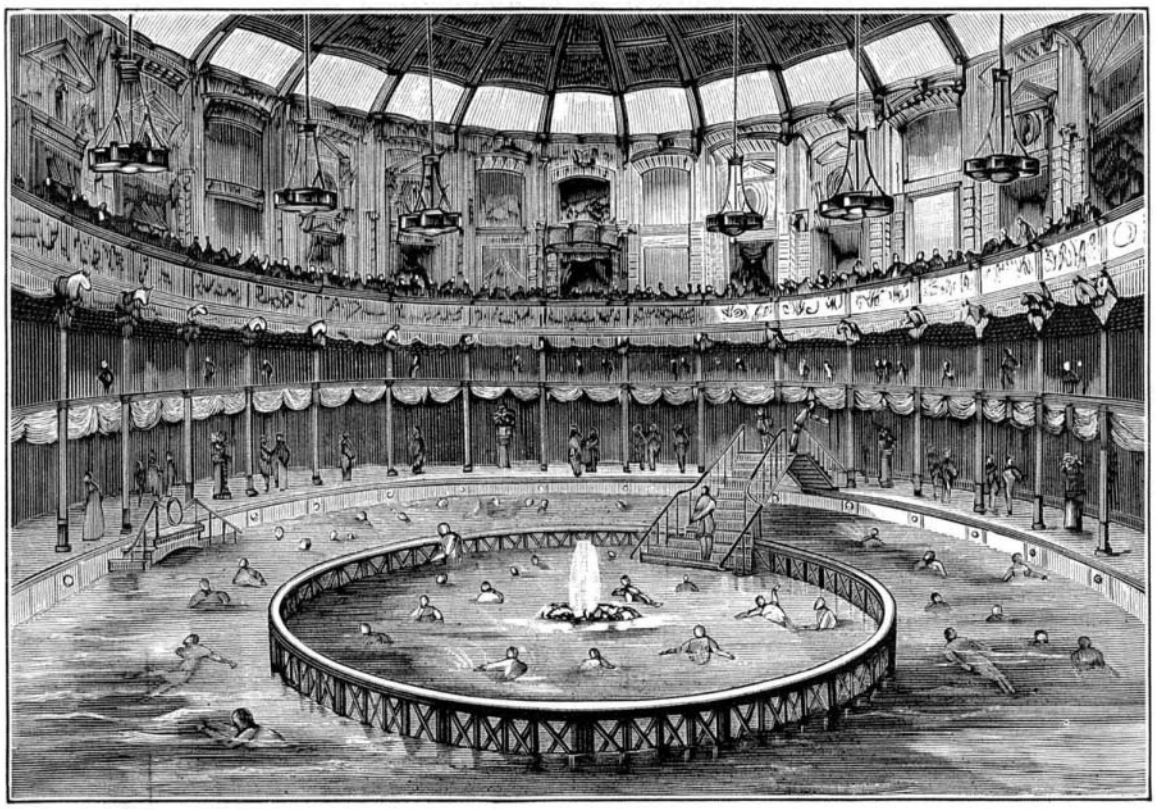
THE AQUATIC ARENA AT PARIS.

We have already given the details of the new arrangement that Mr. Oller proposed to introduce into his nautical arena in order to convert it, in summer, into a swimming bath of constant temperature. These changes have now been made, and we are thus enabled to complete the description hitherto published.

The swimming bath is formed by the central 82 foot tank, and consists of two parts of unequal depth. The flooring that supported the ring for equestrian performances has been lowered but 5 feet, and rests, as we have before said, upon hinged supports, which are themselves affixed to the posts of the metallic guard that circumscribes the ring. The intervals between the posts are occupied by an iron latticework for preventing accidents. This surface, which constitutes the shallow bath reserved for childen and persons who do not know how to swim, begins at the entrance stairway with a depth of 3 feet, and gradually slopes to the center, where the depth from there on is 5 feet. The peripheric portion forms the large bath and preserves the depth of the tank, say about 10 feet, with a width of 18¾ feet. This arrangement utilizes the surface in a more agreeable manner than a square or rectangular form would for persons who know how to swim, since it affords a longer stretch.

