

If we consider, then, these interesting optical results in the light of our present ideas of the constitution of the atoms, we should seek the *final* cause of color, in a disturbance of the equilibrium of electrons within the atoms, induced by the breaking of the Faraday tubes of force between the atoms. This is represented by our bonds or valence lines undergoing rapid oscillatory changes as suggested in the formulas above. We might well expect such a disturbed equilibrium to produce or annul ether vibrations of the order of those which produce color, and thus account for the absorption bands in the spectra of numberless organic compounds showing visible as well as invisible color.

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NOTES.

The Instability of Alloxan.—On returning to the Chemical Laboratory after the summer vacation last year I found that an explosion had taken place in the case of specimens of organic chemicals in the lecture room. A pane of glass was pierced by a round hole as large as my fist and pieces of glass had been forcibly projected against the opposite wall of the room, ten feet from the case. Within the case quite a number of bottles were ruined. A careful examination of them showed very plainly that a bottle of alloxan containing 10 grams had been the cause of the wreck. This sample of alloxan had been in the case for several years and the past summer was an unusually cool one. I was not aware that alloxan had any such property and have been unable to find that it is subject to any such behavior.

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The above note by Professor Wheeler on the instability of alloxan is of peculiar interest to the writer.

Several years ago, upon my return to the laboratory at the close of the summer vacation, I found that an explosion had occurred in one of our cupboards for fine organic chemicals. The force of the explosion shattered all the neighboring bottles on that end of the shelf, so that it was impossible to tell which particular bottle was responsible for the trouble. We checked up all the missing bottles by our shelf list, but among those destroyed there were none that we had ever heard mentioned as likely to decompose with explosive violence, and the matter remained very much of a mystery. Prof. Wheeler's article seems to solve this mystery, for among the wreck and ruin of broken glass in our cupboard were found

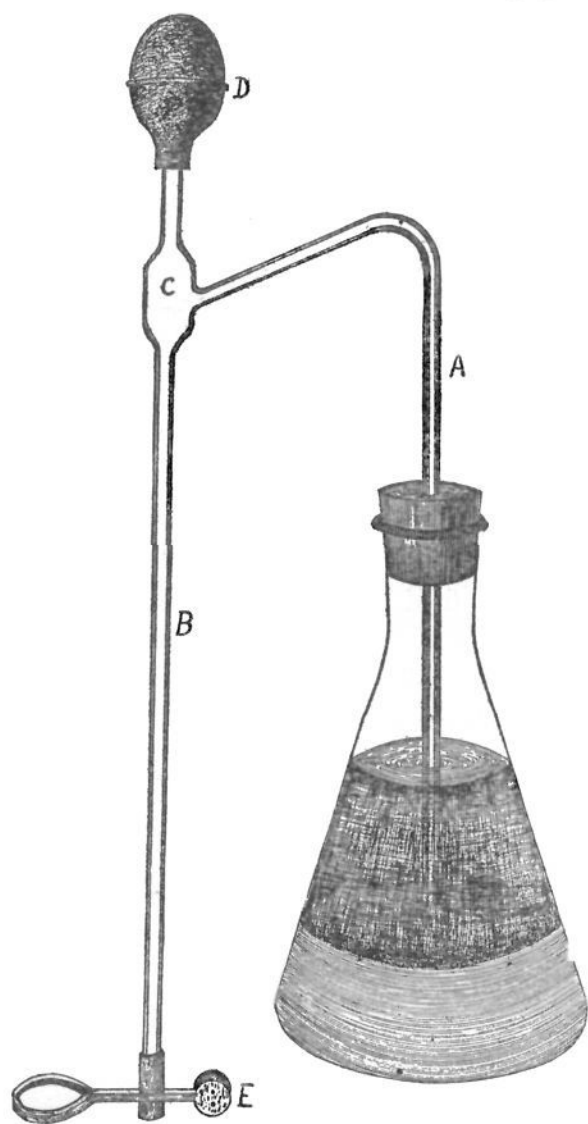
portions of a bottle of alloxan which, according to our shelf list, should have been standing about where the explosion occurred.

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An Improved Siphon.—In our laboratory practice we have felt the need of a more efficient siphon than is now found on the market. In an effort to improve upon this form of apparatus, we have constructed a small glass siphon that combines simplicity of construction and ease of manipulation, and is especially adapted to extraction work with non-miscible solvents.

The siphon is really nothing more than a branched pipette, with the branch entering the bulb of the pipette as represented in the figure. The



branch arm *A* consists of heavy capillary tubing with a 2 mm. bore, while the other glass parts are made of the ordinary thin glass. The bulb *C* has a capacity of 5 cc., which is ample for ordinary operations. Tube *B* is 22 mm. long, having an internal bore of 3 mm. The lower end of this tube is fitted with a short piece of rubber tubing, and is opened or closed by means of a small spring clamp. The upper end of the siphon is fitted with a small rubber bulb. Tube *A* is fitted with a cork having a vertical slit along the side, and fitting the separatory funnel or flask containing the liquid to be siphoned.

To operate the siphon, tube *A* is introduced into the liquid. The rubber bulb *D* is compressed, and the clamp at *E* closed. By gently releasing the pressure on the bulb, enough of the liquid will be drawn into *B* to start it to siphoning when clamp *E* is opened.

No other support, besides the cork, is necessary to hold the siphon in position. The hole through the cork should be large enough to permit