ABSTRACTS.

GENERAL AND INORGANIC CHEMISTRY.

New Methods for Preparation of Crystallized Carbonates. M. L. BOURGEOIS.

The process consists in the precipitation by ammonium carbonate of the superheated solutions.

One method consists in taking an ammoniacal salt with a carbonate in suspension; the mixture is heated above 100° in a closed vessel. The author operates at 150°–180° on ½ grm. of amorphous carbonate and employs 2 grm. of ammoniacal salt, in the presence of 20 c.c. of water. After four or five heatings, followed by slow cooling, the total crystallization is obtained.

The other method is to precipitate slowly, but at once, the solutions by nascent ammonium carbonate, produced by the heating of urea in presence of the salt to be decomposed. The author in these experiments obtained no results with the carbonates of lithia, magnesia, zinc, manganese, iron, nickel, cobalt, or copper. (*Bul. Soc. Chim.*, **47**, *81.*) M. L.

Iodometric Studies. G. TOPF.

A very thorough monograph on the chemistry of iodine in relation to oxidizing and reducing agents. (*Zeit. anal. Chem.*, **26**, 138–217.) J. F. G.

ORGANIC CHEMISTRY.

On Fahlberg's Azoto-sulphureted Saccharine. E. MAUMENÉ.

The conclusion of the author is that saccharine as produced by Fahlberg is not a defined species. It is composed of at least two parts.

2. It does not by itself nor by its components answer to Fahlberg's formula.

3. It seems to be formed of two parts or bodies of equal weight. (*Bul. Soc. Chim.*, **47**, *92.*) M. L.

Action of Ethyl Aldehyde on Resorcine. H. CAUSSE.

The author dissolves 50 grms. of resorcine in 500 c. c. of H_2SO_4 at 10%, and puts on the water bath. Every 5 minutes a portion of 5 c.c. of a solution of aldehyde is added. This solution contains 1 grm. of pure aldehyde to 9 grms. H_2SO_4 of 10%. The author insists on the precautions essential to a good result; the crystals obtained had the composition :

C	67.80
H	5.71
O	26.49

The analysis leads to the formula $C^{14}H^{14}O^4$, or 1 molecule of aldehyde, 2 mols. of resorcine, minus 1 mol. of water. (*Bul. Soc. Chim.*, **47**, *90.*) M. L.

ANALYTICAL CHEMISTRY.

Use of Bromine for Decomposing Sulphides. A. BRAND.

"*Bromum solidificatum,*" which is *kieselguhr* saturated with bromine, and so prepared that a stick 1 cm. in length and 7 mm. diam., contains about 1 grm. bromine, is a convenient substitute for chlorine where the latter is generally used for decomposing minerals, slags, etc. The pulverized mineral or sulphide is placed in a heavy glass tube, connected with two or more U tubes containing hydrochloric acid, which serves to intercept the bromides and bromine. A suitable quantity of the bromine sticks is then introduced into the tube, followed by a plug of stiff gypsum paste, and the end of the tube is tightly corked. Heat is then gradually applied to the tube and the bromine made to pass over the pulverized mineral, and the latter finally heated when the bromine is all expelled from the sticks. The volatile bromines are thus expelled and intercepted in the hydrochloric acid, which, as soon as the operation is completed, is emptied into an evaporating dish, the bromine expelled by evaporation, and the analysis further conducted as if chlorine had been used for the decomposition. (*Zeit. anal. Chem.*, **26**, 222–226.) J. F. G.

Determination of the Sulphides of Zinc and Cadmium. P. VON BERG.

These sulphides can be rapidly determined by iodine solution, by acting upon the freshly precipitated sulphides with a known quantity of iodine solution containing a small percentage of HCl. The reaction being $ZnS + 2\,HCl + 2\,I = ZnCl^2 + 3HI + S$. (*Zeit. Anal. Chem.*, **26**, *p. 23.*) J. F. G.

Analysis of Clay. MEINEKE.

Determination of silica: The author shows the necessity of carefully testing the filtrates after the first separation of the silica, as the loss of silica by solution is apparently greater than the error generally caused by contamination of the separated silicic acid by alumina. (*Rep. anal. Chem.*, **7**, 214.) J. F. G.

Volumetric Determination of Zinc Powder (Slate Gray of the Vieille Montagne). F. WEIL.

The process consists in treating a certain amount of the zinc powder with an excess of a neutralized copper salt, of a determined strength; the zinc precipitates copper equivalent for equivalent. The non-precipitated copper is afterwards titrated by a solution of stannous chloride; the difference, with the amount of copper taken, indicates the copper precipitated by the zinc. This number, multiplied by the coefficient 1.0236, gives the metallic zinc of the sample. The author indicates the *modus operandi* of his method. (*Bul. Soc. Chim.*, **47**, *83.*) M. L.

New Method for the Determination of Starch and Different Kinds of Sugars. J. EFFRONT.

