Proceedings of the Madras ...nment, Revenue Department,
17th November 1871.

No. 171. Read the following letter ...he Secretary to the Government of India, Department of Agricu... Revenue, and Commerce, (Forests,) to the Secretary to the Gov... t of Madras, Revenue Department, dated Simla, 31st October 187... 2-C. :—

I AM directed to forward the accompanying copies of two memoranda by the Officiating Inspector-General of Forests and the Consulting Engineer for State Railways on the subject of seasoning planks and timber generally, and to request that, with the permission of His Excellency the Governor in Council, the Government of India may be favoured with any remarks or suggestions by officers competent to give an opinion on the subject.

ENCLOSURE No. 1.

Memorandum by Major G. F. PEARSON, Officiating Inspector-General of Forests, on seasoning of planks and timber generally, dated 29th July 1871.

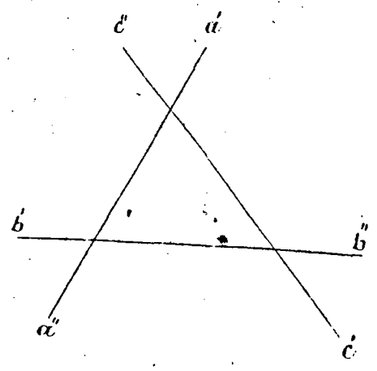
As much inconvenience and loss are continually resulting from the cracking of timber, especially in planks, sleepers, and other small scantlings, the Officiating Inspector-General of Forests desires to offer a few hints on the subject collected from information kindly supplied by Messrs. Dykes & Co., and Lazarus & Co., Calcutta, and the officer in charge of the Carriage Department of the East Indian Railway, all of whom, in the daily practice of their profession, have to deal with timber when cut into planks and other small scantlings.

2. It is generally considered by practical men that the thicker the plank the less liable it is to split, and that, under similar conditions, a 1½-inch plank is stronger in this respect than a 1-inch plank ; there seems, however, to be no absolute certainty on this point, and there is some difference in the opinion of practical men about it. It is, however, allowed on all hands that the denser the wood the less liable it is to split, *e.g.*, teak is less liable to split than deodar or any of the firs. Opinions differ as to the advisability of applying artificial methods, such as boiling or steaming, to hasten the process of seasoning. If such should be employed, steaming is said to be preferable, and in all cases, where either plan is used, the planks must be dried very slowly for some weeks, or even months, under cover, in a place airy, but not exposed to the sun. It is recommended that, if time will allow, the planks should be allowed to pass through a rainy season after boiling or steaming, packed on edge, so that the rain may run freely through them ; and it is said that confidence might be felt in planks which have gone through this process.

3. But, if possible, the logs should be seasoned before they are cut up into planks, sleepers, or other scantlings. To this end it is advisable that they should, where possible, be immersed in water for a year as in England, and then allowed to dry in the open air and, if practicable, in the shade as long as possible previous to being sawn up. Logs if cut up into planks when still green *must split*, and for this reason, *viz.*, that the wood, which is composed of laminæ of hard woody fibre with soft matter between, is suddenly, by the process of sawing, exposed to the air, and dries and contracts too quickly, thereby causing a split first at each end, but soon extending all through the wood, which also warps and loses its shape in a very short time. It is on this account that a regular and gradual process of drying is necessary, and the first thing is to get the sap out of the wood ; but this is not enough, for there is an inherent dampness in the wood, which remains after the sap is withdrawn, and renders it liable to split.

4. The following simple plan is recommended for seasoning logs. For logs of moderate bulk select a good tree standing, and round it range the logs in the form of a pyramid with their butts downwards, and their tops resting against each other, taking care that the tops only touch, and that sufficient spaces remain between the logs for the air to pass freely between them. If the tree can be got on the summit of a small mound, with the ground inclining from the tree to some distance,

and the locality a dry one, ...much the bette... The logs should remain standing thus for 10 or 12 months. But if the logs are too heav... this to be done, let the upper end of each log be raised 4 feet from the ground, in which ca... must be left uncut for at least 18 months in place of 10 or 12 months. At the end c... above period the logs may be cut up and stacked horizontally thus :—



a' rests on the ground.
a'' on b'.
b' on the ground,
b'' on c',
c' on the ground,
c'' on a',

the thickness of a plank would thus be the space between each plank. The stacks might be built 10 or 12 feet high, thus giving in each stack about 220 planks 1 inch thick. A rough shed or covering should be put over the stacks, if possible.

