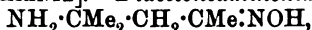


extremely stable towards reducing agents; of its decomposition products obtained under various circumstances, cyanuric acid and its derivatives may be mentioned. In the formation of alkali salts, one-third of its hydrogen is replaced by the alkali metals.

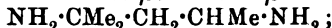
By the action of a dry halogen on a dry thiocyanate, and the treatment of the resulting thiocyanogen, $(\text{CNS})_x$, with alkali hydroxide, canarin is obtained in a yield of 30—40 per cent. of the thiocyanate employed. After the separation of the canarin sodium derivative, the residual alkaline solution yields, on addition of hydrochloric acid, a yellow, amorphous substance, $\text{C}_3\text{H}_4\text{ON}_4\text{S}_2$, in a quantity of about one-third to one-half of the dye produced in the same reaction; the filtrate contains sulphuric acid, hydrocyanic acid, and ammonia. When the substance, $\text{C}_3\text{H}_4\text{ON}_4\text{S}_2$, is heated with hydrochloric acid under pressure, it yields cyanuric acid; on treatment with ammonium sulphide under pressure, it furnishes dithiomelanurenic acid, and with ammonia under pressure, thioammeline. E. G.

Preparation of Doubly Unsaturated Hydrocarbons. By CARL HARRIES (*Ber.*, 1901, 34, 300—304).—When the phosphates of certain diamines are distilled, ammonia, ammonium pyrophosphate and an unsaturated hydrocarbon containing two double bonds are formed. The hydrochloride and sulphate of the diamine are less suited for this purpose.

[With SUREN ADAMIANZ].—*Diacetoneaminoxime*,



is obtained from diacetoneamine, hydroxylamine hydrochloride, and potassium carbonate (compare Abstr., 1896, i, 318); it melts at 55—56°, and boils at 129—131° under 14 mm. pressure. It is reduced by sodium and alcohol to $\beta\delta$ -diamino- β -methylpentane,



this boils at 36—41° under about 12 mm. pressure, and forms a phosphate which melts at 187—188°. When the phosphate is distilled, methylisoprene (methylpentadiene), C_6H_{10} , perhaps $\text{C}_2\text{H} \cdot \text{CMe} \cdot \text{CH} \cdot \text{CHMe}$, is formed; it boils at 75—77° under 779 mm. pressure, and has sp. gr. 0.71761 at 16°.

[With ERNEST ATKINSON].—Methylcyclohexenonehydroxylamino-oxime,

$\text{OH} \cdot \text{NH} \cdot \text{CMe} < \begin{smallmatrix} \text{CH}_2 \cdot \text{C}(\text{NOH}) \\ \text{CH}_2 \end{smallmatrix} > \text{CH}_2, \text{H}_2\text{O}$ (Abstr., 1898, i, 402), is reduced by sodium and alcohol to a diamine, $\text{C}_7\text{H}_{10}\text{N}_2$, which boils at 85—89° under 17 mm. pressure, and forms a sulphate, with $\text{H}_2\text{SO}_4 \cdot 2\text{H}_2\text{O}$, which was analysed. When the phosphate of the diamine is distilled, a dihydrotoluene (methylcyclohexadiene), C_7H_{10} , is obtained; this boils at 107—108° under 779 mm. pressure. C. F. B.

Hydouracil. By JULIUS TAFEL (*Ber.*, 1901, 34, 144).—The substance recently described by the author and Weinschenk (this vol., i, 72) as hydouracil has been previously described by Weidel and Roithner (Abstr., 1896, i, 470) as β lactylcarbamide. A. H.

So-called Diazoguanidine. By ARTHUR HANTZSCH and A. VAGT (*Annalen*, 1901, 314, 339—369).—In many respects, the behaviour of diazoguanidine (Thiele, Abstr., 1892, 1298) is inconsistent with that of a true diazo-compound. The authors' investigation shows that

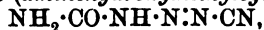
the salts of diazoguanidine, originally represented by the formula $\text{NH}_2 \cdot \text{C}(\text{NH}) \cdot \text{NH} \cdot \text{N} \cdot \text{N} \cdot \text{X}$, are actually derivatives of *carbaminoimino-azoimide*, $\text{NH}_2 \cdot \text{C}(\text{NH}) \cdot \text{N} < \text{N}$, and brings out the analogy between this compound and carbaminoazoimide (Thiele and Stange, Abstr., 1895, i, 252).

Carbaminoiminoazoimide nitrate is acid towards litmus, the aqueous solution, when boiled, yielding nitric acid and aminotetrazole,



; the *nitrate* of the last-named substance crystallises from alcohol and melts at 174—175°, when it decomposes. Carbaminoiminoazoimide *hydrogen sulphate*, obtained by adding concentrated sulphuric acid to an alcoholic solution of the nitrate, behaves in a similar manner, yielding aminotetrazole and sulphuric acid; when heated with dilute sulphuric acid, the same change is brought about, 20 per cent. of azoimide also being produced. When the nitrate is reduced with cold stannous chloride, nitrogen is the main product, whilst hydrogen sulphide gives rise to nitrogen and guanidine.

Carbaminoazocyanide (*aminohydroxymethylcyanotriazen*),



obtained from carbaminoazoimide and hydrogen cyanide, is a brownish-yellow powder which darkens at 250°, and decomposes completely at higher temperatures; it is insoluble in water and all organic solvents, but forms alkali derivatives from which it may be regenerated by dilute acids.

Thiele observed that carbaminoiminoazoimide nitrate is resolved by sodium hydroxide (2 mols.) into cyanamideazoimide. The authors have succeeded in showing that carbaminoiminoazoimide is first formed from the action of the alkali (1 mol.); it exists unquestionably in the aqueous solution, but on evaporating the liquid, aminotetrazole is produced. When a cold aqueous solution of carbaminoiminoazoimide is treated with sodium hydroxide (2 mols.), cyanic acid and azoimide are produced, and conversely, carbaminoiminoazoimide may be synthesised from the two substances last named; similarly, aminotetrazole, which sodium hydroxide converts into cyanamide and azoimide, is produced when these compounds are brought together.

as-Dibenzylcyanamide, $\text{CN} \cdot \text{N}(\text{CH}_2\text{Ph})_2$, prepared from cyanamide and benzyl iodide at 50°, crystallises from ether in lustrous, white leaflets, and melts at 53—54°; it is identical with Wallach's cyanodibenzylamine (Abstr., 1899, i, 659).

M. O. F.

Remarks on the Relation of Inorganic to Organic Chemistry. By AUGUST MICHAELIS (*Annalen*, 1901, 314, 276—280).—The author discusses the development and future of that branch of chemistry which deals with organic compounds containing such elements as phosphorus, arsenic, boron, silicon, sulphur, selenium, and tellurium.

M. O. F.

Direct Hydrogenations Effected in the Presence of Reduced Nickel: Preparation of Hexahydrobenzene. By PAUL SABATIER and JEAN B. SENDERENS (*Compt. rend.*, 1901, 132, 210—212. Compare Abstr., 1897, i, 305, 545; 1899, i, 555).—When hydrogen, saturated