

as have come to hand, and to see how far they indicate a general law.

Theoretical considerations lead us to infer that if there is any variation at all, the hydration of the structure must be greatest during the period of active growth, and least during the period of rest. How far this is supported by the facts, will appear in the following.

HYDRATION OF DEAD WOOD.

Incidentally to the main question, specimens of dead wood, devoid of the bark, and representing an age of four to six or eight years, were collected and the moisture determined. While the branches were dead, none of them were in advanced stages of decay, so that the contained water could not be regarded as that of active decomposition, but simply that which would be readily retained in the lifeless, air-dried substance as exposed on the tree. The results obtained from fifteen species of trees showed an extreme variation of 6.4 per cent., the range being from 12.9 per cent to 19.0 per cent. of water. The mean hydration obtained from these determinations, was 15.1 per cent. The results appear in the following table:—

HYDRATION OF DEAD WOODS.

Determined at 100° C.

SPECIES.	PER CENT. WATER.
<i>Acer saccharinum</i>	18.8
<i>Amelanchier canadensis</i>	19.0
<i>Betula alba</i>	15.1
<i>excelsa</i>	15.9
<i>lenta</i>	13.7
<i>Carpinus americana</i>	13.8
<i>Castanea vesca</i>	14.0
<i>Cydonia vulgaris</i>	12.9
<i>Cornus sericea</i>	13.6
<i>Pinus strobus</i>	11.9
<i>Pinus malus</i>	12.9
<i>Prunus serotina</i>	17.4
<i>Quercus alba</i>	15.5
<i>Tsuga canadensis</i>	18.6
<i>Ulmus americana</i>	13.5
MEAN.	15.1