Soxhlet has shown that the methods actually used for determination of starch are not accurate, sometimes giving rise to errors of 1 and 2%. The author has found a method of determination of starch and dextrine in presence of other sugars. The liquid to be tested is treated in succession with NH_3, sodium hypochlorite and HCl. The treatment with NH_3 destroys inverted sugar, and a portion of glucose and maltose. The hypochlorite completes the destruction. The liquid is diluted to 4–9% sugar, and its rotary power is observed. 10 c.c. are mixed with 10 c.c. of NH_3 at 22° B and 5 c.c. of water; the liquid is kept in the water-bath for 40 minutes and then concentrated to 5–8 c.c. The concentrated liquid is put into a vessel cooled by water, and treated with 10 c.c. of sodium hypochlorite (7–8% active Cl). The liquid is stirred and treated with 2 c.c. of concentrated HCl and diluted to 25 c.c. The rotary power of this liquid is observed; the rotation is produced by dextrine. For the determination of starch the author uses Dubrunfant's method, modified by him, converting the starch into dextrose and maltose and observing the rotary power before and after destruction of the sugar by the author's process. (*Bul. Soc. Chim.*, **47**, 7.) M. L.

Detection of Small Quantities of Albumen. R. PALM.

The delicacy of the reactions for albumen with acids can be much increased if the reagents are applied in solution of 95% alcohol, or still better, in alchol containing 10% of ether. This also prevents the redissolving of the precipitates in excess of the reagent. The following reagents are specially for the precipitation of very minute quantities of albumen :

1. Alcoholic solution of basic ferric acetate completely precipitates the albumen on gently warming.

2. Alcoholic Solution of basic cupric acetate.—The precipitate caused by the same is dissolved in acetic or lactic acid, and excess of NaOH added, and the solution then heated to boiling, when reduction occurs.

3. Solution of lead acetate or chloride in alcohol.—The precipitated albumen can be further tested with glacial acetic and sulphuric acids, whereby a violet coloration should result (Adamkiewicz's test).

4. Traces of albumen, also precipitated by lead hydrate.—The latter freshly precipitated is dissolved in boiling water, and this solution used for the test. (*Zeit. Anal. Chem.*, **26**, *p. 35-38.*)

J. F. G.

INDUSTRIAL CHEMISTRY.

Regeneration of the Acid Residues from the Manufacture of Gun Cotton. E. ALLARY.

1. SIMPLE DISTILLATION.—The acid residue indicating 58° B^e. was filtered through quartz. 100 kilos gave—

10.077 kilos Nitric acid at 50° B^e.
6.279 " " " at 10° B^e.
83.302 " Sulphuric acid at 62° B^e.

2. DISTILLATION WITH SODIUM NITRATE.—The author uses these residues instead of sulphuric acid in the decomposition of sodium nitrate. He obtains at once acids at 48°45, and even 49°40, by using dried nitre.

No danger is to be feared if the residual acids are previously filtered. (*Bul. Soc. Chim.*, **47**, *102.*) M. L.

Battery with Elements of Coal without Metals. D. TOMMASI and RADIGUET.

The positive electrode is a stick of carbon covered with lead peroxide and placed in a linen bag. The whole is placed in a cylinder of carbon, perforated, and the two elements are put in a jar filled with pieces of gas retort carbon, and covered with a solution of salt. The electromotive power is 0.6 volt. to 0.7 volt.; it is good only for short operations, but for those cases will last for years. (*Bul. Soc. Chim.*, **47**, *83.*) M. L.

Adulteration of Split Peas. A. KLINGER and A. BUJARD.

In the laboratory at Stuttgart peas were received which were found to be colored with fuschin. A secret preparation recently sold in the vicinity of Stuttgart under the name of "Dr. S. S. Louden's Chemical" for improving petroleum was found to be simple sodium bicarbonate. (*Rep. anal. Chem.*, **7**, 232.)

J. F. G.

Abstracts of American Patents Relating to Chemistry.

(*From the Official Bulletin of the U. S. Patent Office.*)

February 8th, 1887.

357,227.—Lubricating composition. J. Plante.

Consists of powdered sulphur, peat and oil.

357,259.—Disinfectant mixture. E. G. Xander.

One part of ferrous sulphate and four parts of coal tar are intimately mixed with forty parts of charcoal.

357,273.—Blue coloring matter from tetrazodiphenyl. C. Duisberg.

Is produced by the action of tetrazodiphenoldimethyl ether upon alpha naphthol.

357,244.—Red coloring matter for dyeing by the action of tetrazo dyes with betanaphthylamine sulpho acid. C. Duisberg.

357,281.—Dyeing with basic aniline. E. Holliday and E. Rau.

The material is dyed in a bath composed of the fatty salts of the basic coal tar colors in a solution of benzine, etc., and then steamed.

357,331.—Process of obtaining albumen from blood. T. Nordenfeld.

Consists in separating, by stirring or whisking, the fibrin from blood, then adding to the serum sugar and paraffin oil, afterward separating the particles by centrifugual action, and finally evaporating and drying the albumen.

357,465.—Process of preparing powdered milk. J. Carnrick.

Consists in evaporating the fresh milk at a low temperature in vacuo to a syrupy consistence, and then, while subjected to continual agitation, adding one or more of the different kinds of sugar, and continuing the evaporation and agitation until brought to a condition of dry granular powder.

357,528.—Process of concentrating sulphuric acid. J. B. F. Herreshoff.

W. R.