

Correspondence.

Vestibuled Day Coaches.

To the Editor of the SCIENTIFIC AMERICAN:

I have read with much interest your article in a recent issue on "The Menace of the Pullman Car," and also the letter of Mr. Clark on the Southern Railroad accident. There is something to be said in favor of the railroads in this matter, for there is a disposition on their part to use a type of day coach on through trains which does not easily admit of being crushed or telescoped. There are three solid Pullman trains running in each direction between Boston and New York, and several others that include day coaches of heavy vestibuled type. The New York Central western trains are practically all vestibuled coaches, and the Lake Shore Limited and Twentieth Century are, of course, all Pullman. The same thing applies on the Pennsylvania, and their standard day coach gives every appearance of solidity and of standing up under a heavy strain. All the evening trains from Chicago to St. Paul are of the solid vestibule variety, likewise the different roads to California, with their Overland and Sunset Limited. I am aware of the fact that a few trains are composed of a mixture of combination smokers, ordinary day coaches of the older type, and a Pullman or two at the rear end. This is a dangerous combination; but such trains as a rule run on much slower schedule, and do not average much more than thirty or thirty-five miles an hour. In the districts around Boston the railroads are gradually withdrawing the light day coaches and placing them in the suburban service, they being supplanted on the through expresses by the heavy, wide-vestibuled type. Of course such a change cannot be made in a month or a year, but it does seem as if the railroads are showing a progressive spirit.

W. M. SNELL.

Melrose, Mass., October 14, 1904.

The Romance of Light.

To the Editor of the SCIENTIFIC AMERICAN:

I have just been reading in your issue of August 27 a most interesting article entitled "The Romance of Light," by Fred Hovey Allen. He shows that man commenced with the pine torch, and says: "The expression that mankind was plunged in darkness during the early ages is true in every sense." It seems to me that exception must be taken to this sweeping remark in the case of the ancient Egyptians. So far as I am aware, no lamps have ever been found there which could be proved to be older than the period of the Roman conquest; and yet if one grants that they had the common smoky little clay hand lamps for use above ground, how did they manage underground?

In the Valley of the Tombs at Luxor there are numerous tunneled tombs, that run for hundreds of feet into the side of the mountain. They are anywhere from eight to say fifteen feet in average diameter, square in cross section, and vary to the right and left and up or down during their length, so that to reflect light from the mouth by means of mirrors would have been quite impossible, especially with workmen continually passing in and out.

Now the walls of these tombs are literally covered with the finest hieroglyphics, either incised or stenciled in red and black, and in a new tomb these are as fresh and clean as the pages of your paper. In old tombs they are more or less smoked by the torches of the guides.

I have thought of phosphorus lamps; but they would hardly give general illumination enough to follow out a large design. Possibly bottled fireflies, as in southern India, or beetles, as in South America, might be utilized; but both methods seem too primitive.

Could they have had electricity? I saw it stated some time ago that some English electrician was going to deliver a lecture at St. Louis on "Electricity Among the Ancient Egyptians;" but I have seen no reference to it since.

I am very much interested in all that pertains to the mechanical or rather the physical triumphs of the ancient Egyptians, and have done some little work in that direction. If Mr. Allen or any of your other readers have any information or ideas on this particular application of the light problem, I would much like to hear them.

L. W. BARBER,

Commander U. S. N., retired.

14 Rue Cimara, Paris.

Proposed Motor Boat Race Across the Mediterranean.

The proposition which has been made by Le Matin, one of the leading Paris journals, to hold an auto-boat race from Algiers to Toulon across the Mediterranean, has awakened considerable enthusiasm among sportsmen. The idea seems to be a very practical one, as it affords an intermediate distance between Calais-Dover and Paris-Trouville and the passage from Havre to New York, for which M. Charley offered his \$10,000 prize. The intermediate course will afford a more gradual transition to the Atlantic

