threads of warp. Hemp and ramie arc occasionally used in the manufacture of this cloth, but flax and cotton are the chief fibres employed. Many of the sails of fishing smacks and similar vessels are made entirely of cotton—the fabric sometimes

SAIGO, TAKAMORI (1832-1877), Japanese patriot, was born in Satsuma in 1832. From early youth he took a prominent part in the politics of his clan, and owing to his extreme opinions with regard to the expediency of abolishing the Tokugawa administration, he was banished (1858) to the island of Oshima (Satsuma), where he attempted unsuccessfully to commit suicide. Ultimately he rose to high rank in the newly organized imperial government, but in 1873 he retired from the cabinet by way of protest against its decision not to take armed action against Korea. Thenceforth he became the rallying point of a large number of men dissatisfied with the new administration, and in 1877 he headed a rebellion which taxed all the resources of the central government. After several months of desperate fighting, Saigo and a small remnant of his followers made a swift retreat to Kagoshima, and fell fighting (September 14) within sight of their homes. Saigo’s patriotism and his great services in the cause of the restoration of the administrative power to the throne were so fully recognized that his son was raised to the peerage with the title of marquess, and his own memory was honoured by the erection of a bronze statue in Tokyo.

SAIGON, a town of French Indo-China, capital of the colony of Cochin-China, on the right bank of the river Saigon, 34 m. from the sea. Pop. (1905) 54,745, of whom 8749 were French (exclusive of troops), 152 Europeans of other nationalities, about 30,000 Annamese, 14,000 Chinese. The town is enclosed by the river Saigon on the cast, the Chinese Arroyo on the south and the Arroyo of the Avalanche on the north, while on the west it extends towards the neighbouring town of Cholon. Double rows of trees give shade in all the streets, the width and uni­formity of which, together with the beautiful gardens (including the zoological gardens), make Saigon one of the finest towns of the Far East. It is lighted chiefly by electricity and its water- supply is secured by a filtering reservoir. The chief public buildings are the government house, the palace of the lieutenant- governor of Cochin-China, the law courts, the theatre, the post- office and the cathedral. The commercial port, at the mouth of the Chinese Arroyo, carries on a large rice trade. The naval harbour comprises an arsenal and has a repairing dock.

Saigon is the seat of two chambers of the court of appeal of French Indo-China, of tribunals of first instance and of commerce, and of the vicar apostolic of Cochin-China. Its muni- cipal council consists of eight French and four native members elected by universal suffrage. This body elects a mayor and two assistants.

Before the French conquest, Saigon, then known as *Gia-dinh- thanh,* was the capital of Lower Cochin-China, which consisted of the “ six southern provinces ” of the Annamese empire, and constituted a vice-royalty under the government of a *kinhluoc.* In 1836 it was fortified for the emperor Gia Long by Colonel Ollivier. The French captured it in 1859, and it was part of the territory ceded in 1862.

SAIL, the English equivalent of the common Teutonic word for one of the two universal means of propulsion of a vessel through the water, the other being the oar (*q.v.*). For the various types of sail see Rigging, and for the textile material used see Sailcloth below. The origin of the O. Eng. *segl* or *segel* and its cognates, *e.g.* Dutch *zeil,* Dan. *seil,* Ger. *Segel,* &c., is not known; it is certainly not con­

nected with the Lat. *sagulum,* cloak, mantle. It may be derived from the Indo-European root *sagh-,* seen in Sanskrit *sah,* endure, the idea being of that which bears up against or resists the wind.

SAILCLOTH, now more commonly called canvas (*q.v.*)*,* usually a double warp, single weft fabric of the same structure as bagging (*q.v.*)*,* although it is sometimes made with single

retaining its natural colour, but more often dyed or stained tan. Since most of the larger vessels arc now driven by steam, the quantity of cloth used for sails is comparatively small. A large quantity of cloth, however, is used on steamships for covers, and for coal bags, sailcloth buckets, &c.

