bridge stretching across the river to Covington, Kentucky. This immense structure has a greater span than any bridge yet built in the world.

It was built by the late John A. Roebling, the builder of the two suspension bridges at Pittsburgh, and of the almost equally wonderful structure at Niagara Falls. Considering the time at which it was designed and the difficulties with which he contended, its successful completion justly entitles its designer to be considered one of the boldest and most talented engineers that the world has yet known. At first view, the bridge impresses the observer by its magnitude, as well as by the neatness of its general design, and by the graceful sweep of the great wire cables which support the roadway; but a second visit is even more impressive than the first, and, after studying it from different standpoints, and after walking across it several times, one feels that, after all, the mind was quite incapable, at first sight, of appreciating this great engineering wonder of our age, or of understanding what difficulties are met in the general plans, to say nothing of those of detail, by the engineer who attempts to sustain a bridge like this between piers separated by a distance of nearly a quarter of a mile. Those who are now watching the progress of the East River bridge at New York—which was designed by the same great engineer, in the light of all the experience gained by a life time devoted to such work, and the construction of which is proceeding under the directions of a son who profits by his own special scientific and practical training as well as by his father's experience and teaching—can hardly appreciate the talent, the hard work and the mental anxiety and activity that must have been demanded of the engineer during the progress of the Cincinnati bridge, which has but about a hundred feet less span.

THE IRON RAILWAY BRIDGE.

Further up the stream is the great iron railroad bridge built by the Keystone Bridge Company. At the channel span, the bridge is 400 feet from pier to pier, and, were it not so near the great suspension bridge, it would at once awaken in the spectator the greatest interest and admiration. It is a beautifully proportioned and well made bridge. The members carrying a compressive stress are formed of the peculiarly strong and readily constructed built columns used by some of our leading constructors; and the tension members are rods and links with ends upset, to secure full strength at what are usually their weakest parts, and to distribute the extension of the metal throughout the whole length of the piece. The importance of this last advantage is too seldom understood and attended to by constructing engineers. It is a point of special consequence, in mechanical engineering and wherever structures are exposed to sudden strains and heavy shocks.

THE DANKS PUDDLING FURNACES.

A part of a day was spent at the mill of the Cincinnati Railway Iron Works Company, examining the Danks puddling furnaces and watching their operation. These furnaces have attracted the attention of iron manufacturers both here and abroad, for, although by no means the first "rotary puddlers," they are the first whose operations has been suffi-