

2. "On Compounds of Anthracene with the different Oxides of Nitrogen." By C. LIEBERMANN and L. LINDERMANN.

3. "On the Composition of Aesculine and Aesculetine." By C. LIEBERMANN and R. KNIEBREK.

4. "Investigations on the Reduction of Anthraquinone." By C. LIEBERMANN.

5. "On the Electrolytic Determination of Silver." By H. FRESSENIUS and F. BERGMANN.

6. "On the electrolytic Determination of Nickel and Cobalt." By H. FRESSENIUS and F. BERGMANN.

7. "On Cyanethine and new bases derived therefrom." By ERNEST VON MEYER.

After which meeting adjourned.

ARTHUR H. ELLIOTT,

Recording Secretary.

XLVIII.—SOME NEW AZO COLORS.

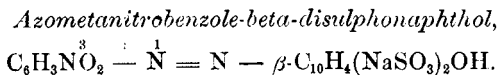
BY JAS. H. STEBBINS, JR.

For lack of time, the following paper will only give a brief account of some of the new dyes I have obtained within the last two months. Some of these compounds are pretty dyes, but possessing no material advantage over those in the market; others are merely interesting from a scientific point of view.

Among the first I will mention "Orange No. 3."

This pretty dye-stuff was obtained by diazotizing metanitraniline, and combining one molecule of the so obtained diazo-compound, with one molecule of beta-naphtholdisulpho acid, in an alkaline solution. Common salt precipitates the dye-stuff, in the form of a yellow paste. This is soluble in water in all proportions, and dyes wool in an acid bath, of a fine and clear orange color.

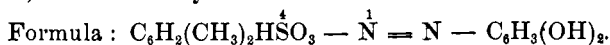
The reaction taking place here, may be expressed by the following terms:



We will next pass on to "Orange No. 4."

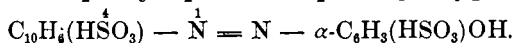
Produced by combining equal molecules of paradiazosulphoxylol and an alkaline solution of resorcinol.

Hydrochloric acid precipitates the free acid in the shape of a red paste, which is easily soluble in water.



In an acid bath, it dyes wool a sort of old gold color.

Parazosulphoxylnaphthalene-alpha-sulphoxyphenol,

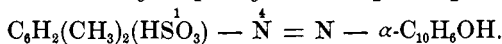


Prepared by combining equal molecules of diazonaphthionic acid and phenolsulpho acid, in an alkaline solution.

The soda salt falls from the free acid by addition of NaCl, in the form of a yellow-brown paste which is easily soluble in water.

An excess of HCl decomposes the soda salt, regenerating the free acid.

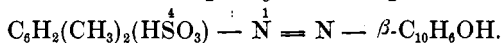
Parazodimethyl-sulphoxybenzole-alpha-naphthol,



This brown dye is prepared by combining paradiazosulphoxyol with an alkaline solution of alpha-naphthol, equal molecules of each being taken. HCl precipitates the free acid in the shape of a dark brown, flocculent mass, which is easily soluble in water.

Similar to this compound in composition, but differing greatly in shade, is

Paradiazosulphoxyol-beta-naphthol,

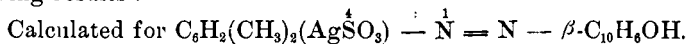


If equal molecules of paradiazosulphoxyol and beta-naphthol, in an alkaline solution, are mixed together, a thick scarlet gelatinous precipitate is instantly formed. This precipitate is collected on a filter, dissolved in boiling water, and reprecipitated by means of common salt, in the shape of a soda salt.

The free acid is precipitated from a hot solution of the soda salt by means of HCl, and forms little microscopic star-grouped red needles, with a strong golden bronze lustre.

The soda salt is composed of little red leaflets, easily soluble in water.

The silver salt is composed of fine red needles, less soluble in water than the soda salt. Two silver determinations gave the following results :



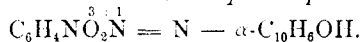
1. Ag 19.36 per cent.
2. Ag 19.93 per cent.

THEORY.

Ag 23.11 per cent.

The low percentage of silver in these two analyses is probably due to some impurity in the silver salt, difficult to remove by the ordinary methods of purification.

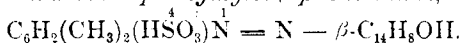
Metazanitrobenzole-alpha-naphthol,



Produced by treating diazometanitrobenzole with an alkaline solution of alpha-naphthol.

HCl throws down the free acid in the shape of a red-brown precipitate, soluble in water.

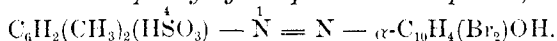
Parazosulphoxylylol-beta-phenanthrol,



Prepared by treating paradiazosulphoxylylol with an alkaline solution of beta-phenanthrol. HCl precipitates the free acid.

This red-brown dye dyes silk and wool in an acid bath.

Parazosulphoxylylol-alpha-dibromnaphthol,



Prepared by treating one molecule of paradiazosulphoxylylol with one molecule of alpha-dibromnaphthol, dissolved in an alkaline solution.

HCl precipitates the free acid from a hot and concentrated solution of the soda salt; soluble in hot water, with a scarlet color.

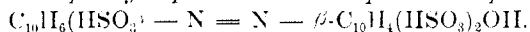
Azodinitroxybenzole-paramidosulphoxylnaphtholene,



Produced by combining equal molecules of diazodinitrophenol with an alkaline solution of naphthionic acid.

Red-brown dye, easily soluble in water.

Parazosulphoxylnaphthalene-beta-naphtholdisulpho acid,



Obtained by allowing equal molecules of diazonaphthionic acid and beta-naphtholdisulpho acid to react upon one another. Crimson dye, very soluble in water.

With this compound ends all I have to say to-night, but I hope to be able, at a later date, to give you a fuller account of the compounds I have just described.