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A CARD AND A WALKING CANE.—One of our Know Nothing exchanges informs us that "near the close of the proceedings of the American Convention at Philadelphia, as Mr. Bartlett was standing near the door of the hall, conversing with several gentlemen, a very quiet personage approached him, holding in his hand a finely mounted cane, and said, "Is this Mr. Bartlett, of Kentucky?" Mr. B. replied "Yes, I am the person." "Then, sir, I have the pleasure of presenting you this cane; it is made of wood from Constitution Hall, and I desire you to keep it in remembrance of one who listened with great pleasure to your speech the other evening, and here is my card." The card was engraved J. M. Riley, Philadelphia." Considerate Mr. Riley. Mr. Bartlett is President of the Grand National American Council, and, after the crippling exercises of the Convention, we presume that he found that cane to be useful as well as ornamental. Thoughtful Mr. Riley.

SCIENCE, ART AND DISCOVERY.

THE NEW PLASTIC, OR CEMENT OF ZINC.—The *Chemist* gives the following account, submitted to the French Academy, of the new chemical process discovered by M. Sorel, and which has been used advantageously for painting buildings instead of oil paint:—This cement is a basic oxy-chloride of zinc; it is formed by moistening oxide of zinc with the liquid chloride of zinc, iron, manganese, nickel, or cobalt. These chlorides may be replaced by chlorhydric acid. The hardness of the cement is proportionate to the concentration of the chloride and the density of the oxide. Washed residues, arising from the manufacture of white zinc are employed, or ordinary white zinc may be calcined to redness. Chloride of zinc, marking from 50 to 60 degrees of Baume's areometer, is used and in order that the cement may set less quickly, about three per cent. of borax or sal ammoniac is dissolved in the oxide, or else the oxide is calcined after being moistened with water containing a little borax. The mastic or cement obtained by the combination of the above substances may be run into moulds like plaster; it is as hard as marble; cold, moisture, and even boiling water, are without action upon it. It resists 576 degrees Fahrenheit, and even the most powerful acids attack it but very slowly. The new plastic matter is not expensive, and its coat may be still considerably diminished by mixing with the oxide of zinc, metallic, silicious, or calcareous matters, such as iron filings or borings, iron pyrites, blonde, emery, granite, marble, or any hard calcareous matters. Soft matters, as chalk, etc., will not do. The highest and most varied color may be given to the cement, which makes it suitable for tables and mosaic pavement of great hardness and beauty. It may also be used for making moulded objects of art, such as statues, medallions, bas-reliefs, etc. It is also well suited for ceilings and several good dentists of Paris have employed it successfully for several years for filling decayed teeth, and even for cementing the parts of a set of teeth.

But the most important application of this new matter will probably be its employment for painting buildings, instead of oil paint. To form this paint, the pure or colored oxide of zinc is moistened with water and a little size, and this paint is applied like ordinary size paint, and when the desired number of coats has been given, and the last coat is dry, a little chloride of zinc of 25 to 30 deg. of Baume is passed over with a brush. It may afterwards be scoured with pumice, and varnished like oil painting. This paint is very solid and inodorous; it dries instantly, and it is eminently antiseptic, owing to the chloride of zinc.

Manifest advantage would result from the substitution of oil in paint by chlorhydric acid, or by chlorides obtained with that acid. Instead of employing a considerable territory in the cultivation of oleaginous plants, these may be replaced by cereals and other plants. Chlorhydric acid is not derived from the soil; it is a product of the decomposition of common salt, which is obtained from the sea or from the bowels of the earth—sources inexhaustible. The other product of common salt is soda. From the employment of large quantities of chlorhydric acid, we should have, at low price, considerable quantities of sulphate and carbonate of soda, which must lower the price of glass and soap.

