

at force 9 and upwards—that is to say, from a strong gale to a hurricane

This document reveals a most lamentable state of things. Here are the facts minutely detailed of 2,513 shipwrecks, with the appalling loss of 1,338 lives, clearly and incontrovertibly put before us as having taken place on the coasts and in the seas of the British Isles during the short period of twelve months.

The loss of property, including ships and cargoes alone, can hardly be represented at less than fifteen millions of dollars!

We, however, are principally concerned, as we before said, in the loss of life, which is far beyond any money value. By the great, unceasing, and noble efforts to save life that were made, not only by the boats of the National Lifeboat Institution, but also by the rocket apparatus under the control of the Board of Trade and by shore boats, whose crews are stimulated by the liberal rewards of the National Lifeboat Institution to use every exertion to save life, the number of lives saved last year can hardly have been less than 2,000 in all; and in the great majority of cases, they must have perished in the absence of the exertions which were used, and particularly so in respect to the service of the lifeboats. The register states that the total number of lives saved last year, by all means, was 5,815.

The latter part of 1867 was, as will be remembered, unusually productive of shipwrecks on the British coast. During the heavy storms of November and December alone, the lifeboats of the National Lifeboat Institution rescued 259 persons from different shipwrecks; and during the fearful gale which continued from the 1st to the 3rd of December, and which was the most serious one of the year, 328 vessels were lost or damaged, and the lamentable loss of 319 lives took place, thus making the latter storm nearly equal in intensity to the celebrated gale of the "Royal Charter," in October, 1859, when 343 vessels were lost.

Again, the gales in January, February, March, October, November and December, in 1866, produced a total number of 793 shipwrecks. Of that number 279 occurred in the month of January of that year, and it will be remembered that on the 11th, the most disastrous gale of that month, Torbay was visited by a hurricane, in which 61 vessels were totally destroyed or seriously damaged accompanied by a loss of 35 lives. There were also numerous minor casualties on different parts of the coast on this day. — *American Exchange*.

COTTON SUPPLY ASSOCIATION.

At the usual meeting of the Executive Committee, held at Manchester on Tuesday, February 2 letters were read from several Indian officials, now in England, respecting the best means of promoting an extended and improved cultivation of cotton in India. The Revenue Commissioner, Northern division, Bombay presidency, is of opinion that the area of cotton cultivation in Gozerat might be considerably increased by the encouragement of immigration into the Puch Mahals to the north of Baroda, a large portion of which is now jungle, from want of inhabitants. He states that he has several times urged the Bombay Government to offer liberal terms to settlers, but has only obtained their consent to half measures. The Chief Commissioner in the Central Provinces expresses the opinion that improvement can only be obtained very slowly and laboriously by constant experiments, assiduous cultivation, and general improvement of administration. There are not in India any large scientific farmers, but the ryots, with very limited means, are, taking them all in all, as good practical agriculturists, and as ready to adopt improvements as any similar class in any part of the world. If the ryot can be shown any system by which he may grow more and better cotton, he will not be slow to adopt it, but he cannot be expected himself to make the experiments necessary to find out the best methods. Cotton in India requires good land, highly cultivated, plenty of labor, and in such a country these things cannot be had together. All the best land has long ago been taken up, except where from unhealthiness or other causes, population is very scanty. Waste lands are, therefore, available on the most liberal terms, but cotton is only grown in quantity on old and valuable lands. The great place of the scientific farming as much as possible, by experimental farms to immer, or, in other words, cultivation in a practical manner, the plant and the culture, pedigree system and so on; such a farm, where the would, it is believed, other experiments might be tried, would, in our opinion, be of great service in the Central Provinces or Berar. A minute prepared by the Chief Commissioner on the Godavery navigation and subjects arising out of it, expresses the opinion that it is an essential part of any complete scheme of navigation that it should connect with the railway, and thus establish the means of through traffic. The rail and navigable route would aid one another in many ways; it may be said generally that each would act as a feeder to the other; those things which seek an eastward course might be brought short distances by rail to the place of embarkation; those which seek an outlet to the west would be easily and cheaply brought by water to a railway station. A through communication right across India must have many commercial and political advantages. From Nagpore the present line of the G. I. P. Railway takes for some distance a southerly course. At the point where it turns west it should be connected with the cotton marts and the Godavery navigation. The sanctioned surveys in connection with the latter scheme have been made with the object of carrying the navigation up to Hinghghat. This well-known great cotton mart is only 18 miles from the rail, and the two systems of transport must evidently be united. It may be found possible to carry a boat canal up to the railway, or it may prove a better course to carry a branch line twenty miles beyond Hinghghat, to the point on the Wurdah which the Godavery navigation must reach if it is to become effective. The cotton