trip and will give many valuable points which can be turned to account in making the longer sea voyage. The course from Algiers to Toulon is not of an unreasonable length, in view of the present capabilities of the racers, but is long enough to give the pilots an idea of how to navigate during the night. Besides, the region which will be traversed has the advantage of offering different places of refuge in case of a mishap, namely, the Balearic Islands on the west, Corsica and Sardinia on the east. The boats could reach any of these different points by using a sail. Most of the different sportsmen who have already entered for the Atlantic race think the idea is an excellent one, and some of them have already engaged for the event. Among these are M. Charley with two Mercedes racers and one cruiser, Fournier with a Hotchkiss racer, and Dalifol with an Abeille 80-horse-power motor. M. Charley proposes to found a Mediterranean Cup valued at \$2,000. M. Gaston Menier, the well-known sportsman, also favors the idea and will help it along. In a recent interview M. Daynard, who is one of the leading naval authorities and designed many of the transatlantic liners, among others the "Lorraine" and the "Savoie," gave his opinion upon the subject of the long-distance races. He is convinced of the utility of these events. As to the length of the racer, experience alone will tell whether a short boat 40 feet in length, or a longer one of 75 or 80 feet should be used. Before making the run from Algiers to Toulon it might be preferable to begin with a shorter distance, Nice-Bastia, for instance, which could be made in 10 hours. But this is not a *sine qua non*, and he thinks the 24 hours' trip from Algiers to France will be an excellent preparation for the Atlantic trip. As to speed, he favors a moderate speed of 20 miles an hour. It would no doubt be better to have the racers accompanied during the passage. However, the boats should be obliged to make the trip without taking on supplies of gasoline *en route*.

As to the Atlantic trip, many additional entries have been received up to the present. Baron Henri de Rothschild announces that he expects to make the trip with a boat which will be built according to some new ideas he has. Among the other entries are Dalifol (Abeille 80-horse-power motor); Tourand & Co. (Vantour 80-horse-power); Leon Bollée I. (Bollée 120-horse-power); Leon Bollée II. (80-horse-power); Henri de Rothschild, and "Satan," belonging to M. de la Heulière. It may be added that the rules for the event will be drawn up so as to exclude any rash attempts which are not well planned and whose failure would bring discredit upon the enterprise.

The Current Supplement.

A splendidly-illustrated description of the new fast protected Turkish cruiser "Abdul Hamid" opens the current SUPPLEMENT, No. 1504. The Hon. Charles A. Parsons, of steam-turbine fame, contributes a paper on Invention that will doubtless be read with interest by inventors as well as by engineers. Mr. Joseph Horner's practical and thorough discussion of "Modern Methods of Steel Casting" is concluded. The amount of valuable information contained in this one instalment of his series will be appreciated at its true worth by practical foundrymen. Prof. Simon Newcomb opened the St. Louis International Congress of Arts and Sciences with a scholarly address on "The Evolution of the Scientific Investigator." The address is published in full. In accordance with our promise to publish in each issue of the SUPPLEMENT an article on the World's Fair at St. Louis, there appear two admirably illustrated descriptions of the Italian and Belgian exhibits, from the pen of our St. Louis correspondent. Mr. Charles Ray contributes a thoughtful article on "The Education of Blind Deaf Mutes, with the Case of Helen Keller." M. Emile Guarini, a frequent contributor to these pages, writes on the "Siemens-Schuckert Continuous Current Wattmeter." Mr. Day Allen Willey discusses the proposed canal to connect Montreal with the head of Lake Huron, both from the engineering and commercial standpoints. The "Origin and Manufacture of Lakes" is a subject ably handled by Dr. Robert Ruebenkamp from the chemical-industrial point of view. Dr. Max Einhorn, in an excellent paper, makes some contributions to the method of radium treatment in medicine, its physiology, its diagnostic value, and its therapeutic results in carcinoma of the esophagus.

The Scientific American Building Monthly for November.