MAKING CANDLES OF LARD AS WELL AS OF OTHER SUBSTANCES.

exclusive boxes at the opera, in accordance with the whole exclusiveness of their intercourse. Here, however, the privileged orders being wanting, and there not being, as has already been proved, the stamina to support a private-box system, it was believed that if a house were built sufficiently large to admit at cheap rates a great crowd—far greater than any European house is capable of holding—the opera could succeed, especially if rendered through the English language liberally every season. A house capable of holding 4,500 or 5,000 people could sustain a company at an average of fifty cents; and certainly the history of the lyrical drama shows that when the opera is given in English with good-singers, a paying support is not wanting to it in New-York. Well, the Academy after the delays due its elaborations, is so far finished as to be open to-night, and it has 4,600 seats, the largest number of any theatre or opera house in the world. This, however, is but one phase of the matter. Are these 4,600 seats, each and all, such that persons can witness the performance and be properly accommodated, and is the opera-house the greatest in the world? These questions can be easily answered.

The Academy of Music is 204 feet in length and 114 feet in width at the auditorium part, and 121 feet at the stage; hence covering an area of 24,020 square feet, of which 9,760 square feet are the area of the stage and its dependencies, and 14,260 square feet are appropriated to the auditorium, saloons, lobbies and so forth.

Of the 4,600 seats there would be of course in any theater preferable ones, growing out of relative proximity to the stage, but at this time of day, with the lights of architecture to guide us, and the requisitions of a free community to inspire us, there should be no seat in a theater of such generous claims and aspects as the Academy, which would deny the sight of the stage and the ordinary comforts of a chair. But the public will be surprised to learn that full one-half of the seats of our Academy cut off the auditor, who is also a spectator, from a view of the stage; and though he may hear what is going on, he cannot see the performers, or any of the stage-effects. We make this statement after a careful examination of the house from top to bottom. How can this be, it may be asked, in a house most deliberately built and set up as a model in its kind for admiration and imitation? In answering this we would state that there is a right size and shape for everything, and the Academy, the means of its site considered, has neither the one nor the other of these requisitions, and therefore, we regret to say, artistically it is a failure. It sets forth with immense claims, unequaled in its way in this country or in Europe, and accordingly challenges consideration; and we may add that the days of artistic ignorance and critical pusillanimity may be put an end to in America, so soon as everything artistic is measured according to its pretensions. To come to the point: The cause of this failure arises solely from an attempt to do more than the premises warranted. The architects of the country were summoned to produce plans for a

theater to hold the vast number of nearly 5,000 persons, all comfortably seated—a thing simply impossible upon a lot of such a size. The result is a house constructed upon the old plan as to shape—namely the horse-shoe, which has nothing to recommend it and everything to condemn it—which forbids by the science of radii a great portion of the spectators laterally placed from seeing the stage, and at the same time by its extended periphery drives those occupying the front seats in the auditorium—which should be among the best in the house—to an unreasonable and unnecessary distance from the actors. To this defect may be added another, that while half of the spectators cannot see the stage, the other half have diminished comforts owing to the crowded state of the whole. Besides, the squeezing, corset-like, process which marks the interior of the Academy, has resulted in the minor defect of the contraction of the saloons and the absence of a central aisle to the parquetry. All the chairs in the parquetry, 550 in number, of course command a good view; they have, in common with those in the boxes, certain comforts, among which we may name that they are constructed so that the seat closes up by a spring when it is unoccupied, and leaves a space for the auditor to stand up in and let any one pass with ease. The uniform space allotted to each seat is one foot seven inches by two feet eight; had this space been two feet by three it would have admitted of comfortable arms to each chair, and been in every other respect the equals of the best arm-chair at the fireside. An object of the theater is to draw people from the comforts of home; and up to this time, as far as the seats of our theaters are concerned, they have been constructed as if with the especial object of repelling spectators. The first tier of boxes of the Academy contains 700 chairs; and even at this elevation there are some spectators who will have to twist themselves to see the stage, owing to the vicious form of the house before alluded to. The second tier contains 700 chairs, some disposed in private open boxes in the rear; in this tier about one-fourth of the seats are cut off from a per-

NEW-YORK ACADEMY OF MUSIC.