The bath room arrangements are very complete. On the ground floor, adjacent to the swimming baths, are located the hydrotherapic, sudatory, and massage rooms, along with the one containing the steam baths and showering apparatus of all sorts. A peculiar arrangement, as simple as it is ingenious, has been adopted by Mr. Solignac for furnishing water to the shower baths and for all other purposes. The feed system is based upon the principle of the Giffard injector, with this difference, however, that the object of condensing the steam is to produce a heating solely, and not a suction of the cold water, which enters under pressure through a conduit. The steam pipe, which terminates in a conical nozzle, enters a cylinder into which runs the extremity of the cold water conduit.

Upon properly regulating the cocks of these two pipes, one can regulate the temperature at will, so as to give either a cold shower bath or a steam bath. This system presents the advantage that but one apparatus is employed instead of two, and that there is an entire suppression of hot water piping with an elevated reservoir, and of all the annoyances and repairs that result therefrom.



GENERAL VIEW OF THE SWIMMING BATHS AT THE AQUATIC ARENA.

One of the most useful of the rooms, and one that it costs no additional fee to enter, is the lavatory, wherein bathers have every facility for cleansing themselves that is found in the hot baths. This addition, moreover, helps to preserve the water of the swimming bath in its original clean state.

The upper gallery of the old establishment is now used as a resting place, and is provided with a buffet. The stable vestibule has been converted into a gymnasium; and the stables themselves are repositories for rubbish. The water is kept at a mean temperature of 24° C. by a constant flow of water heated to 56°. We shall do nothing more than mention the mode of feeding, which permits of a complete renewal of the 42,000 cubic feet of water of the baths in two days, and at the rate of 1,750 cubic feet per hour; the freeing of the water from oily matter; the two modes of emptying the baths—one of them by means of a siphon, in which the upper, hot stratum of water forces the lower forward under the action of density, and the other by means of the feed pumps of the steam boilers; and, finally, the thorough ventilation obtained by currents of hot air, so as to prevent condensation upon the walls and ceiling. Let us state, moreover, that this ventilation has been notably increased, and carried to 210,000 cubic feet per hour, by reason of the wider evaporating surface exposed since the removal of the various tiers of seats.

The current of hot air, likewise, keeps the entire hall at a uniform temperature, so that the bather, on coming out of the water, does not experience that sensation of cold (which is often very disagreeable and even dangerous) that he does in open air bathing.—*La Nature.*

CINCHONA trees growing in hothouses in Europe develop no quinine in their bark.

Avoid Lawsuits.

An eminent lawyer informs the *Manufacturers' Gazette* that the mercantile and manufacturing communities are less given to appeals to the law now than in former years. It is a fact, he adds, that the number of such lawsuits does not increase in proportion to the increase of population. This speaks well for the good judgment of our business men. Litigation is an expensive method of settling business differences.

Seldom is either party to a great lawsuit satisfied with the result. Even to the one who obtains a favorable verdict, the long list of expenses, vexatious delays, and uncertainties, more than offsets the fruits of victory. Few men would appeal to the law in the settlement of business disputes could they realize the possible delays of the law, the exorbitant charges of attorneys and other expenses incidental to the successful prosecution of a suit.

Again, if the merchant or manufacturer would, before commencing a suit, pay a visit to the courthouse and casually examine the men of whom the juries are composed, he would hesitate to submit his grievances to such a tribunal for adjustment. In every large city there are hundreds of political strikers, hangers-on, men without legitimate employment, whose names are placed on jury lists, who have few or no qualifications for the place. The jury system, as conducted in our cities, is a failure in the consideration and settlement of complicated business matters or in the solution of difficult mechanical problems, such as frequently arise in the trial of certain cases.

With the average jury, the true merits of a case do not always control the verdict. Prejudice, a popular lawyer, an accident, a confused witness, the appearance or occupation of the parties to the suit, politics, religion, are all incidental factors in shaping a verdict in the minds of ignorant, untrained, weak-minded jurymen. Justice and equity do not always prevail in the appeal to twelve men.

Business lawsuits are too frequently born of heated passion, misunderstanding, ignorance of all the facts of the law governing the case, false pride in maintaining an opinion or a threat, an overbearing disposition, or perhaps a disinclination to look calmly at both sides of a question. There are cases in the lives of many men when a lawsuit cannot be avoided, but they are few.

