

manufacture of coal-gas those hydro-carbon gases are produced on a large scale by the destructive distillation of coal; and they are consumed in the flame of a lighted gas-burner just as they are consumed in the flame of a candle or a lamp. In fact, the only essential difference between oil or candle-lights and gas-jets is that in the case of the former the destructive distillation is immediate, and takes place at the light itself, whereas in the case of the latter it is a general process apart, the gases being generated and stored at a distance from the points where they are consumed.

Inflammable gas occurs in nature in great quantities among certain carbonaceous deposits in America, the Caspian Sea, and elsewhere, as well as among beds of rock-salt in China and Hungary. The merit of discovering and utilising artificial gas belongs among

the nations to our own country, and the chief credit, as is well known, is due to a Scotchman, Robert Murdoch. Before Murdoch's time there had been many attempts to use coal-gas for lighting purposes, but none of these trials led to any marked success. In 1792, however, Murdoch, who was then residing at Redruth in Cornwall, began to study the subject, and five years later lighted up the workshop of Messrs. Boulton and Watt in Birmingham with coal-gas manufactured on the premises. From that time the introduction of gas proceeded apace in private establishments, but it was not until 1810 that the first public company, the Gaslight and Coke Company, was formed by Act of Parliament for the manufacture and supply of gas for streets and homes. In 1813 Westminster Bridge was first lighted with gas; and three years later gas was common in London.

### A TOWN OF CORAL-FISHERS.



THE pleasant town of Torre del Greco, now numbering nearly 5,000 inhabitants, was once celebrated for its fertile fields and vineyards. But repeated eruptions of fiery lava from the neighbouring volcano gradually changed the district into an arid desert of scoria and sand, repeatedly destroying the town, which, however, as repeatedly rose again from its ashes. After the celebrated eruption of 1631, it had been rebuilt in little more than a

century by the 3,000 remaining inhabitants and their descendants, when, in the year 1737, another fiery torrent destroyed its eastern part. In 1749 the western quarter was overwhelmed by a stream of lava which overtopped the roofs. The last time that the town suffered from this terrible scourge was in 1861, when, on the opening of several new craters not far off, the houses which had been built on the old lava-beds of 1784 suddenly crumbled like the walls of Jericho at the blast of the trumpet.

The inhabitants, prevented by such disasters from gaining riches from the earth, sought for them in the sea. It is now about a century since the prows of the Torre coral-boats first made their way into Tunisian waters, and we may yet recall to mind the struggle which took place between the African company and the fishermen of Torre del Greco when, in less than seven years, the latter, approaching the coasts of Barbary, made themselves masters of more than sixty miles of sea.

At the present time a large proportion of the in-

habitants of Torre derive their subsistence from the coral trade. The number of coral-boats belonging to the town is from 500 to 600. The vessels are generally about eight tons burden, and when new are worth from 300 to 500 francs, according to size. When a bank of coral is discovered, it is fished by boats from all parts, the laws as to right of property in a newly-discovered bank not having yet been fixed. The coral merchants of Torre del Greco trade almost exclusively with foreign countries, very little business being done with Naples or other parts of Italy.

We visited the largest coral merchant and manufacturer in Torre del Greco, who may be taken as the representative of his class. He alone possesses a fleet of boats, consisting of five schooners, two *martinganes*, and thirty-seven *corallinas*. The other merchants of the town have one, two, or three boats. The above-mentioned merchant has gradually accumulated a fortune of 10,000,000 francs, beginning life as a common coral-fisher.

Every year, towards the end of January, his little fleet leaves Torre del Greco for an eight months' cruise. Each boat carries a captain—commander—and nine men, who live during the time of their absence on dried peas and beans, macaroni, and wine. They carry provisions for about a fortnight, and when these are finished run into the nearest port for more. They sleep in the small cabins below the level deck, the captain alone under the prow, the men at the stern. In October they return home and rest during the four winter months. Very rarely one or the other undertakes a winter voyage in some ship in the interests of his employer. The men are paid for the whole season; the commander earns from 600 to 1,000 francs, the men from 300 to 400 according to age and ability.

The manner of fishing the coral is as follows:—Every boat is provided with one or two chests in





which to put the coral, and with a set of nets which are fixed to an apparatus. This consists of a large cross of wood, weighted where the two pieces join with a round piece of iron, to which is fixed a rope, and another to each of the four ends of the cross; and to each of these long ropes are fastened a quantity of nets. When the fishermen seek for the coral they let down and raise the apparatus several times until a bank is found,



1. VIEW OF TORRE DEL GRECO. 2. VIEW OF CORAL-FISHING FLEET. 3. WORKSHOP IN TORRE.



when the nets are allowed to rest on the coral for an hour or two, in order to settle and gain a good hold. Then the apparatus is drawn up—very hard work, as the strong meshes are intertwined among the thousand branches of the coral, and tear it from the rocks by main force. All the long hot summer day, eight men and boys—for they commence their career at the age of thirteen—turn the capstan which drags up the net, while one man remains at the rudder, and the captain at the prow. When the chests are filled with the broken coral they are taken to the nearest port, and the coral deposited in a magazine, the boats returning to the fishing-ground for more. The work of turning the capstan often induces consumption, from the pressure of the bars against the breast.