The new Opera House in Fourteenth-st. and Irving-place, will positively be inaugurated to-night, and the most eminent musico-dramatic artists on the stage will appropriately appear on the occasion. The unquestionably superior enterprise of Mr. Hackett in procuring an Opera Company on a grander scale than we have yet had among us, should be duly acknowledged on the occasion of throwing open the doors of an American Academy of Music for the first time to the public, and we trust that in the Stage-ovation of the evening, he, as an American, may enjoy the first honor. The doubts as to the success of his project seem to have passed away, especially since he has secured the Opera House in all the fascinations of its novelties and specialities, backed by a powerful body of wealthy stockholders, who feel a parental care for the dramatic child of their creation, built, as it is, for a symposium of art, taste and fashion, and where too the feminine loveliness of a community of some seven hundred thousand may keep up a raking fire under cover of the muses. We may fairly anticipate a handsome result to the speculation in question, and that our Academy will draw well during the entire season. There are a few things, we would add, which may be broadly stated as entitling Mr. Hackett's company to success. Besides the fact, everywhere recognized, that Madame Grisi and Signor Mario are without rivals on the Italian stage, there is Signor Susini, unquestionably the next greatest living deep manly voice after Lablache, who is now near the end of his career. To this unequalled principal attraction must be added some other good vocalists and a chorus perhaps equal to any of its size in the world, and an orchestra superior to that of some of the principal opera-houses in Europe—among those which it ranks above we may name that of *La Scala* itself—to which may be added that its leader, Signor Ardit, is unquestionably master of his business. The objections to the locality of Castle-Garden, as regards distance from the City's centers and to its little stage and shabby scenery, will be removed in the new Academy; and, as the disadvantages of the down-town establishment could not ruin the musical season, it may be safely asserted that the success of Mr. Hackett's troupe is above the ordinary drawbacks of a bad locality, and that in any theater capable of holding from two to three thousand people it would do well. Having now glanced at the position and prospects of the company in question, it remains for us to treat of the Academy of Music itself in point of architecture, and of the influences which its material resources are to exercise on the science and art to which it is pledged, after the irresistible allurements of the opening season shall have ceased.

The Academy of Music is an institution secured by a State charter, carrying on its face a generous, national and artistic purpose—namely, the cultivation of Music—the instruction of American artists in the beautiful mysteries of the lyrical calling, of course both as composers and performers, and consequently securing to them of right, when qualified, an American platform for the display of their gifts before an American public, interested in the intellectual progress of their country. This peculiar radical quality of the Academy is the main reason which induced the Legislature finally to grant the charter, which they refused on the original application for it, certain members looking upon it as nothing but a theater, without a special educational purpose. Until we learn the contrary, we shall believe that the stockholders, their word being pledged to that effect, will make the dilletanteism of their choice opera seats the least consideration, and endeavor by all means in their power to render this American Academy of Music, sooner or later, a living truth, a great correspondent with its name, and not a hit or miss theatre for the newest come, vulgar adventurer from Europe, rich in "the science of lumbag;" but that they will make it one of the agents for putting us intellectually abreast with the art-civilization of Europe, and of widening the area of our judgement on liberal pursuits, and elevating the artist only as he can be elevated, socially and historically, under an industrial democracy like our own.

These large and pregnant views of the intent of the Academy, render it in our estimation worthy of being an object of permanent public interest. Without them it would be a misnomer and a fraud. It is an "Academy of Music" so chartered. No European opera-house takes that name, without having a school connected with it. We now propose to analyze, scalpel in hand, the whole body of the edifice, treating it on the grounds of taste, and also with reference of its adaption in means to the beneficent ends set forth in its charter.

It has been habitually stated, in the journals and otherwise, that this Academy is the largest theatrical building in the world; and that it contains nearly five thousand seats; and the reason given for the introduction of so many seats, is simply the difference of our social and political system compared with the systems of Europe, which establish grades and castes there, and enable a few privileged persons to have