TABLE II.

*Mean Results of Experiments on the Elasticity and Strength of Timber, selected from Her Majesty’s Dock-yard at Woolwich. Made by Professor Barlow.*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **.** | | |  | | |  |  |  | **Value of S from the Formula S = lW/4ad3**. \*\*\* |
| **Names of the Woods, and Dimensions of the Specimens.** | **Number of Experiments of which the Mean Results are given.** | **Specific Gravity.** | **Greatest Weight and Deflection while the Elasti­city remained perfect.** | | **Breaking Weight in Pounds.** | **Ultimate Deflection in Ιnches.** | **Value of *u* from the Formula U = l^3/d**Δ. \*\*\* | **Value of E from the Formula E = l^3W/ad3δ**. \*\*\* |
| **Weight in Pounds.** | **Deflec­tion in Inches.** |
| ***In specimens eight feet in length, two inches square, and seven feet*** |  |  |  |  |  |  |  |  |  |
| ***between the supports.*** |  |  |  |  |  |  |  |  |  |
| **Teak** | **3** | **745** | **300** | **1·151** | **938** | **4∙32** | **818** | **9657802** | **2462** |
| **Poon** |
| **3** | **579** | **150** | **·822** | **846** | **5·92** | **596** | **6759200** | **2221** |
| **English oak** |
| **3** | **989** | **150** | **1·590** | **450** | **5·90** | **598** | **3494730** | **1181** |
| **Ditto** |
| **3** | **934** | **200** | **1·280** | **637** | **8·10** | **435** | **5806200** | **1672** |
| **Canadian oak** |
| **3** | **872** | **225** | **1·080** | **673** | **6·00** | **588** | **8595864** | **1766** |
| **Dantzig oak** |
| **3** | **756** | **200** | **1·590** | **560** | **4∙86** | **724** | **4785750** | **1457** |
| **Adriatic oak** |
| **3**  **3** | **993**  **760** | **150**  **225** | **1·430**  **1∙266** | **526**  **772** | **5∙73**  **8∙92** | **610**  **395** | **3885700**  **6580700** | **1383 2026** |
| **Ash** |
| **Beech** |
|  | **696**  **553** | **150**  **125** | **1·026**  **1∙685** | **593**  **386** | **5·73**  **6·93** | **615**  **509** | **5417266**  **2799347** | **1556**  **1013** |
| **Elm** | **3** |
| **Pitch-pine** |
| **3** | **660** | **150** | **1·134** | **622** | **6·00** | **588** | **4900466** | **1632** |
| **Red pine** |
| **3** | **657** | **150** | **·755** | **511** | **5·83** | **605** | **7359700** | **1341** |
| **New England fir** |
| **3** | **553** | **150** | **·931** | **420** | **4∙66** | **757** | **5967400** | **1102** |
| **Riga fir** |
| **3**  **3** | **753**  **738** | **125**  **150** | **·870**  **·883** | **422**  **467** | **6·00**  **6·00** | **588** | **5314570**  **3962800** | **1108 1051** |
| **Ditto, six feet long between supports** |
| **Mar Forest fir** | **588** |
| **3** | **696** | **125** | **1·442** | **438** | **6·00** | **2581400** | **1144** |
| **Ditto, six feet long** |
| **3** | **693** | **150** | **1·006** | **561** | **6·42** | **403** | **3478328** | **1262** |
| **Ditto, ditto.....** |
|  | **703** | **150** | **1·006** | **561** | **6·42** | **403** | **3478328** | **1262** |
| **Larch** |  |
| **531** | **125** | **1∙885** | **325** | **8·58** | **411** | **2465433** | **853** |
|  |  |
| **Ditto, six feet long** |  | **522**  **556**  **560** | **125**  **150**  **150** | **·812 ·831**  **·831** | **370**  **501**  **510** | **5∙00**  **5·00**  **5·00** | **518**  **518**  **518** | **3591138**  **4210830**  **4210830** | **832**  **1127**  **1149** |
| **Ditto, ditto** |  |
| **Ditto, ditto** |  |
| **Norway spar** |  |
|  | **577** | **200** | **·800** | **655** | **4·00** | **648** | **5832000** | **1474** |
|  |  |

*On the Woods of British Guiana.*

In Table III., which is the classification of timber adopted by the Committee of Lloyd’s Register Book of British Shipping, there are two sorts mentioned as timber of the first quality, which are yet little known in this coun­try in private building yards, and not at all in our public establishments. These are greenheart and morra. They are both the produce of British Guiana, a colony that will in all probability ere long be a chief source from which this country will draw her supplies of naval timber. The territories of the colony have never yet been clearly de­fined. Its extent has been variously stated, by some as not much exceeding 12,000 square miles, by others as extend­ing over an area of 76,000 square miles. It is situated al­most immediately under the equator, and has consequently the vigorous and luxuriant vegetation inherent to such regions. The forests of the interior are said to be of im­mense extent, and abounding in valuable timber trees. Among these are, the morra, which nearly resembles in ap­pearance the best African oak ; the simiri, or locust, a wood well known in England ; and the siperi, or greenheart, so called from a peculiar green tinge which the timber has when cut with a tool. There arc many other valuable timber trees, both for building and for ornamental work ; but these perhaps are the most important to notice here.

The morra may be obtained easily to square twenty inches, and the logs run from thirty to fifty feet in length. It is said not to be susceptible of dry rot ; but there can hardly yet be sufficient experience of it when combined in the masses of timber to be found in large ships to establish this important point as indisputable. If it be as similar in its qualities as it is in its appearance to African oak, it cer­tainly can claim no exemption from the attack of dry rot. The trees grow to a great height ; and although the trunks are ge­nerally straight, the branches afford good compass timber.

But the most important timber produce of British Gui­ana is the greenheart. It is a hard close-grained wood, having, like teak, an oily feel to the touch. Its specific gravity is about equal to that of African oak, but it is de­cidedly superior to it in strength, toughness, and durability. These, however, are not its chief advantages : its great va­lue consists in its being completely exempt from the attacks of worms. It is on this account used in Demerara for sluice-gates, piles, and all marine engineering works which would be exposed to their ravages. Experiments of a most con­clusive nature as to its really resisting these insects have been made in this country. The port of Liverpool is much infested with worms, and the wood-work of the docks there is constantly destroyed by them. Clows of greenheart tim­ber have now been down upwards of seven years at the west entrance of the Brunswick half-tide basin, and are as yet untouched ; while experience has proved that clows of other timber in the same situation would have been destroyed in less than half that time.

This is a most important quality, and renders this timber invaluable for marine engineering works. It is imported in logs of from twelve to sixteen inches square, and from twenty to forty feet in length. It is exceedingly hard, and difficult to work as planking, although latterly some colonial vessels have been planked with it. There is another Gui- anian timber, the siruaballi, of a softer texture, and much used for planking, as it is also said to be able to resist the ravages of the worm.