NOTES.

The Interaction of Sodamide and Alkyl Iodides with Acetophenone and its Homologues. By ALFRED RUSSELL.

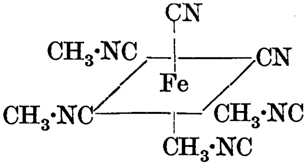
NORMAL reaction, producing more than 50% of the theoretical yield of α-ethyl-α-*n*-propyl-α-*n*-butylacetophenone, occurs between ethyl iodide and sodio-*n*-propyl-*n*-butylacetophenone in a neutral solvent (compare Haller and Bauer, *Compt. rend.*, 1909, **148**, 70).

In ether, the reaction between sodioacetophenone and methyl iodide also is normal; but in benzene no propiophenone is formed, the sole product being a *polymeride*, $(C_6H_5\cdot CO\cdot C_2H_5)_3$, a white amorphous solid, m. p. 96—98°, b. p. 300—320°/15 mm. [Found: C, 81·1; H, 7·3; *M*, mean of ten determinations, 405. $(C_6H_5\cdot CO\cdot C_2H_5)_3$ requires C, 80·6; H, 7·3%; *M*, 402]. The substance is unaffected by acids or alkalis, permanganate, dichromate, and fusion with caustic potash, chars when heated strongly in the air, and is readily soluble in the common organic solvents but insoluble in water, acids, or alkalis. It gives no methyl iodide in the Zeisel reaction and is therefore not a trimethoxytriphenyl*cyclo*hexane. It may have a structure,  $O{<}\begin{matrix}CEtPh\cdot O\\ CEtPh\cdot O\end{matrix}{>}CEtPh$, similar to that of the acetals, which it resembles in chemical stability.—THE SIR DONALD CURRIE LABORATORIES, THE QUEEN'S UNIVERSITY, BELFAST. [*Received, October 25th,* 1929.]

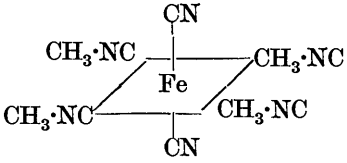
The Structure of the Isomeric Methyl Ferrocyanides.

By S. GLASSTONE.

ALTHOUGH the suggestion that potassium ferrocyanide exists in two isomeric forms (Briggs, J., 1911, **99**, 1019) has been shown to be erroneous (Bennett, J., 1917, **111**, 490; Kolthoff, *Chem. Weekblad,* 1919, **16**, 1406; Briggs, J., 1920, **117**, 1026), the isomerism of the tetramethyl ferrocyanides (Hartley, J., 1913, **103**, 1196) appears to be well established. Hitherto, however, there has been no satisfactory explanation of this isomerism, and the following view is therefore proposed. If the structure of the so-called methyl ferrocyanide is considered to be $[Fe(CH_3{\cdot}NC)_4(CN)_2]$, with the four neutral $CH_3{\cdot}NC$ groups (compare Hartley, J., 1911, **99**, 1549) co-ordinated to the iron atom (see Pfeiffer, "Organische Molekülverbindungen," 1927, p. 193, for other instances), the two valency electrons of the latter are shared with the two cyanide radicals, and the substance will be a non-electrolyte. Further, since it is of the type MX_4A_2, it can exist in *cis-* and *trans*-modifications, thus :



Cis.-



Trans.-

The *cis*-form, having adjacent polar cyanide radicals, is presumably the more soluble and more reactive; hence it corresponds to Hartley's α-form. The substance $(CH_3)_6Fe(NC)_6I_2$, produced by the action of methyl iodide on the α-form, is probably $[Fe(CH_3{\cdot}NC)_6]I_2$ [compare $Mg(CH_3{\cdot}CN)_6I_2$, possibly $Mg(CH_3{\cdot}NC)_6I_2$; Menschutkin, *Z. anorg. Chem.*, 1909, **61**, 110] and should be an electrolyte. The chloride and sulphate prepared by Hartley (J., 1910, **97**, 1725) are probably analogous.—THE UNIVERSITY, SHEFFIELD. [*Received, November* 21*st*, 1929.]