

The outer bark of the cork tree and the cuticle of many if not all other plants consists of a highly carbonaceous matter to which the name of Suberin has been given. Carefully examined the spores of Lycopodium also approach to this substance in composition as will be seen by the following one of two analyses by DuRoi.^{*} For comparison it is ~~given~~ ~~along side of~~ ~~an~~ ~~the~~ ~~the~~ ~~an~~ ~~analysis~~ ~~which~~ ~~represents~~ ~~the~~ ~~composition~~ ~~of~~ ~~pure~~ ~~cellulose~~ ~~or~~ ~~woody~~ ~~fibre~~ along side of which we give the theoretical composition of pure cellulose or woody fibre according to Payen & Mitscherlich & an analysis of the suberin of cork from Quercus robur, from which the ash and 2.5 percent of cellulose have been deducted.[†]

	Cellulose.	Cork.	Lycopodium.
Carbon	44.44	65.73	64.80
Hydrogen	6.17	8.33	8.73
Nitrogen	...	1.50	6.18
Oxygen	49.39	24.44	20.29
	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>

This difference is not less striking when we reduce the above centesimal analyses to correspond with the formula of Cellulose, $C_{24}H_{20}O_{20}$, and represent them to cork and Lycopodium as containing twenty four equivalents of carbon. For comparison I give the composition of a specimen of peat, brown coal, lignite & bituminous coal. It will be seen from this comparison that in ultimate composition cork & Lycopodium are nearer to lignite than to woody fibre and may be considered as coal with far less loss of carbon & hydrogen than the latter. They are in fact ^{approach close} nearer to ultimate composition to resins & fats than to wood and moreover like these substances, repel water, with which they are not easily moistened & thus are able to resist these atmospheric influences which effect the decay of woody tissue.

J. Stern Bunt

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The difference in carbon content when we reduce the above...
 comparison with formulae of Cellulose, Carbohyd., and...
 obtain a constant weight for equivalent of carbon. The comparison gives the...
 composition of a specimen of Cellulose. It will be seen from the...
 specific determination. It will be seen from the...
 comparison that in ultimate composition Cellulose...
 hydrogen we need to ignite in woody fibre and...
 may be somewhat and with further loss of carbon...
 hydrogen than water. There is in fact...
 ultimate composition to be in fact...
 and moreover, like the substances, Cellulose, which...
 they are made of, have a certain influence which...
 of woody tissue.

A Hunt
 June 11

Carbon	44.14	42.73	44.80
Hydrogen	6.17	8.33	8.73
Nitrogen	...	1.20	0.18
Oxygen	49.89	47.94	46.29
	100.00	100.00	100.00

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