complete in ten and a half months. In May 1827 and January 1828 the river burst in. These accidents were overcome by throwing down bags of clay from above. The work was however suspended for several years, not from any doubt of its success, but from want of funds. It has again been commenced, and has now reached the wharf-wall on the Wapping side.

The shafts will contain easy flights of steps for foot-pas­sengers, and the descents for carriages are intended to be circular, to give them an easy slope. The middle wall was first built solid for greater strength ; but openings were then made, so that each tunnel has ready communication with the other. The entire length will be 1300 feet. During the excavation each portion of the shield advances sepa­rately; and in front, polling boards are pressed firm against the earth by screws. These boards are removed singly to excavate, and the first is always replaced before a second is taken down. Fig. 17 shows through the tunnel a view of the twelve parts of the shield as worked. They, of course, are all of a length, extending to the outer parts of the brick-work in all parts.

In Plate CCCCXCIV., fig. 14 shows the mode of support­ing the shafts in a canal or railway tunnel when finished, by the iron curb, separate drawings of which are given in figs. 6, 7, 8, and 9; fig. 12 shows the mode of drawing the curves for the tunnel exemplified in North Church Tunnel on the London and Birmingham Railway ; fig. 5 is the front of Stowehill Tunnel ; fig. 1 is the front, fig. 2 is a section of the wing-walls, fig. 3 a section through the centre, and fig. 4 plans at top and bottom of Linslade Tunnel. All the figures are to the same scale, that under fig. 11 ; except figs. 17 and 18, which are to the scales near them. (b. η.)

TUNQUIN, or Tonquin, a large kingdom of India be­yond the Ganges, bordering on the Chinese provinces of Quangsee and Yunan, and separating that empire from Cochin-China and Cambodia. It is situated between the seventeenth and twenty-third degrees of north latitude. It is bounded on the east by the Gulf of Tunquin, and on the west by Laos, Lactho, and part of the province of Yunan in China. This country is of an extremely diversified surface. The districts to the north and west, towards China, are wild and mountainous, with no very distinct boundary ; and the breezes from these heights, and towards the sea, always preserve a tolerable degree of coolness. Mountains, extending from east to west, separate Tunquin into two di­visions, of which the northern is considerably larger than the southern. A prolongation of these ridges separates Lac- tho from Laos, and others separate Tunquin from Cochin- China. These mountains are of great elevation, and many of them terminate in sharp peaks. The central part of the country consists of a vast alluvial plain traversed by numer­ous rivers, chiefly tributaries to the great river called Saigong, which flows through the whole breadth of Tunquin, and on which all the principal towns are situated. The seasons or monsoons are here, as in other tropical countries, divided into wet and dry. The rains begin in May and end in August, and are accompanied with thunder loud and terrific. There are few countries better supplied with water than Tunquin and the lower parts of Cochin-China. The country of Tunquin is watered by above fifty rivers that flow towards the sea, several of which, by their union, form the large stream which passes Backing. This river, which was navigable about 150 years ago, when Dutch vessels ascended the stream to within fifteen leagues of Backing, has now thrown up many islands, and its mouth is so obstructed by a bar of sand, that the Chinese junks which trade to this country can no longer ascend the stream. The country is inundated and rendered fertile by the tropical rains, and thus yields ample crops of rice and other productions. Potatoes, yams, and other roots, fur­nish also a copious supply of subsistence. The usual tro­pical fruits abound, such as mangoes, lemons, cocoa-nuts, ananas ; and the most delicious oranges, as also the peach, the plum, the pomegranate, and the citron, are produced. The tea-plant is almost as common as in China, but not being attended with the same care, is not so valuable. The areca, the bctel, the indigo, the sugar-cane, also grow in these fertile plains. Vines have been planted, but the grapes do not come to maturity. Mulberry trees are plentiful, and supply food for silk-worms. The country also contains much large timber fit for building; beautiful cabinet woods, such as eigle wood, cocoa-nut, and other palms, bamboos, and rattans. There are mines of various metals ; and iron ore is procured in a state of great purity. It is also asserted that there are tin-mines in the mountainous tract towards China, the working of which is prohibited. Particles of gold are found in many of the Tunquin rivers, and salt and saltpetre are in great plenty and of good quality.

Among the wild animals to which the woods afford am­ple cover, are found the elephant, which is the property of the monarch ; and the buffalo, which is employed for agri­cultural purposes. Neither the sheep, nor the ass, nor the hare, nor the camel, is known ; but the hog and the goat are abundant. The horses are a contemptible breed. The rhinoceros is occasionally discovered, and tigers of the largest size are found. There arc bears of a diminutive species, and deer and monkeys of all sorts. The country is much infested with rats, and with reptiles and insects, some venomous, others innocuous. Fish are remarkably plentiful, and furnish the inhabitants with a greater supply of food than they derive from the terrestrial animals. In addition to the common sorts of fish, there are turtles, tor­toises, crabs, shell-fish, and moluscas, the substance of which is gelatinous, and greatly relished by the Chincse, however distasteful to European palates. Ducks and poultry are numerous, and very cheap.

The trade of Tunquin can hardly be described as very considerable, and it is chiefly carried on by merchants from China and Siam. The chief manufactures to be obtained at Tunquin are silks and lackered ware. The silks are both raw and wrought ; they are very beautiful and cheap, while the lackered ware is scarcely inferior to that of Japan. Gold may also be obtained in considerable quantity. Other ar­ticles of export are earthenware, drugs, Chinese paper, dyeing woods, musk, rhubarb, tortoise-shell, ginger, cassia, ebony, ivory, sugar, arid molasses. In the seventeenth cen­tury the Portuguese, Dutch, English, and French, had fac­tories in Tunquin ; but they have been long since abandon­ed. At present the Chinese experience greater favour than any other nation, and are allowed to ascend the rivers ; a privilege also granted to the Portuguese at Macao ; but nei­ther are allowed to establish factories on shore. In Tunquin there are reckoned to be twelve principal cities ; name­ly, Backing, or Keeho, said to contain 40,000 inhabitants ; Hanring, 15,000 to 20,000; Tranhac, 10,000 to 15,000; Causang, 7000 to 8000; Vihoang, a town on the river that passes through Tunquin, up to which the Chinese junks can ascend ; Hunnam, a town on the same river, containing about 5000 inhabitants. There are, besides, six other towns con­taining from 6000 to 7000 souls.

Tunquin is divided into ten districts, of which the central district, named Xunam, is by far the most populous, con­sisting of a vast plain, watered by numerous navigable streams, and in the density of its population resembling a Chinese province. We have no data for any accurate es­timate of the population of the country. It has been com­puted by a missionary at eighteen millions ; but this is pro­bably far beyond the truth. One tenth of the inhabitants are supposed, like the Chinese, to live constantly on the water. The Tunquinese, deriving their origin from the Chinese, are distinguished by a general resemblance to them in their language and manners. Their language is **a**