

	Carbon.	Hydrogen.	Oxygen.	Ashes.
Coal from sugar,	66·84	4·73	28·43	
“ “ starch,	68·48	4·68	26·84	
“ “ gum arabic,	78·78	5·00	16·22	
Blanzy coal,	76·48	5·23	16·01	2·28

He was induced to experiment on these three substances because, according to Ad. Brongniart, they must have abounded in the vegetables which produced the coal beds, and because gum often comes from the transformation of tissues, as Trécul has shown.

Further experiments led him to the dominant hypothesis that vegetables are first changed into peat, and that, in that form, the disappearance of the organized tissues is due to a kind of turfy formation, as Van Tieghem suggested. He then operated on three kinds of ulmic acid: 1, acid which he had himself extracted from peat; 2, saccharumic acid, which he obtained from M. P. Thenard; 3, ulmic acid extracted by treating vasculose by alkalis. They were all transformed into substances similar to the foregoing, under the combined influence of heat and pressure, as is shown by the following analysis:

	Carbon.	Hydrogen.	Oxygen.
Coal from peat acid, heated 24 h.,	67·48	5·84	26·68
Same, heated 72 hours,	71·72	5·03	23·25
“ “ 120 “	76·06	4·99	18·95
Coal from vasculose acid,	76·43	5·31	18·26

Finally, he examined the modifications, under heat and pressure, of mixtures of chlorophyll with the fatty and resinous bodies which alcohol extracts from leaves. Although the mixture was at first soluble in alkalis, after 150 hours' treatment it gave a black substance, viscous, insoluble in caustic alkalis, and presenting an evident analogy to natural bitumens.

Alizarin-Carmine.—A new coloring material is manufactured, under this name, by the Austrian Alizarin Manufacturing Company. With tin as a mordant, it dyes wool orange; with alum, red. It is said to surpass all previous dyes of similar tints, in beauty, brilliancy, durability and variety of shading with different mordants, and resistance to change under exposure to light, air, perspiration and washing.
—*Fortsehr. der Zeit.* C.