advisable to push on along the great north-eastern road to China ; and Négrier advanced about 30 miles towards Lang-son, captured a village there, and then returned to Bac-Ninh.

Meanwhile Brière de l’isle followed up that portion of the Bac- Ninh garrison which had escaped along the northern road in the direction of Thai-Nguyen. He captured the fort of Yen-Te, and marched on to Thai-Nguyen, where, as on so many occasions, there was a great display of martial ardour so long as the French were beyond firing distance, but the discharge of a few shells com­pletely discomfited the defenders, who fled out of the north gate as the French marched in at the south. As Brière de l’isle had posi­tive orders not to hold the town, he burnt some of the buildings, and evacuated it. The Chinese troops immediately returned, and again were driven out a month later, only to return again on the withdrawal of the French. Once more, however, a column was sent against the city, which on this occasion was burnt to the ground.

The whole of the lower delta was thus made secure in the hands of the French. Hung-Hoa (a town about 15 miles north-east of Sontay) and Tuyen-Kwan (a fortified place about 40 miles farther north) both fell before the invaders, but from both the garrisons escaped practically unscathed.

In the meantime Μ. Fournier, the French consul at Tientsin, had been negotiating for peace, so far as China was concerned, with Li Hung-chang, and on May 17, 1884, had signed and sealed a memorandum by which the Chinese plenipotentiary agreed that the Chinese troops should evacuate the northern provinces of Tong­king “ immédiatement. ” This expression was undeniably vague, and the French general in Tong-king, impatient of delay, in June dispatched Colonel Dugenne at the head of a strong force to occupy Lang-son. The expedition was badly arranged ; the baggage train was far too unwieldy ; and the pace at which the men were made to march was too quick for that scorching time of the year. They advanced, however, within 25 miles of Lang-son, when they suddenly came upon a Chinese camp. An irregular engagement commenced, and, in the pitched battle which ensued, the Chinese broke the French lines, and drove them away in headlong flight. This brought the military operations for the season to a close.

During the rainy season fevers of all kinds became alarmingly prevalent, and the number of deaths and of men invalided was very large. In the meantime, however, an expedition, led by Colonel Donnier, against the Chinese garrison at Chu, about 10 miles south­east from Lang-kep, was completely successful ; and in a battle fought near Chu the Chinese were defeated, with a loss of 3000 killed, the French loss being only 20 killed and 90 wounded. In the skirmishes which followed the French were generally victorious, but not to such a degree as to warrant any enlargement of the campaign.

The arrival in January 1885 of 10,000 men having brought up the force under Brière de l’isle to 40,000, he ordered an advance towards Lang-son. The difficulties of transport greatly impeded his movements, still the expedition was successful. On the 6th February three forts at Dong-Song, with large supplies of stores and ammunition, fell into the hands of the French. Three days’ heavy fighting made them masters of a defile on the road, and on the 13th Lang-son was taken, the garrison having evacuated the town just before the entrance of the conquerors. With his usual energy Négrier pressed on in pursuit to Ki-hea, and even captured the frontier town of Cua-ai. But Briere de l’isle had now to hurry back to the relief of Tuyen-Kwan, which had been attacked by a Chinese force, and Négrier was left in command at Lang-son. The withdrawal of Brière de l’Isle’s division gave the Chinese greater confidence, and, though for a time Négrier was able to hold his own, on the 22d and 23d of March he sustained a severe check between Lang-son and Thatke, which was finally converted into a complete rout, his troops being obliged to retreat precipi­tately through Lang-son to Than-moi and Dong-Song. Brière de l’isle reached Tuyen-Kwan on the 3d of March, and found the Black Flags and Yunnan braves strongly posted on the side of an almost inaccessible pass. After having sustained a succession of attacks for eighteen days, and seven actual assaults, the delight of the garrison at seeing Brière de l'Isle's relieving force may be imagined. It was while matters were in this position that Sir Robert Hart succeeded in negotiating peace between the two coun­tries. By the terms agreed on (April 6, 1885), it was stipulated that France was to take Tong-king under its protection and to evacuate Formosa. The Chinese undertook at the same time to expend 80,000,000 francs on the construction of roads in South China.