The very best kind of sailcloth is made from long flax, as this fibre possesses flexibility, lightness and strength combined. The number of threads per inch of warp varies from 14 double threads to 48 double threads, and from 12 to 36 shots per inch of weft, while the usual widths are 18, 24, 30 and 36 in. Cotton canvas has for its limits about 26 to 54 threads of warp per inch, and 15 to 46 shots per inch; the warp yarn for cottons may be 2, 3 or several ply.

Great care has to be exercised in the manufacture of canvas for the British Admiralty. The yarns must be made wholly from long flax, well and evenly spun, and properly twisted. They must also be free from blacks, and be twice boiled in order to remove all injurious matter. From the grey state to the cleaned state the yarns must lose 10% of weight, and no delete­rious substance whatever must be used in any stage. The mill washing and first boiling reduce the weight about 8%, while about 2% is removed during the second boiling. Finally, the yarn is thoroughly washed to remove all traces of alkali. The successive processes which the yarn is subjected to remove all impurities, and leave the yam in the best condition for weaving. Canvas is made in sixteen different qualities: the heaviest is No. 0000, then follow Nos. 000, 00, 0, 1, 2, 3, 4, 5, 6, 7, 8. 9, 10, 11 and 12. Of these sixteen varieties Nos. 1 to 8 are mostly in use. Nos. 1, 2, 4, 6 and 7 are used for royal navy canvas, and Nos. 4 and 6 for the merchant navy. The canvas for the Admiralty is 24 in. wide, and the pieces, termed bolts, should be as nearly as practicable 40 yds. of legal measure in length, and to be completely manufactured—particular attention being given to the weaving; the selvages to be evenly and well manufactured, the thrum to be left on each end of the bolt, and to be made as nearly as possible in the proportion of weights given below.

The breaking tests for red and grey canvas are 5% below those for whiîc canvas.

*Sailmaking* is a very ancient industry, but it is, naturally, much less important than it was before the introduction of steamships. The operations of the sailmaker may be stated as follows. The dimensions of mast and yards and sail plan being supplied, the master sailmaker is enabled to determine the dimensions of each sail—after due allowance for stretching—in terms of cloths and depth in yards—if a square sail, the number of cloths in the head, number in the foot and the depth in yards; if a fore-and-aft sail (triangular), the number of cloths in the foot and the depth in yards of the luff or stay and of leech or after-leech; if a fore-and- aft sail (trapezium form), the number of cloths in the head, number in foot, and the depth of mast or luff and of after-leech. These particulars obtained, there is got out what is technically termed a “ casting," which simply means the shape, length, &c., of each individual cloth in the sail. These figures are given to the cutter, who proceeds to cut out the sail cloth by cloth in consecutive order, numbering them 1, 2, 3, 4, &c.; the series of cloths thus cut out are handed over to the workman, who joins them together by care­fully made double flat seams, sewn with twine specially prepared for the purpose, with about 120 stitches in a yard. In the heavy

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Canvas  Number. | Weight of Warp. | Weight of Bolt. | Length of Bolt. | Reed. | No. of Threads. | Breaking Test for Warp. | Breaking Test for Weft. | Dimensions of Testing Strip. |
|  | lb. | lb. | yds. | Score. | Double. | lb. | lb. | in. |
| 1 | 26 | 46 | 39 | 16½ | 66o | 340 | 480 | 24 × 1 |
| 2 | 24 | 43 | 39 | 16½ | 66o | 320 | 460 | 24×1 |
| 3 | 22 | 40 | 39 | 16½ | 66o | 300 | 440 | 24×1 |
| 4 | 21 | 36 | 39 | 17 | 68o | 28o | 400 | 24×l |
| 5 | 19 | 33 | 39 | 17 | 68o | 260 | 370 | 24×1 |
| 6 | 18 | 30 | 39 | 17 | 68o | 250 | 350 | 24×1 |
| 7 | 15 | 27 | 40 | 20 | 8oo single | 330 | 390 | 24×1½ |
| 8 | 14 | 23 | 40 | 2o | 800 " | 310 | 380 | 24×1½ |

sails the seam is about 1½ in. in width, and in the British navy stuck or stitched in the middle of the scam to give additional strength; the seams in the lighter sails are about 1 in. wide. The whole of the cloths are then brought together, and spread out, and the tabling (or hemming, so to speak) is turned in and finished off with about 72