5. The planks or sleepers should stand thus for another 8 or 10 months, and then will be fit for use, but nearly every plank will be found to have split at each end for about 18 inches or 2 feet, and the split end ...uld, if desired, be cut off, when no further split will usually take place.

6. A little discretion ...d be used in cutting up the logs ; for instance, the smaller ones should be cut up first, a... larger ones allowed to stand the longest ; and it will be found convenient, where possible ... rrange the stacks according to size of the logs.

7. It is the opinion ... eminent engineer, that impregnated timber is less liable to split than unimpregnated timbe... nd that it would be well to place the planks in an exhausting cylinder and impregnate th... th sulphate of copper, creosote, or petroleum. For soldiers' cots the latter might be objecte... account of the smell ; but it would probably be very good in a sanitary point of view.

8. The following sim... lan is recommended for trial :—

Paint the ends of ... ogs, sleepers or planks, with a solution of lime and muriatic acid, which must ... newed as it becomes washed off : the principle being that the composition ... s moisture from the atmosphere to the surface of the wood and prevents th... rom cracking.

Coarse muriati... may, it is believed, be easily procured at the Chemical Works, Hastings' ... et, Calcutta, at a low price.

ENCLO... 2.

randum by G. C. MOLESWORTH, Esq... ig Engineer for State Railways, on season-ing of planks and timber g... ated 31st July 1871.

AM of opinion that thick planks are quite as likely to split as thin planks. I am inclined, re be any difference, to give the preference to the *thin* ; but much will depend upon the ions to which they are exposed.

he most important precaution is to allow them to season in the log as long as possible, e conversion into plank.

. Teak is not so liable to split as deodar ; but my experience is *totally at variance* he opinion expressed, that the density of woods has any influence upon the liability to split. are many woods of the greatest density which split readily, whilst some woods of compara-little density do not exhibit any such tendency, or, at all events, exhibit it in a far less e. Much depends on the peculiarity of the grain, the disposition of the fibres and the ty of some portions to shrink more than others under certain conditions. Jarrah, which I e is slightly *more* dense than Moulmein teak, is the worst wood for splitting that I have met with, and Johore teak, which has a density very far in excess of Moulmein teak, is much liable to split.

he great causes of splitting are sudden but partial drying, exposure of one side to hot sun ry winds, whilst the other side remains uninfluenced. I believe that half-immersion has a effect on the timber, one-half being saturated, the other being exposed to a hot sun. sure to the sun after long immersion, I believe, to be also a fertile source of splitting. *Split* r will crack less than *sawn* timber, and roughly squared timber less than round timber.

3. I think that natural seasoning is the best when it can be employed, but when rapid ning is required, I prefer the "desiccating" process to any other. It is, however, somewhat nsive ; but near the forest where waste timber is very plentiful for fire-wood from lopping slabbing the trees, it might perhaps be adopted with economy ; at all events, I think, it is h a trial.

The timber is placed in a chamber, and heated air, at a temperature of 140° or 150° Fahr., ssed through the chamber at a rate of about 100 feet per second, sufficient air being ted to displace all the air in the chamber in three minutes ; that is, the volume of air per te should equal one-third of the volume of the air in the chamber. The time of desiccation out one week for every inch thickness of the wood.

If the desiccation were tried I should be disposed to give the log a short natural seasoning, subject it to partial desiccation, and afterwards cut it up into planks, and complete the cation in that form.

4. It is better to bark in spring and fell in winter. I should be inclined to roughly re the logs when felled and to prop them up with the butt downwards, in a sloping position, tly out of the perpendicular.