Fifty per cent of all disputes could better be settled by reference to experts or those versed in matters similar to those in dispute. Many a suit would be dropped were the plaintiff able to count the cost at the commencement. Many a suit would be avoided were the parties in interest willing to weigh calmly both sides of the question, and to do unto their fellow men as they would be done by.

Think of a business man, whose time is almost invaluable to him in his regular round of duties, hanging around a courthouse day after day, awaiting the coming up of his case, witnesses under pay, costs accumulating, patience being exhausted, and all perhaps to settle the point whether his neighbor owes him $50 more or less.

An appeal to the courts of law is akin to buying a lottery ticket, though the result is not known so speedily. The victim's sufferings are longer drawn out, his money is taken in smaller but more frequent installments. A suit at law destroys a man's equilibrium, makes him nervous, irritable, ugly, prevents him from giving the needed thought and attention to his legitimate business, and generally ends in loss and disappointment. The lawsuit is seldom worth its cost, even to the one who obtains the verdict. Avoid it whenever possible to do so without prejudice to your property or character.

Sugar as an Anti-Incrustator in Steam Boilers.

The last number of the *Rivista di Artigliera e Genio* contains a brief but important article by Colonel Agostino Polto, of the Italian engineers, giving the result of certain experiments carried out by him with common sugar as a remedy for preventing incrustation in boilers. The boiler made use of by Colonel Polto was a 20 horse Field tubular boiler containing 126 tubes. This boiler was ordinarily scraped and cleaned out every forty-five days (*i. e.*, after 380 working hours), when the average weight of scale removed, after making use of the best methods known for preventing incrustation, amounted to 12 kilogrammes. Before beginning the experiments with sugar, one-third of the tubes were purposely left uncleaned. The boiler was then filled with water and 2 kilogrammes of sugar added to it; a further supply of 1 or 2 kilogrammes, alternately, being added every seven days.

After working the boiler for the usual forty-five days, it was found that it could be cleaned easily without the necessity for scraping it, and that the tubes which had been left uncleaned were considerably more free from scale than before, while the other tubes remained clean and bright. About 8 kilogrammes of old incrustations were found lying at the bottom of the boiler, having become detached by the beneficial action of the saccharine solution. A similar result was obtained after repeating the experiment for a further period of forty-five days; the tubes originally left uncleaned being in still better condition, and only 3 kilogrammes of old incrustation being found at the bottom of the boiler. The success of these experiments proved conclusively that the boiler could be used with advantage continuously for a longer period than forty-five days, and that it could then be easily cleaned by simply injecting water.

The advantages claimed by Colonel Polto for this method, if borne out by prolonged experience under varied conditions, are self-evident, and we shall be glad to hear and record the results of further trials. The sugar employed was a kind of raw sugar known in Italy by the name of muscovade, which possesses a large amount of saccharine matter. With water of medium hardness, the best results were obtained by using 10 grammes of sugar per horse power when working the boiler ten or twelve hours a day; but the exact proportion would, of course, vary under different conditions. This saccharine solution was found to have no corrosive effect on the boiler, but Colonel Polto admits that too large a proportion of saccharine, or the use of impure water, might possibly lead to corrosive action, which, however, would probably be easily obviated by adding a small quantity of soda in the proportion of one-tenth to sugar.

The Brennan Torpedo.

Some further experiments have been made at Sheerness with the Brennan torpedo, the results being described as exceedingly satisfactory. The experiments were carried on in conjunction with the electric search light at the Garrison Point Fort, and the weapon was steered about the harbor in different directions at the will of the operator in the torpedo room at the fort, and was finally directed at a target moored about a mile up the Medway, the mark being rendered discernible by means of the electric light. The torpedo is kept under control and steered by means of a wire attached to the machinery in the fort. When the experiments at the fort have concluded, it is proposed to test the adaptability of the torpedo for use as part of armament of ships of war.

Saccharine.

The authors put on record the facts that this compound traverses the organism without any alteration, and that it has an antiseptic property. Its sweetness is not similar to cane sugar, as it has been asserted. Its flavor is slightly saline and raw.—*E. Ferrand and L. Rouques, Journ. de Pharm.*