

work goes to the State; he is allowed to spend a quarter in procuring special articles of diet, etc., and the remaining quarter is paid to him on leaving, so that a discharged convict often finds himself with from \$100 to \$300 cash capital. A large proportion of the prisoners use this in setting themselves up in trade, or in procuring passage to other countries. These rewards of industrial labor, together with the industrial training itself, constitute together the main and tolerably effectual counterbalance to the otherwise grave evils of association. The element of hope is always prominent in French prisons, and it is the sheet-anchor of their administration. A visitor to La Santé, at Paris, observed in the first cell he inspected a table on which lay a pipe of tobacco, a half bottle of wine, and a novel."

LIFE-PRESERVING BULWARKS.—At a recent meeting of the Manchester (England) Mechanical Society, Mr. Gadd proposed to form the upper portion of the bulwarks of ships of loose sections composed chiefly of hollow thin metallic tubes divided into compartments by diaphragms, the sections to be about 12 feet long, each to be divided into a number of compartments of any suitable form, and provided with projections on their under sides so as to be fitted on to the place of the top rail of the bulwarks, and to be a substitute therefor. These sections when immersed in the water would form so many pontoons, and would be provided with cords and loops along their sides, and in the event of the ship going down would be lifted out of their place by the action of the water. He would also construct the whole of the seats on the deck in the same manner, and underneath every seat, and along the entire length of the bulwarks and lying on the deck, other floating tubes could be provided. In the case of sea-going vessels, he would fit the bulwark tubes with holes, rings or slots, so that in case of foundering they could be jointed together either before or after taking to the water. The great advantage of this arrangement would be that it would be in perpetual readiness for any sudden emergency, and there was no doubt that vessels could be readily fitted in this manner.

THE ULIKON, OR CANDLE FISH, OF ALASKA.—The ulikon has long been an ichthyological curiosity, and has attracted the attention of every traveller who has visited the coast of British Columbia and Southern Alaska. It is a small silvery fish averaging about 14 in. long, and in general appearance resembles a smelt. They are the fattest of all known fishes, and afford a superior oil when dried out. Dried they serve as torches, and when a light is required it is only necessary to touch the tail to the fire when they will burn with a bright light for some time. No description can give an adequate idea of their numbers when ascending the rivers from the sea. The water is literally alive with them, and appears to be boiling. These fisheries have not been utilised except by the natives. The most important of the native fisheries is on the Nasse river, near the southern boundary of Alaska. The spot is named "Kit-lak-a-laks," and a Catholic mission was situated there. Many tribes come to these fisheries which begin about the 20th of March. The first fish caught is addressed as a chief, and many apologies are made to him by the Indians for the necessity which compels them to destroy his kindred for the supply of their own wants.

A NEW POLAR ISLAND.—The discovery of a new island in the Polar Seas is announced by the following telegram from Tromsø:—"E. Johannessén, who has just returned there, reports that he penetrated a considerable distance to the east, beyond Novaia Zemlya. On September 3, in longitude 66° E. and 77° 35' N. latitude, he discovered an island which he has named 'Ensomheden' (loneliness). It is about 10 miles long, and level, the highest point not exceeding 100ft. It was free from snow, with poor vegetation, but an immense quantity of birds. The sea was free from ice towards the west, north, and south, but drift ice was seen towards the south-east. There was evidence that the Gulf Stream touched the west coast of the island; the stream runs in a strong current round the north coast towards the south-east. Everything about the ice was favourable for navigation so long as the vessel did not go too near the mainland of Siberia." The newly discovered island lies, therefore, somewhat to the south-east of the region visited by the Austrian Expedition of 1873-4.