The future fortunes of the colony must depend greatly on the administrative ability of the governors selected to rule over it. The death of Paul Bert was in this respect a great loss to Tong-king.

See *France and Tong-King,* by J. G. Scott, 1885; *Tonkin,* by C. B. Norman 1884 ; *Tongking,* by W. Mesney, 1884. (R. r. D.)

TONGUE. See Anatomy, vol. i. p. 895, and Taste. TONNAGE, Register Tonnage, or International Register Tonnage, is the unit on which the assessment of dues and charges on shipping is based. The system at pre­sent in force is known as the Moorsom system. A register ton is 100 cubic feet of internal volume. Thus a vessel of 100,000 cubic feet of internal space within the points of measurements prescribed by the law is 1000 tons register. Vessels are sometimes bought and sold under this unit. The tonnage rules, which are very full and elaborate, are contained in part ii. of the Merchant Shipping Act, 1854, sections 20 to 29 inclusive, and in section 9 of the Merchant Shipping Act, 1867, the latter being a special section in reference to a deduction from the gross tonnage in respect of crew space, which space must be fit for the proper accommodation of the men who are to occupy it to entitle to such deduction. This enactment has led to great improvement in seamen’s quarters.

Section 60 of the Merchant Shipping Act, 1862, pro­vides on the point of international tonnage as follows :— “ Ships belonging to foreign countries which have adopted the British system of tonnage need not be remeasured in this country.” The British system has been adopted by the following countries at the dates named :—United States, 1865 ; Denmark, 1867 ; Austria-Hungary, 1871 ; Germany, 1873 ; France, 1873; Italy, 1873 ; Spain, 1874 ; Sweden, 1875; Netherlands, 1876; Norway, 1876; Greece, 1878; Russia, 1879; Finland, 1877; Hayti, 1882; Belgium, 1884; Japan, 1884. It is also under consideration by China.

There are slight differences in the rules for deduction for engine room in some of the countries, but owners or masters of foreign steamships, where this difference exists, may have the engine-rooms remeasured in the United Kingdom if they desire; in other words, their net tonnage may be reduced to exact English measure.

The British system was also mainly adopted by the International Tonnage Commission assembled at Constan­tinople in 1873, the rules of such commission forming the basis of dues levied on the ships of all countries passing through the Suez Canal. A special certificate is issued in the respective countries for this purpose. The main point of difference from the British system is with respect to the deduction for engine room.

There are three terms used in respect of the tonnage of ships,—namely, tonnage under decks, gross tonnage, and register tonnage.

In obtaining the gross measurement the space under the tonnage deck is first measured—sections 20 and 21 (1), (2), and (3) ; then the space or spaces, if any, between the tonnage deck (the tonnage deck is the second deck from below in all vessels of more than two decks and the upper deck in all other vessels) and the upper deck— section 21 (5) of Act ; and finally the permanent closed-in spaces above the upper deck available for cargo, stores, passengers, or crew—section 21 (4) of Act.

The allowance for engine room is governed by the percentage the net engine room—that is, the space ex­clusive of the coal bunkers—bears to the gross tonnage, and varies in paddle- and screw-steamers as laid down in section 23 of the Act.

In obtaining the tonnage under tonnage deck, ships are divided in respect of their length into five classes as follows :—·

Class 1. Length 50 feet and under into 4 equal parts.

„ 2. ,, 50 ,, and not exceeding 120 feet, 6 ,,

„ 3. „ 120 „ „ „ 180 „ 8 „

„ 4. „ 180 „ „ „ 225 „ 10 ,.

„ 5. ,, 225 ,, and upwards 12 ,,

The following is an epitome of the rule for tonnage under the tonnage deck :—

Length is taken inside on tonnage deck, from inside of plank at stern to inside of midship stern timber or plank ; the length so taken, allowing for rake of bow and of stern in the thickness of the deck, and one-third of the round of beam, is to be divided into the prescribed number of equal parts (which determines the stations of the areas), according to the length of vessel, as above.

Area 1 is at the extreme limit of the bow. Area 2 is at the first point of division of the length. The rest are numbered in succes­sion, the last being at the extreme limit of the stern.

Depths are taken at each point of division of the length, or station