country of the Wurdah and of Edlabad (valley of the Paingunga) would then be fully tapped whether for rail or river, and the coal of the Chandah district would be made available. The cotton of the Wurdah and Edlabad districts is rather fine in quality than large in quantity. As regards the navigation of the Wurdah, both the Chief Engineer and the Commissioner were agreeably surprised to find its character, as judged by an Indian standard, so very much more favorable than could ordinarily have been expected of a stream of the kind. In fact it is, for an Indian river, eminently suited to navigation of a small and light kind, and, even in its natural state, comparatively little seems to be required to fit it for light boats during the greater part of the year. The Wurdah river never runs dry, and in the Chandah district it is navigable by small boats for a long distance without any break, so late as the month of February at least. An officer long resident in India, states as the result of his own knowledge of the facilities which exist for growing good cotton in that country, that it is quite practicable not only to improve the quality, but to increase the quantity in a tenfold degree. A letter was read from the Cape of Good Hope Agricultural Society, stating that the cultivation of cotton is being rapidly extended throughout the districts adjoining the sea-coast, and requesting to be supplied with some cotton seed and information respecting its treatment. It is hoped that the efforts now making will be crowned with success, and that eventually a considerable quantity of cotton will be produced.

BARLEY IN ENGLAND.

At a time when this grain occupies so important a place in our markets the following information on its position in England may not be out of place:

The official agricultural returns show an acreage under barley in England in 1868 of 1,780,101 acres, or 112,000 less than in 1867, although a larger number of returns was obtained 1868; but more acreage was devoted in 1868 to the growth of wheat. The total area under barley in the United Kingdom in 1868 is returned as 2,348,068 acres. The great barley field of the kingdom shows in each of its counties a decrease—the return for Essex is 97,829 acres under this crop; Suffolk, 180,068; Norfolk, 182,697; Lincolnshire, 180,531 acres. The other counties of England devote less land to barley. The south-western counties, however, give it a good acreage—Cornwall, 48,868 acres; Devonshire, 77,959; Dorsetshire, 26,276; Somersetshire, 52,687; Wiltshire, 69,047. Hampshire applied 55,938 acres to barley, and Kent 88,079 acres; Surrey and Sussex smaller areas, 17,064 and 24,187 acres. Eight underland counties gave about 300,000 to this crop in 1868—Gloucestershire, 38,134; Berks, 36,722; Oxfordshire, 49,699; Herts, 42,902; Northamptonshire, 40,507; Cambridgeshire, 52,968; Nottinghamshire, 45,456; Salop, 50,840 acres. Lancashire, which grows so little corn, returns only 6,948 acres under barley, a quantity exceeded by the smallest county in England; and Lancashire is one of the dozen counties with more than a million of acres, and has the largest number of months to feed. The West Riding of Yorkshire shows 66,400 acres in barley; the North Riding 54,876; the East Riding 45,958 acres. Some northern counties apply but small areas to this crop, but in Northumberland it gives 29,084 acres. Wales shows 151,608 acres of barley, a larger number than of wheat. The south-western counties of Pembroke, Carmarthen, and Cardigan, supply nearly half this area. Scotland gives 219,219 5/16 acres to barley, a much larger quantity than to wheat. The chief field is in the east, Kincraig, Berwick, Haddington, Fife, Perth, Forfar, Aberdeen, range from 25,000 acres in Fife and Forfar to 12,000 in smaller Haddington. Ireland had in 1868 188,252 acres growing barley, a larger quantity than in any year since 1862. It is chiefly grown in Wexford, Queen's County, Louth, Cork, Kildare, and King's County—the first two having in 1867 41,513 and 22,667 acres respectively under barley, the other four ranging from 10,000 to 19,000 acres. Our import of foreign barley for home consumption was 8,438 1/4 cwt. in 1866, the largest import ever received; in 1867 it fell to 5,662,289 cwt., but advanced to 6,490,742 cwt. in the first 11 months of 1868. The export of malt, the product of the United Kingdom, was only 45,080 qrs in 1867.

ROBBERY OF THROUGH FREIGHT.

We have had occasion to notice the turning out of "through freight" cars from the Ontario engine shops here, and in connection with through freight may mention certain risks such freight runs in reaching its destination. The cars are locked with non-burglar proof locks, and what locks now-a-days are burglar proof? A curiously inclined person poses himself as a conductor's key, by fair means or foul, and at some wooding or watering station, during a dark and stormy night, quietly opens one of those cars and gets in. As soon as the trains get under motion, a few of the choicest bales and packages are tumbled out and immediately taken care of by accomplices, while at the next stopping place he as quietly gets out and relocks the door. This is perhaps done within a hundred miles of the starting place, and unless every car is examined and the freight checked off by the way bill every few hours it will be next to impossible, when the car arrives at its destination, five, eight, or ten hundred miles, to say on which road or part of the route the robbery was committed, and it is, therefore, the more difficult of detection. Lenden or other clasp are no protection, for robbers can replace them. We have said this much to press a notice of a padlock which was shown to us the other day, invented by a Canadian iron lock, capable of 10,000 modifications, and to unlock it only two figures are required to be remembered, and if these be not known, or if forgotten, a person might try it

