by the equation: $\frac{dk}{dt}=a(R-K)^2$, where a and R are constants.

29. Studies on the Purification of Rice Oil.

Itsuro Yamakita and *Yujiro Fujii.*

The purification of rice oil, especially, the removal of colored substances from the crude oil, is not easy, compared with other vegetable oil.

Though several decoloration methods have been proposed, no clear explanation has been given yet why rice oil has such particular property.

So the authors tried to resolve this question. In this report, some results, obtained from the physico-chemical stand pointe, concerning the decolaration of the crude rice oil, are described.

1) First of all, as the new neasure showing quantitatively the change of coloration of rice oil, the specific transmitting light power through the oil, determined by a colorimeter, was adopted.

2) It was confirmed that the decoloration effect of activated acid clay to the crude rice oil is very small.

3) It was found that the emulsive washing of the crude oil at room temperature by dilute aqueous solution of acid or salt, which has no apprehension to color the oil secondarily, (for ex. hydrochloric acid, acetic acid, sodium citrate, citric acid, magnesium chloride etc.) promotes the decoloratin effect of activated acid clay. From this fact, it is supposed that the impurities which hinder the decoloration effect of the adsorbent in the crude oil are removed by the pretreatment above mentioned.

4) The increase of coloration of decolored rice oil having high acid value (52.7) produced by contacting it with iron pieces (which has the significance corresponding to the practical case, namely the manufacture of the oil by iron machinery and the storage of the oil in iron vessels) was measured, and it was recognised that the coloration is decolored easily by acid treatment alone, but not by the adsorption treatment of activated acid clay alone.

30. Studies on the Synthesis of BHC (Benzene Hexachloride) (III)

Research for the photochemical Reaction between Benzene and Chlorine in Carbon Tetrachloride Solution. 2.
Mechanism of the Formation of *o*-Octachlorocyclohexane.

Toshihiko Oiwa, Ryoichi Yamada, Michiko Inouye and *Minoru Ohno,*

We reported in the previous paper (Oiwa et al; Botyu-Kagaku, **13**, 23 (1949)) That BHC, γ-heptachlorocyclohexane (m. p. 85-86°, γ-hepta) and o-octachlorocyclohexane (m. p. 148,5°, o-octa) where formed in photochemical reaction between benzene and chlorine in cabon tetrachloride solution.

Afterwards we studied on the mechanism of the formation of o-octa in this reaction by the following experiments; 2 g of benzene, α-BHC, β-BHC, γ-BHC, δ-BHC, α-heptachlorocyclohexane (m. p. 153-154°, α-hepta), β-heptachlorocyclohexane (m. p. 262°, β-hepta) and γ-hepta, respectively, were photochlorinated for 1 hr. in cabon tetrachloride solution containing 6 g chlorine under the illumination of the groups of line than 3126 A° at 40°. By polarographical and organic chemical observations ((Nakazima et al; Botyu-kagaku **13**, 14 (1949), Nakazima et al; ibid. **11**, 3 (1949)) we found that the reactions of o-octa formation in these conditions are complex as follow:

C_6H_6 —— BHC

α-BHC ⋯⋯ γ-hepta
α-BHC ⋯⋯ o-octa

β-BHC ⋯⋯ α-hepta
β-BHC ⋯⋯ o-octa
β-BHC —— β-p-octachlorocyclohexane (m. p. 262° dec., β-p-octa)

γ-BHC ⋯⋯ γ-hepta

δ-BHC ⋯⋯ α-hepta
δ-BHC ⋯⋯ o-octa
δ-BHC —— β-p-octa

α-hepta ⋯⋯ o-octa
α-hepta —— β-p-octa

β-hepta —— β-p-octa

o-dichlorobenzene ⋯⋯ o-octa

in this scheme the processes of the solid lines were isolated substancially and the dotted lines were observed polarographically. The yield of o-octa from o-dichlorobenzene was much less than that from BHC, and o-dichlorobenzene was not isolated from the above photochlorinated products of benzene. So there is great possibility that as the first step BHC will be formed from benzene by additions and as the next step o-octa will be formed from BHC by substitutions.

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31. Studies of Cystathionine in Horse-hoof.

Hiromu Shimomura.

In my previous paper (This report, 17, 81 (1949)), I reported the presence of S-(β-amino-β-carboxyethyl)-homocyteine (cystathionine) in the waste of hourse-