

decay of these materials as displayed in many English cities. The obvious inference as to its cause being that it was due to the action of the acids absorbed in the rain-water, the author was led to test the behavior of a number of samples towards acids, with the following results :

Blocks of various stones, of the size of one cubic inch, were broken by permitting a hammer to fall upon them from a given distance, and recording the number of blows required to produce fracture.

The same material was next steeped for awhile in diluted sulphuric acid, and subjected then to the same test ; the result being that some of the specimens gave way at once, while others withstood the test with varying degrees of deterioration from the original quality.

These experiments are only the beginning of a series on the subject, and they promise to furnish quite a valuable contribution to our knowledge.

A Stationary Ship Saloon.—The attention attracted by the proposition of Mr. Bessemer to relieve the cabins of steamships entirely from the rolling movement of the vessel by suspending the same upon a pivot, is doubtless familiar to all the readers of the *Journal*. This design of Mr. Bessemer's has now, however, a rival in a proposition for a floating cabin devised by Mr. Alexandrovski.

The construction is similar to that of Mr. B., but the cabin, instead of being attached to a pivot, floats in a kind of tank placed amidships, between the engines.

The invention has been tested in practice by the head of the Russian Naval Department, and is reported to have proved entirely satisfactory—all efforts to shake the cabin having proved fruitless—and the rolling motion of the vessel being completely counteracted.

The Waste of Fuel.—At a recent meeting of the English Institute of Mechanical Engineers, the President, Mr. Siemens, made the statement that from one-half to two-thirds of the coal mined in England was wasted or destroyed carelessly ; and that, theoretically, the fuel consumed possesses more than ten times the capacity for iron-making or steam generation than is now realized from it in practice. In explanation of his remarks he further stated that sixty-eight pounds of coal is theoretically enough to bring a ton of iron to the welding heat, and more than enough to melt the same weight of cast-iron ; while the actual amount consumed varied from ten to twelve,

and at times to thirty times as much, and in some instances to even more.

But, to prove that much better results are within realization, he added that within the last nine years the consumption of coal per indicated horse-power has been reduced to one-half in the marine engine, and that if the average marine engine consumption of nine years ago is compared with the best results attained at present, the improvement is still more striking; for nine years ago the average consumption of coal per hour per indicated horse-power was 4·5 pounds. Steamships now make long voyages with a consumption not exceeding 2·2 pounds, and more rarely 1·7 pound of coal for the same duty.

Prize for Steel.—The Council of the Society of Arts has resolved to award the gold medal of the Society to the manufacturer who shall produce and send to the London International Exhibition of 1873, the best collection of specimens of steel, suitable for general engineering purposes. The following conditions are stipulated.

(a). The specimens exhibited for competition must include a complete illustration of the applications of the varieties of steel submitted.

(b). Each manufacturer should send with his specimens a statement of the nature of the tests he has applied to each kind of steel exhibited, and give the results of such tests.

(c). The samples tested are to be exhibited together with duplicate samples, or portions of the same samples, in order that they may be submitted to the same tests, should the Council deem it desirable.

(d). The Council reserve to themselves the right of withholding the premium in the event of the specimens exhibited not being sufficiently meritorious.

The Tin Discoveries.—In the last number of the Journal there was published a brief statement of the fact that extensive deposits of tin ore had been found in Queensland, and since that time a substantiation of the announcement has been made in the form of a report from Mr. T. V. Gregory, the mineral land commissioner of the Colony, which, besides giving much definite information as to the extent of the tin fields, places the value of the reputed discoveries beyond doubt.

From the report in question, we gather that the extent of territory upon which tin has been actually discovered, comprises about 550 square miles. Of this area, however, only about 220 square miles have been found to contain tin in sufficient quantity to pay for work-