10,000 times before he opened it. And he must know how to open the lock even if he have proper numbers. The only way for robbers to get into the car is to break off the lock or break open the door, in either of which case the discovery would be made within a sufficiently short distance of the place of the burglary to enable the thieves to be more readily detected. We are assured that the lock can be made for very little more than the cost of ordinary car locks. It is simple, and not liable to get out of order, and may be made of the ordinary size. A patent has been applied for at Washington, and it will very probably be patented also here and in other countries. It has been invented expressly to meet the difficulty stated, and would seem calculated to meet the case admirably, and if it does, the inventor deserves to make his fortune out of it, as well as to receive the thanks of railroad freighters. — *Kingston News*.

PACIFIC COAST MINING PROSPERITY.

LAST year appears to have been one of great prosperity as regards gold and silver mining on the Pacific coast. The *Commercial Herald* of San Francisco, under date of January 14th, has an exhaustive review of this branch of industry, containing many pregnant facts and figures of progress and well sustained production. From this review we learn that there are nineteen counties in California in which mining operations are actively carried on at the present time. These contain within a trifle of five thousand quartz mills, costing about \$6,500,000, independent of water trenches, created at an additional cost of some \$10,000,000.

In the State of Nevada is located the Great Comstock Lode, whence the bulk of our silver is drawn. There are in that State 168 quartz mills, besides a number of metallurgical establishments for the treatment of ores by smelting; the cost of this entire class of improvements being estimated at \$10,000,000. The "White Pine" mines recently developed, promise to rival the Comstock Lode, though no great progress appears to have been made thus far. In Oregon there are 21 quartz mills, but the business of the past year is stated not to have been very profitable, owing to the scarcity of water. Some new and apparently rich "diggings" are reported to have been found. In Idaho there are 48 quartz mills, costing \$765,000, and the bullion yield for the past year is estimated at \$7,000,000. In Montana, new and promising gold and silver mines have been discovered. There are now over 30 quartz mills in the Territory, and the yield of bullion in 1868 is stated at about \$14,000,000. Washington, Arizona, Utah, and New Mexico are said to contain valuable deposits of the precious metals, though mining operations appear to have made but little progress thus far.

The copper mining interest of California seems to have languished, owing to the depressed condition of the markets for this metal. Coal mining, too, was only moderately prosperous. But California has discovered a new wealth in the shape of rich tin mines, in San Bernardino county. The quicksilver mining companies of California, it is said, have entered into an arrangement looking to a restriction of their joint production, to a quantity not likely to be largely in excess of the prospective consumption of that metal, with a view, as is supposed, of enhancing the price.

The general conclusion with regard to the precious metals is, that in no preceding year has there been a greater degree of mining activity, or more solid progress made, than in 1868. It has been marked by the introduction of more permanent and scientific methods of mining, the application of improved machinery and modes of reduction, and methods of separating the pure gold from ores containing other compounds; dispensing with quicksilver, unwonted facilities for roasting the ores; the substitution of wooden tubs for iron pans, by which a great saving of expense and a purer article at the same time secured; and the employment of nitro-glycerine and giant powder in blasting, by from 25 to 50 per cent can be saved. These and like improvements in working the mines have, together, contributed largely to make the present mining operations of California, at least, a more stable, reliable, and profitable business; and to prevent those seasons of intense excitement which marked the early years of gold hunting in California.

The aggregate yield of gold and silver in the United States in 1868 is estimated at about \$65,000,000 which is probably not far from the mark. With the completion of the Pacific railroad this year, and the rapid progress of railway construction in the Pacific States, in connection with the improved methods of reducing ores, it is safe to conclude that still better results will be reached in the near future. — *N. Y. Bulletin*.

BLEACHING OF WOOD-PULP FOR PAPER.—M. Oriol, a French chemist, says, in the *Revue hebdomadaire de Chimie*, that the chloride of lime, if the dose is the least in excess, has a tendency to give a yellow tinge to the pulp; that all energetic acids without exception, tend to give a reddish colour to the paper when exposed for a long time to the effects of the sun or of moisture, and that the least trace of iron is sufficient in a very short time to black the pulp. He says he has succeeded in avoiding all these inconveniences by the use of the following mixture:—For a hundred-weight of wood-pulp, he employs 400 grammes (four-fifths of a pound) of oxalic acid, which has the double advantage of bleaching the colouring matter already oxidised, and of neutralising the alkaline principles which favour such oxidation; he adds to the oxalic acid one pound, or a little more, of sulphate of alumina, entirely deprived of iron. The principal agent in this mode of bleaching is the oxalic acid, the power of which over vegetable colouring matter is well-known; the alum has no bleaching power of its own, but it forms with the colouring matter of the wood an almost colourless lake, which has the effect of increasing the brilliancy of the pulp.