TABLE IV Concluded

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1**  **o pi** | ’S  ■  1  aβ  ί  ∣≡  •z β  o. ⅜J | | ! 5  1≡  **ι-\*-> o .**  **4>**  **B S a**  **«s ——**  **ω** | | **C ®**  1"  ?»  **0)**  i≡⅛≡  **S o**  -h  ≡⅛r∙ ε∙≡≡ ⅛ | | | **CM**  **·©**  **H**  **B**  **o**  **Q , w-O <e o**  **E ξ**  **©** | | **9> (0**  ⅛i **to**  **£-3 i"'**  **rtι a.**  ***≡ \*-i***  1μl | | **c**  **1**  **& ►»** | | **h**  **1**  **8**  **»**  **"rt \*5**  **\* 3**  **= ≡ ■c §**  **C «a**  *P-* | | **1 i**  **&. o**  ***"o***  s  **E**  **o**  **⅛** | |
| ⅛ | **3 a** | ***ô.* o h** | | **s n** | **o. o b** | **3 ffl** | **à o H** | **9**  **K** | £ | **3 Ö** | ***â. o* b** | **J**  **3**  **S3** | **'d.**  **o H** | **3 e** |
| **b** | ώ |
| **1. o**  ⅛=⅛ | s« | **c>** | **CM** | **'S·** | **o** |  | **CO** | **eo** | **to** | **2** | **«** | **«** | **O** |  | **CM** | **-** | Ξ |
| **o** | S 8 | S | s | **CM** | a |  | s | **i" CM** | 8 | **R** | 8 | s | 8 | s | **S** | ***s*** | S |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **≡⅛ε** | **O** | **o** | **9** | **o** | **o** |  | **o** | **O** | **9** | **9** | **9** | **o** | **O** | **o** | **o** | ***o*** | **©** |
|  | **tb** | **tb** | **to** | **to** | **tb** |  | **to** | **CO** | **to** | **to** | **to** | **tb** | **tb** | **tb** | **tb** | **to** | **CO** |
| 5,≡- | **e«** | **CI** | **CM** | **e»** | **CM** |  | **CM** | **Cl** | **CM** | **Ct** | **e<** | **c∙1** | **CM** | **CM** | **CM** | **CM** | **CM** |
| u x: | SS | S’ | s | **-\*r** | S |  | ≡, | s· | **??** | **»sw** | 3, | tF | **CM** |  | **JT** | **→1 CM** |  |
| **o**  **⅛** |  | **«r** |  | **∙β** | **«** |  | **w** | **05** | **w** | **co** | **\*** | **eo** | **Nf** | ***n*** | **CO** |  | **\*** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **f≡,8**  Sc 5 | s | o τ | ≡ | I | **o** s |  | s | **S** | ≡ | S | **d** | 3 |  | S |  |  | ⅛ |
| ≤⅞≡ ***S*** °∙S | **to**  **3** |  |  | **•i a** | **ti**  **3** |  | ? | 5 | ? | **u**  **3** |  | **5** | 5 | **te**  **3** | **to**  **5** | $ | **to**  **3** |
| ◄ | < |  | *<* |  |  |  | < |  | **<** | ◄ | *<* |  | ***<*** |  |  | ◄ |
| S  .s≡  la |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **to** | **to** | **to** | **to** | **to** |  | **to** | **to** | **to** | **to** |  | **CD** | **to** | **to** | **to** | **to** | **to** |
|  | **X** | **X** | **X** | **X** | **X** |  | **X** | **X** | **X** | **×** | **X** | **×∙\*** | **X** | **X** | **X** | **X** | **X** |
| **Q** | **X** | **X** | **X** | **X** | **X** |  | **X** | **X** | **X** | **×** | **×** | **X** | **X** | **X** | **X** | **X** | **X** |
|  | **to** | **tp** | **to** |  | **to** |  | **to** | **to** | **to** |  | **to** | **to** |  | **to** | **«** | **«** | **CO** |
|  |  |  |  |  | **r—■** |  |  |  |  |  |  |  |  |  |  |  |  |
| .5∣ | **0**  ■? | **Ô** | ⅞ | s | •sIg h i | | **o** | s | **o** | **ό** | **5** | **έ** | 3 | J | **ô** | **s**  **s** | S Λ |
|  | <3 | δ | s | 2 | o |  | **â** | ci | 5 | **Q** | a | Ô | **□** |  | 5 | PM | Q |
| **Ô Z** | **cs** | 8 | **s** |  | 5 | | s | **\*5**  **O«** | **s** | **s** | **s** | 8 | 3 | **£** | s | i? | |s |
