

producing slow combustion of the fibre. This is useful information for dyers, as it explains the cause of an evil connected with preparing cotton cloth, which has hitherto baffled much scrutiny and experiments to discover. It is also well known to bleachers that when pieces of cotton cloth become stained with iron rust they are liable to drop out, leaving holes, as if they had been sprinkled with sulphuric acid. Every spot of iron rust should therefore, be immediately discharged when noticed by the use of dilute hydrochloric acid and warm water, or oxalic acid and warm water.

In shipbuilding, iron nails and bolts should never be used. In all cases copper or brass fastenings should be employed where first cost is not an essential object. In cases where the expense will not warrant the use of copper bolts, the iron bolts should be galvanized. Recently we have noticed with much satisfaction the extended use of zinc-covered iron bolts by our shipbuilders. This is a step in the right direction; but so far as we are informed, such bolts are confined to the construction of sea-going vessels. All our river-boats and schooners should be fastened with the same kind of bolts, because they are nearly as essential for vessels running on fresh water as those on salt. —*Scientific American.*

NOTES UPON PASSING EVENTS.

The French are acquiring influence in the Algerian Sahara, by introducing some of the useful arts of Europe: amongst others, that of boring for water. There is, beneath certain regions of the Desert, an apparently subterranean lake or river. The native Arab well-sinkers form a numerous corporation, enjoying several privileges and much consideration, due to the dangerous nature of their pursuit. Working constantly under water, many die of consumption, and some are drowned or smothered. The duration of each dive is from two to three minutes, and four dives are considered a day's work. When the well has been sunk about 40 yards, from 30lbs. to 40lbs. of earth are extracted daily. In the south of Algeria, the well-sinkers endeavour to find a subterranean stream, which is sometimes tapped at the depth of "the height of 100 men," which would be about 550 feet. Although the sinking is through dry ground, the danger is not less. Colonel Dammas thus describes the operation:—"The section is in a square form. One workman alone works at it; and, as he advances, he supports the sides with four planks of palm-tree. By certain infallible signs—for instance when the soil becomes black and moist—he knows that he is near the spring. He then fills his ears and nostrils with wax, that he may not be suffocated by the uprising deluge of water, and fastens a rope under his arms, having previously arranged to be drawn up on a given signal. At the last stroke of the pick, the water often rises so rapidly, that the unhappy well-sinker is drawn up insensible. These inexhaustible springs are the common property of the village which has discovered them, and are conveyed to the gardens in conduits of hollowed palm-tree trunks. It is these springs which are the foundation of the greater number of the oases of Sahara." In 1853, when French conquests had extended to the vast and mysterious solitude called

the Great Desert, well-boring and sinking apparatus were introduced, and astonished the Arabs by their simplicity and effectiveness. In the five years ending 1859–60, 50 wells have been opened; 30,000 palms and 1000 fruit-trees have been planted; many oases have revived from the ruin caused by a failure of springs; and two villages have been created in the Desert: the total expense not having been much more than £20,000 sterling, which has been repaid by taxes and voluntary contributions from the Arabs. The French author from whom we quote observes:—"Such works give us ten times more influence than our military victories. The waters bubbling up from these borings are generally charged with sulphate of soda, magnesia, and lime, either as a chloride or a sulphate, which makes them bitter and salt; but the Arabs are only too glad to have any kind of water, and the palms and other vegetable products of the Desert thrive on it." The borings of Sidi-Sliman and K'Sour present the curious phenomenon of live fish. A parallel to this case was reported by M. Aymé, governor of the oases of Egypt, to a scientific society in France. In clearing a well 325 feet deep, he said "he had found fish fit for cooking." The French propose to extend these wells into the Desert, so as to unite the rich oases of Touat, on the route to Timbuctoo, with Algeria, and thus direct the stream of overland commerce into its ancient channel by Algeria. This is a legitimate attempt; but not only is the construction of roads and wells needed, but the repeal of those laws of trade and that system of taxation which repels commerce. At present, the customs dues of the port of Algiers are rather more repulsive to traders than those of barbarian Tunis and Morocco.—*The Journal of Gas Lighting.*

Miscellaneous.

The British Navy.

The annual official return of the number, name, tonnage, armament, and horse-power of each vessel, both steamers and sailing ships, composing the British Navy, was published on the 1st of January, under the authority of the Lords of the Admiralty. Including a numerous fleet of gunboats the navy of England, on Jan. 1, numbered 1,014 ships of all classes. Of this number there are 85 line-of-battle ships, mounting from 74 guns to 131 guns each, according to their rating; 39 of from 50 guns to 72 guns each; 69 frigates of from 24 guns to 46 guns each, most of which are of a tonnage and horse-power equal to a line-of-battle ship; 30 screw corvettes, each mounting 21 guns; and upwards of 600 frigates and vessels of all classes mounting less than 20 guns. In addition to the above there is a fleet of 190 gunboats, each mounting two heavy Armstrong guns and of 60 horse power, besides a numerous squadron of iron and wooden mortar vessels built during the Russian war, and now laid up at Chatham. At present there are 43 vessels under construction for the Admiralty at the various public and private dockyards, many of which will be completed and launched during the present year. The iron vessels building are the Achilles (50) 6,079 tons, 1,250 horse-power, at Chatham; the Northum-