A NEW SIGNAL OF WARNING FOR DANGEROUS COASTS.—A foreign journal, translated by the *Iron Age*, describes a new method of giving signals of warning at sea that has recently been perfected, and is now employed with success at one of the most dangerous points on the coast of Bretagne. The signals consist of sounds, which are repeated at short intervals, and can

be heard, even against the wind, at a distance of six kilometers. The apparatus by which these sounds are produced is self-acting and very simple. It consists of a hollow cylinder, a few centimeters in diameter, and three or four meters long, closed at the lower end and secured by an anchor to the bottom of the sea. In this cylinder is found a pump which sucks in the air, compresses it and sends it out through a whistle, and this pump is worked by a huge fagot, floating on the surface of the sea, and whose movements, rising and falling with the waves, furnish the sufficient force. This apparatus is said to have been invented by an American.

CHEAP CARRIAGE OF PARCELS.—A great advantage to the public in the transport of parcels is promised shortly. Twenty-five companies of England, Scotland, and Wales have resolved to issue, from and after the 1st of January next, railway stamps to the public, of the denominations of fourpence and eightpence, which shall carry parcels of two pounds and four pounds, respectively, throughout their whole systems, and have agreed to accept parcels at these weights and at these rates throughout the whole of their systems, and to grant an insurance up to 20s. at these rates, thus placing all the stations on these twenty-five companies at the command of the public, for the receipt and delivery of parcels not exceeding four pounds in weight. Four English companies have refused to accept parcels at these rates, and a public meeting is to be held in London to induce them to join in the action of the rest, and to urge upon the Post Office to co-operate in the movement.

EXTRACTION OF A LIVING INSECT FROM THE EAR.—The *Archives Médicales Belges* relate the following case: A little girl, three years old, put an insect, "*bête du bon Dieu*," into her ear. Sharp cries, agitation and convulsive symptoms ensued. Injections of water were made without result. The physician then conceived the idea of asphyxiating the insect by means of chloroform; he dropped four drops of chloroform upon a small piece of cotton, which he introduced into the ear. Immediately the child ceased crying and complained no further of any disagreeable sensation; the insect had become asphyxiated; an injection of warm water brought it away dead, and no further trouble ensued.

The authorities of the Trinity House have been making experiments with a new gas which has been brought under their notice as being not only cheaper than ordinary gas, but far more effective. This new gas is capable of so much concentration that a quantity contained in a small buoy has kept a light burning for twenty-eight days with sufficient brilliancy to show the position of the buoy from passing ships. The inventor declares that a buoy of ordinary size would contain sufficient gas to keep a good light burning for nine months, so that all our buoys might show lights at night if gas were supplied to them twice in a year and a half.

MARBLE CEMENTS.—A composition of gumlac, colored to suit the occasion, is sometimes used. The rust cement is also used, composed of hydrochlorate of ammonia, 2; flour of sulphur, 1; iron filings, 16. For coating inside of cisterns: Pulverized baked bricks, 2; quicklime, 2; wood ashes, 2; olive oil to make a paste. For stone seams and joints: Pulverized tiles or hard brick, 6; white lead, 1; litharge, 1; oil to compound. Another cement is as follows: Hydraulic cement, 12; triturated chalk, 6; fine sand, 6; infusorial earth, 1; all mixed with soluble soda glass.

MAHOGANY SUPERSEDED.—Mahogany, heretofore the chief source of wealth in British Honduras, was during 1876 of such small value as not to repay the expense of cutting, and never probably since the occupation of the colony, with the solitary exception of the year 1870, was so little of this wood exported. Of logwood, on the other hand, owing to the exceptionally high prices of 1875, more was sent home during 1876 than in any year since 1864. In 1875, 1,587 tons of logwood, valued at £6,348, were shipped from the island of St. Lucia.

It is stated that the Admiralty have decided to adopt the use of anchors made of Bessemer steel, which can be had at less than one-half of the price paid for the costly "best" iron hitherto used; but it yet remains to be seen how far the quality will be the same. This extension of the area in which Bessemer steel is now used is likely to be of great value to the steelmakers, if the experiment prove successful, and to have important effects on the chain and anchor trades.

The farmers of Langley, Canada, offer a bonus of \$2,000 to any party undertaking to erect a mill containing two run of stones for wheat and one for oatmeal.