|  | S | |  |  |  |  |  |  | Έ |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | **J=** |  |  |  |  |  |  |  |  |
|  | **"3** | |  |  |  |  |  |  | 7 |  |  |  |  |  |  |  |  |
|  | ≡ | |  |  |  |  |  |  | 3 |  |  |  |  |  |  |  |  |
|  | **«2** | |  |  |  |  |  |  | ***c*** |  |  |  |  |  | **J** |  |  |
| **1**  **B**  **■** | 8 h n | | **ο** | | **<** |  | **©** | | **> à β ⅛** |  |  |  |  |  | **’S**  *u*  **N h** |  |  |
|  |  |  |  |  | 2 |  | c |  | **tβ**  **E** |  |  |  |  |  | **V**  **S5** |  |  |
|  | **fi. o H** | **3**  **S3** | **H** | **\*5**  **3 a** | **e. o b** | **3 »** | **§· b** |  | **a**  **S** |  | **Q** | **2** |  | **δ** | **E £** |  | Q |
|  |  |  |  |  |  |  |  |  |  | | **r\*\*\*>** | **V\*—.** | | **H\*—I** |  | |  |
| **4\*.⅛** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Weigh of a Cub Foot.** | **o®** | **αθ** | © | **to** | **\*** | **O** | **CO** | **to** | **x>i,** | | **Cl 3?** | **— ir** | | «O | cm’ | S’ | »s |
|  | 3 | 3 | **t»** | **N?** | S | **-** | s | S s | | 33 | **.5** | | SS | 93 | | S3 |
| **>. u .** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **∙∏≡ δ** | **o** | **o** | **o** | **o** | **O** | **o** | **o** | **o** | **Or-** | | **c »-** |  | | **O?1** | **O i®** | | **O CM** |
| 3⅛ | **to**  **CI** | **tb**  **«5** | **to s** | **to**  **S** | **tb S** | **tb**  **eî** | **to**  **ëi** | **ώ**  **S** |  | | gg | s |  | ssæ r~∙β | s | **5** | 5S |
| ***Λ***  **M** | **ι>i \*τ**  **O\*** | **■o** | **«** | Ξ | s | **O** | 3· | s | **«** | **?** | **»o** | **-\*** | 2 | **eot-** | **•n w** | | o? |
| **⅛** | i’ |  |  |  |  |  |  |  |  |  | 33 | **■\* -7** | | S3 | **on** | | **« 00** |
| **-3** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| o ∙s"Si | **o** | s  **00** |  | S | s  **00** | **§** | © s | **e**  s |  | **»** | ***i*** | S | **i** |  | § | **i** | ≡ |
| **s⅞≡** | **t<5**  **3** | **e⅛ o** | **ώ ≡** | **û.**  **3** | ? | **te**  **3** | s | **ώ**  **3** |  | **?** | **g** | **g** | **3** | s" |  | **»**  **3** | **CK**  **3** |
|  | -< | ∙< |  | **■<** |  |  |  | -< |  | **<** | **∙<** |  | |  |  | < | ◄ |
| **c** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | **s** | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | **s** |  |  |  |  |  |  | **oo** |
| **i-** | **to X** | **to**  **X** | **to X** | **to**  **X** | **to X** | **<o**  **X** | **to**  **X** | **to**  **X** | **×**  ×oo | | ***— <n* ×r Ol —** | **- ×**  **X« en —** | | **Xoo CM —** | **0>**  **to ⅛**  **XX** | | **to X X?** |
| a | **X co** | **× to** | **«o X to** | **X to** | **Ό**  **X to** | **<o X to** | **to X to** | **co**  **X to** | **to ∙n X X to to** | | **XX**  **Ol -N** | **XX**  **C∙< <M** | | **XX**  **fl 71** | **X X**  **CM CM** | | **XX**  **CM CM** |
|  |  |  |  |  |  |  |  |  |  | | **—ν'** | **'-V'** | | **L—w»** |  | | **—ν'** |
| **I∣**  ***vr*** | B  **«**  **Q** | **I**  **Q** | **□**  **Q** | â  2 | **o**  **Q** | **2**  **Q** | **d**  ä | **o**  **Q** | **4Î**  **β ⅛ τ *X*** | | **≤ c *ύ***  **>** | **C**  **C** |  | ***£ a"*** | **«**  Μ  *3* | | **Ô**  â |
| **Ö** | s | s | **s** | **R** | R | **o** | **-** | **e»** | **c∙** |  |  | **•o** | | **to** | *b»* | | **oo** |
|  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |

