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A

MANUAL OF DYEING:

FOR THE USE OF PRACTICAL DYERS, MANUFACTURERS, STUDENTS, AND ALL INTERESTED IN THE ART OF DYEING.

BY

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PART VII

PART VII.

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The constitution of most artificial dyestuffs is well known, and scientists soon succeeded in showing the relations between their constitution and tinctorial properties.

Græbe and Liebermann, in 1868, expressed the opinion that it is chiefly an intimate connection of the atoms of oxygen and nitrogen which gives rise to the colouring character of organic compounds, and that the colouring character is destroyed if the intimate connection is loosened by the entrance of hydrogen (*leuco-compounds*). Thus,

Benzo-quinone $\left(C_6H_4{<}\begin{matrix}O\\O\end{matrix}\right)$ is yellow;

Hydroquinone $\left(C_6H_4{<}\begin{matrix}O-H\\O-H\end{matrix}\right)$ is colourless.

Azobenzene ($C_6H_5-N{=}N-C_6H_5$) is yellowish-red;

Hydrazobenzene ($C_6H_5-\underset{H}{N}-\underset{H}{N}-C_6H_5$) is colourless.

Although Græbe and Liebermann's views were pronounced almost a quarter of a century ago, when our knowledge of the chemical constitution of the dyestuffs was still very limited, they are in accordance with the modern ideas of the tinctorial character of organic compounds.

O. N. Witt published in 1876 a more comprehensive theory of the constitution of dyestuffs. According to this author a colour-bearing (chromophorous) group or *chromophor* must be introduced into the colourless aromatic hydrocarbons to render them capable of yielding a coloured substance. Benzene is colourless, but mononitrobenzene, $C_6H_5NO_2$, dinitrobenzene, $C_6H_4(NO_2)_2$, and trinitrobenzene, $C_6H_3(NO_2)_3$,