Last year a Sicilian found a large bank of coral at Sciacca, off the coast of Sicily. This summer the fleet of Torre del Greco went thither, and the take of coral was so enormous that the share of the above-named proprietor alone amounted to 1,000,000 francs' worth of raw coral, 8,000,000 to 10,000,000 francs being the total value of the coral taken by the united fishermen of Torre del Greco; and yet the bank is not exhausted, and the boats will return there next year. Usually the quantity taken in one season is manufactured into beads and other ornaments in the course of one year; this time the quantity is so extraordinary that it will take twenty years to use it up. The coral found on this bank is of very small size.

On arriving at the principal manufactory in Torre, which belongs to the owner of the fleet we have mentioned, we were first taken into the upper rooms of his house, and in one of them were shown a stack of raw coral about twelve cubic feet in bulk. It looked exactly like a stack of small dried branches and twigs of a light brown colour. Every single branch and twig is sorted by the proprietor or his sons.

We then descended to the workshop, where 150 girls, women, and men are employed, and others work at their own houses, in all numbering about 600 persons. The women and girls are the wives and daughters of the fishermen. The women earn from one to three francs a day; the men, from six to seven. They commence work at about seven o'clock in the morning, and work till dark, no gas or other light being used.

On entering the large double room, or rather cellar, with vaulted ceiling, on the ground-floor of the proprietor's house, our ears were assailed with the shrill noise of twenty files working at once. One half of the room was filled with women seated at a long table, the top of which was partitioned off into small troughs. Here the coral undergoes the first process of manufacture into beads. Each woman has a large file and a gigantic pair of sugar-nippers. With the file she notches a branch of coral at small intervals, with the nippers she cuts it into pieces, which fall into a large apron suspended from her waist to the edge of the table.

Then comes the perforation of the beads. The girls employed in this work have each a small rough table, on which is a basin of water with a tin spout attached. The rough bead is fixed at the edge of the spout in a sort of wooden clippers, and the water

filters slowly on to the bead through a bit of rag stuck into the spout. The drilling of the holes is done in the following primitive manner:—The operator holds in her left hand a fine borer, the point of which she places on the stationary bead, then with her right hand she draws the string of a tiny bow of wood rapidly along the stick of the borer, thus causing it to revolve, when the hole is drilled in a few seconds.

The bead is then passed on to another woman, who roughly rounds it in a groove on a whetstone. These are the common oblong beads, not carefully worked. The perfectly round ones, after being cut and bored, are finished by men. The bead is stuck on a fine needle or point fastened to a little stick; this the workman holds in his left hand, the thumb of which is protected by a piece of leather. The bead is then rounded with a file, the workman with his protected thumb turning it round and round, and supporting it against the edge of his table, while he uses the file with his right hand. The fine dust caused in this way must be injurious to the lungs. There were about twenty men at work, crowded together at a table in one corner of the room.

The beads are lastly washed in sacks in large stone troughs of water, built against the wall near the door; the women roll and press the sacks, thus turning the beads round and round, by which process they are partly polished by friction against each other. The final and high polish is done by hand with little sticks (*stecchetti*) and pumice-stone. There is no possible control against petty theft during the manufacture of the beads, as nothing is easier than to slip a few into the pocket or other portion of the dress, but only one man out of the 600 persons employed was in prison for theft.

Several designers are engaged for the artistic work, which is done in the upper rooms by skilled workmen. But the bulk of the trade is in beads. The chief export is to Calcutta and Madras, then follow Japan and the United States. The value of the raw coral is about doubled when manufactured.

Before leaving we were shown a number of curiosities, one of which was a large piece of Japanese coral, about eight inches high and three thick, which has been cut into a little pyramid formed of the tiny busts of the late King Victor Emmanuel, King Humbert, Queen Margarita, and their little son. The likeness of the latter is really good, and the trophies, flowers, &c., which surround and support the little heads are very finely worked, though the effect of the whole is more curious than artistic.

On passing through the town on our way home, we stopped to speak to several coral-fishers who were sauntering about, enjoying their holiday. They were all well and comfortably dressed in clean jerseys and pilot cloth, and looked robust and healthy, with sunburnt and weather-beaten faces. Like all Italians, they had easy, gentlemanly manners. They spoke with pride of the large fleet possessed by Torre del Greco, and, while shaking hands at parting, invited us to come and see the *corallinas* next January, when fitted out and ready to start once more to ransack the sea for its rosy treasure.