or brown teak. The following useful information as to the expense of both workmanship and material was obtained, in October 1832, from Captain Forzar, who was engaged in the Moulmein timber trade.

“ The head Birmah carpenter, Mistry, offered to supply and trim teak timbers all round for a ship of 400 tons, at four rupees each ; or to execute the whole of the work, as it re­gards the supply of carpenters, for 10,000 Sicca rupees, in­cluding joiners’ work for the hull, and the masts, yards, &c.”

“ The price of teak crooks at Moulmein was, lst sort large, to side about 12 to 15 in. 7 rup. each. 2d ditto middling, ditto 11 to 8 in. 3 to 5 rup. each.”

“ The 'Cashmere Merchant’ cargo (imported into Cal­cutta) cost at Moulmein in 1832,

From 15 feet { 1st sort large... 9 rupees each, to 18 feet { 2d do. middling 6 ditto,

in length. { 3d do. small 4 ditto.

“ Boat timbers, to side from three to six inches, and from four to seven feet long, cost from twenty to twenty- five rupees per hundred.”

The other kind of teak used in India for ship-building is the Java teak, of which considerable quantities were imported into Calcutta during the time the English governed that island. Of late years scarcely any lias been imported. The Java teak is of a very superior quality, and, judging from the state of the vessels built of it, it is nearly if not quite equal to Malabar teak.

All descriptions of teak, if sound, free from defects and from sap-wood, are proof against the white ants ; whereas all other descriptions of timber enumerated in this memo­randum are liable to the attacks of these insects.

Saul is a hard heavy wood. It is imported from Behar, Oude, and the inexhaustible forests that skirt the hills which form the northern boundaries of Bengal and Behar. It is used extensively in all Calcutta ships, for the timbers, beams, &c. It is of two kinds, the Goruckpore and Morung; the first is a most inferior timber, and goes rapidly to decay. An intelligent gentleman long engaged in the tim­ber trade of this country writes as follows. The forests situated to the east of the Coosey river, and to the west of the Teestan, produce the only good saul in India, which, like the elephant, deteriorates in quality the farther it is produced to the westward. The best timber is found at the foot of the hills, on a rocky ground. Sauls of large dimensions are now becoming exceedingly scarce, as the whole of the forests within a reasonable distance of the na­vigable streams are completely exhausted ; and every good timber must now be conveyed by land-carriage a journey of two days. A great part of the natives, and all the Euro­peans (with the exception of one gentleman), have given up timber cutting altogether. The great superiority of Morung saul over that produced to the west of these forests appears to have been but a recent discovery in Calcutta, though always well known to the native boat-builders. That found to the west of the Coosey river, for instance, Goruckpore and Bogah, being of a soft spongy nature, but little better than Mango wood, is now driven out of the market. The prejudice existing against the smaller timbers (dakar), on the ground of immaturity, would be done away with were it known that every fine tree produces a large and a small timber, the bottom the chakar, the top the dakar.

Good saul is inferior to the very fine description of sissoo which was used in Calcutta-built ships about thirty years ago. The best description of saul, if well seasoned, may be classed, in point of durability, with the best sort of African timber, now so extensively used by the ship-builders of Eng­land. The greatest care is necessary in the selection of saul for immediate use, on account of its requiring a long time to season. It is very heavy, and will not answer for any part of a ship exposed to the sun, as it shrinks very much. Saul continues to be used for the frame, beams, shelf-pieces, breast-hooks, and inside planking, of ships built at Calcutta.

Sissoo may be classed of two kinds, the dark and the light coloured. The first grows in the forests of the same districts where the best saul is to be found ; but it has be­come so very scarce for some years past, that it is now sel­dom or never brought to Calcutta, although scarcely thirty years have elapsed since the forests of the north-west dis­tricts of Behar, where the finest sissoo timber is produced, were pronounced to be almost inexhaustible. The other kind (the light) has been the only crooked timber of late years brought down the country for ship-building : it is de­cidedly an inferior sort of wood, very subject to the dry rot, and to the attack of white ants.

Jarrol is of two sorts, the red and the white. The red jarrol grows to a size fit for the largest ships, and may be obtained in any quantity near Chittagong ; at which place several fine ships have been built, some of which are now running, although from fifteen to twenty-five years old. They were built of red jarrol timbers, with Pegu teak plank. Jarrol is very extensively used in Rangoon-built ships, but of a mixed and inferior sort. Comparing the superior sort of jarrol with the best kind of sissoo or saul, it must be con­sidered an inferior wood in point of durability. White jarrol is very inferior, and never should be used in ship-building.

Poon is also of two kinds, the dark and the light. It is a wood that answers very well for masts, for which it is used; but it is perfectly unfit to be introduced into the hull, either as timbers or planks. The Malacca red poon is that of which masts and yards are made.

Toon should never be used for ship-building. It lias how­ever been introduced into several Cochin-built ships, and after five years has been found perfectly rotten. It is a porous open-grained wood ; and the only use it can be ap­plied to is for making furniture, for which it is extensively used in Calcutta.

Perhaps the best test of the durability of a Calcutta-built ship which can be cited, will be the Hastings of seventy- four guns, built there in 1818. The hull is composed of saul, sissoo, Pegu and Java teak, all of the best kind. So great was the expense incurred in the building of this ship, that when completed, the account, after giving credit for her freight, exhibited the cost of the hull for sea 11,63,754 Sicca rupees, or, ten rupees to the pound, L.1 16,375 ster­ling. It is usual in Calcutta-built ships to convert the frame, with the knees, breast-hooks, &c. from sissoo timber; the beams and inside planking being of saul, and the bot­toms, wales, topsides, decks, keels, stem, and stern-posts, of the Pegu teak.

*Results of'a Series of Experiments on the Elasticity and trans­verse Strength of different hinds of Timber. By captain H. c. Baher, Superintendent of Susρension Chain-Bridges in Bengal.*

The experiments, of which the results@@1 only are here recorded, were conducted, as nearly as circumstances ad­mitted, with similar apparatus to that used by Mr Barlow, and described in his treatise on the strength and stress of timber.

@@@1 The great extent of these experiments precludes the possibility of printing the whole of the results. In this article we have therefore con­fined ourselves to the averages which Captain Baker has deduced from them, and have merely stated in addition, the number of separate experiment from which these averages were shown. The experiments were made between the years 1827 and 1831.