The Scientific American Building Monthly for November is a superbly illustrated number. The beautiful house of Herman B. Duryea, Esq., at Old Westbury, New York, forms the subject of the series on "Notable American Houses," by Barr Ferree, and is shown for the first time, the many illustrations including exteriors, interiors, and gardens, the latter embracing some unique and especially interesting features. "Old-Time Gardens" is the subject of an appreciative article, accompanied with illustrations of old gardens in New Bedford, Mass. Mr. George McCul-

lough Miller's fine house at Morristown, N. J., is illustrated and described, and other important houses are those of E. R. North at Montclair, N. J., Albert B. Davies, Netherwood, N. J., Thomas H. Wales, Chestnut Hill, Mass., Robert C. Walsh, Morristown, N. J., a cottage at Springfield, Mass., and a stable at Rosemont, Pa. "Sun Parlors" is the subject chosen for topical illustrations. The departments treat of "The Country House," "The Household," "The Garden," "New Books," "The Chimney," etc. An article on "Nathaniel Hawthorne on Architecture" is timely in view of the Hawthorne centennial.

Engineering Notes.

With a view of ascertaining the advantages of electricity over gas in lighting railway carriages, a number of the dining and sleeping cars on the East Coast companies have been fitted at the Doncaster works of the Great Northern Railway Company with an electric lighting and ventilating apparatus.

The Norwegian government has decided to put into execution the project of establishing an important naval base on the northern coast. The site will be strongly fortified. Melby has been suggested as the most suitable site for the new base, and fortifications will be constructed all along the coast line.

Two new bridges are now being erected across the Seine for the Paris Metropolitan, which crosses the river twice, once in the eastern and again in the western part of the city. Both these bridges will be of considerable size. Wagon tracks and footway will occupy the first platform, and upon this the railroad tracks will be upheld by iron columns. In both cases the Metropolitan line runs for a considerable distance upon an overhead structure before coming to the bridge. After crossing the bridge it enters a tunnel and connects with the existing subway. A third bridge is to be constructed shortly to provide for the north-south line, which runs directly across the center of the city. The line will lie mostly in subway, but will come out at a point near the river. The construction of the new bridge in the central part of the city is a matter of some importance, and the council has recently opened a concourse for the best design, as well as for the execution of the project. This concourse closes November 8.

A new system of manufacturing peat fuel in the form of briquettes by a chemical process has been devised. The raw peat is intimately mixed with lime, nitrate of potash, soot, and saccharine matter, by which means the water set free from the cellular tissues of the peat fiber by the action of the lime and nitrate of potash is absorbed by the lime, while the soot absorbs the oil of the peat. The saccharine matter, while strengthening the action of the lime by rendering it more soluble in the moisture, also causes the blocks of treated peat to dry thoroughly from the center throughout. The chemicals required cost 18 to 25 cents per ton of dried peat, and only a slight mechanical pressure is required, while the result is a fuel of density and calorific value equal to the best coal, free from sulphur, and suitable for domestic use, for gas making, steam raising, or conversion into charcoal for the iron smelters. By erecting the necessary machinery at the side of the bog, the cost of production is estimated to amount to \$1.25 a ton. The machinery devised is simple and completely automatic, so that there is no handling from the time the raw peat is fed into the hopper at one end until the briquettes emerge from the cutter at the other side of the machine.

A cruising gasoline motor propelled boat is being constructed by the S. F. Edge Company, of London, to the order of a wealthy American, which, when completed, will be the largest of this type of craft that has yet been constructed. The boat is essentially intended for cruising purposes, and therefore it will be built upon substantial lines. It is to measure 65 feet in length, and to have a carrying capacity of six passengers and a crew of two men. The appointments of the boat will be carried out upon a luxurious scale. It will be propelled by gasoline motors aggregating 340 horse-power. There will be two sets of engines each of 150 horse-power, placed on either side, and a smaller one of 40 horse-power placed centrally. This latter engine is specially intended for cruising at a low speed, starting the boat, and bringing it alongside the anchorage, where the higher-powered engines could not be easily or economically handled. At the same time it will be possible to employ it for augmenting the 150 horse-power engines at high speed, though it is not anticipated that it will afford much assistance in this direction. The boat will have an average speed of 20 miles per hour, and will carry sufficient fuel for ten days' continuous running at full speed. One of the terms of the contract is that the boat must cross the Atlantic under her own power, and be delivered at New York upon her own keel. It is expected that the journey will occupy from six to seven days.