Generally when the logs are felled the butts are not quite square but pointed. I should be ned to have this pointed end, and, if possible, let the log, whilst seasoning, rest on the pointed so as to let as many of the pores as possible draw air instead of drawing moisture, as they do n resting on damp ground : if practicable, the point should rest on a stone or other hard tance. (See Plate A).

The plan proposed for seasoning planks appears to be open to objections ; but there may be liarities of this climate which render it desirable to adopt such a system ; it appears to be ested by one possessing great practical experience. The objections to the plan appear to me , *first*, that the wood is too much in contact with wood, and, *second*, that it is not placed in

the most favourable position for seasoning, [illegible]ich, in my opinion, should be *sloping as near to the perpendicular* as possible, and with th[illegible]utt (*i.e.*, the portion of the plank which originally was at the bottom of the tree) downw[illegible]. In the plan proposed the timber is laid flat or nearly so, and has four points of contact.

I am rather in favour of stacking plan[illegible] seasoning as shown in the accompanying sketch, with small distance pieces to keep each p[illegible] from contact with the other as much as possible (See Plate B).

The edges *A. A.* should face the prevailing dry winds, but should be not too much exposed. I think it would be well to try a stack of this kind against a stack of the character proposed, and see which turned out the better planks.

Plate B.

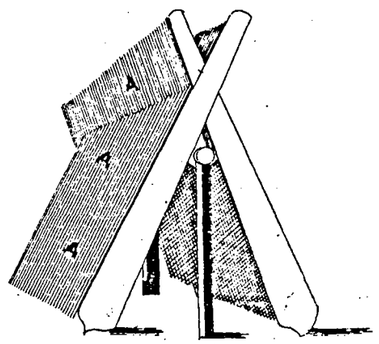
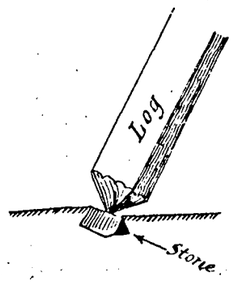


Plate A.



No. 172. ORDER THEREON, 17th November 1871, No. 1,960.

Forests, No. 2.

REFERRED to the Conservator of Forests and to Lieutenant-Colonel Michael for their remarks.

2. Communicated to the Department Public Works in view to opinions being called for in that department.

(True Extract.)

(Signed) W. HUDLESTON,
Secretary to Government.

To the Conservator of Forests.
„ Lieutenant-Colonel J. Michael.
„ the Public Works Department.
„ the Military Dept.

Exd. F. R. Bantleman.

No. 1960

Rep[d] to Lieut. Col. Michael for his remarks.

Comm[r] & the Sec[y] to G.I. in view to my opinions being called for in that department.

17 November 1871

To the Commissioner of Revenue, Accounts &c
Lt Col J Michael
the Chief Engr
the Inspector Genl for Communications
the Supt Govt Cattle Breeding Farm
dated 29 Nov 1871

No 171–172

H. 52

From

The Secy to the Govt of India
Dept of Agrie &c

Dated 31 Oct
Rec[d] 8 Nov[r] 1871

No 52C

Dispatch

I ha[ve]

Your m[emo] dated 8

For[warding]

Forwarding copies of memoranda on the subject of seasoning planks and timber generally, and requesting any remarks or suggestions my officers competent to give an opinion on the subject.

No 1960 - 17 November 1871

W. H. L.

Proceedings of the Madras Government, Revenue Department,

18th November 1871.

No. 178. Read the following letter from the Acting Secretary to the Board of Revenue, to the Secretary to Government, Revenue Department, Fort St. George, dated Madras, 2nd October 1871, No. 4,204:—

WITH reference to Government Order No. 969, dated 30th June 1870, I am directed to call the attention of Government to an advertisement which appears in the *Athenæum and Daily News* of date 21st September 1871, from which it is clear that a trade in Watches sent by Post in order to avoid the duty is fully established.

No. 179. ORDER THEREON, 18th November 1871, No. 1,964.

Separate Revenue, No. 11.
Customs.

ORDERED to be communicated to the Government of India with reference to previous correspondence on the subject.

(True Extract.)

(Signed) W. HUDLESTON,
Secretary to Government.

To the Board of Revenue.

Exd. F. R. Bantleman.