“ In the above table, the first weight of each specimen was taken within or shortly after one year of the felling of the tree. This is to be generally understood, unless otherwise expressed.

*Remarks.*

“ Few authors agree as it respects the weight of various species of timber in a seasoned and in an unseasoned state. This diversity of opinion often arises from an indefinite use of the terms ‘ seasoned,’ and ‘ unseasoned and we need not be surprised at these seeming contradictions, when we remember that many other words which denote the state or condition of bodies, are equally indeterminate. Thus, when we speak of heat and cold, light and darkness, mois­ture and dryness, we may naturally inquire what diminu­tion of heat occasions cold, what decrease of light causes darkness, or what absence of moisture constitutes dry­ness. Hence, generally speaking, the word ‘ seasoned’ im­plies a relative rather than an absolute state of the wood. To prevent as far as possible any ambiguity on the subject, the dates and circumstances under which the wood was placed are carefully recorded, by which means the reader may form his own conclusions respecting the gradations of weight at intervals of time varying from one to twenty years. It should be understood, that large masses of timber, even if placed in dry situations for many years, in buildings or ships, would have their specific gravity diminished if cut into small portions. This will be manifest, if the reader refers to those specimens in the table which were taken out of a ship of war, the Marlborough.

“ It occasionally happens that the specific gravity of tim­ber is increased instead of being decreased by seasoning. This occurs when the shrinkage diminishes in a greater ratio than the weight. See No. 75 and 78.

“ Shrinkage rarely takes place in the direction of the length of timber ; when it does so occur, it seems to arise from a want of uniformity in the direction of the grain ; for in­stance, when the wood is ‘curly’ and knotty. Independently of the length, the greatest shrinkage is in a direction at right angles with the ‘ silver grain the least in the direction of the plane of the ‘ silver grain.’ Hence, when the heart of the tree is in the middle of the wood, so that the silver grain radiates from the heart to the exterior, there is no greater tendency to shrinkage in the one than in the other direction.

“ In those cases in which the specimens are known to be tops and buts of trees, they are so distinguished ; otherwise they must be supposed to be indiscriminately taken from the top, but, or middle of the trees. It is a generally-received opinion, that the but of English and other oak is heavier than the top ; still men of great eminence differ on this subject. The view of Du Hamel may probably partly ac­count for these conflicting ideas. He asserts, that in healthy vigorous trees, the but is heavier than the top; but that in trees past their maturity and on the decline, the top is heavier than the but. Whatever deference may be due to this opinion, an analysis of the facts contained in our table will show, that another cause materially affects the condition of the question, which is the hygrometrical state of the specimens subjected to experiment ; for it is an in­teresting fact, which will be presently verified, that the but of a tree may be of greater, of equal, or of less specific gravity than the top, according as each is more or less ad­vanced to a state of seasoning.

“ Among others, the following results are derived from the foregoing table.

“1st, The average weight of a cubic foot of unseasoned English oak, derived from twenty-seven specimens, viz. No. 9 to 35 inclusive, is 1000 oz., or 62 lbs. 8 oz.

“ 2d, From the same specimens the average weight of a cubic foot of English oak allowed to season during the space of from thirteen to twenty years is 45 lbs. 9 oz.

“3d, Among the above twenty-seven seasoned specimens,