$$2NH_3+CS_2 \rightleftarrows NH_4SCN+H_2S \quad (1a),$$

$$NH_3+H_2S \rightleftarrows NH_4HS \quad (1b),$$

$$NH_3+NH_4HS+CS_2 \rightleftarrows (NH_4)_2CS_3 \quad (1c).$$

As the gas in the autoclave is released, the following dissociations take place gradually:

$$(NH_4)_2CS_3 \longrightarrow NH_4SCN+2H_2S \quad (2),$$

$$\searrow 2NH_3+CS_2+H_2S \quad (3),$$

so that when the pressure in the autoclave is released in a hot state, a decrease in the yield of NH_4SCN will be resulted, according to equation (3). Furthermore, the experimental result that by increasing charging density of NH_3 and CS_2 the formation of NH_4SCN is decreased can be explained quantitatively with a rate equation derived on above reaction schema from the stand point of chemical kinetics.

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27. Preparation of Organo-mercurisulfides. (I)

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Merthiolate, *i. e.*, sodium ethylmercurithiosalicylate, which was synthesized by Kharasch *et. al.* in 1926, has strong sterilizing power.

But, the material mercuri-compound of this substance is expensive.

The authors, also with the same purpose, prepared the following compounds, using easily obtainable aromatic mercuri-compounds.

	dec. p.
p-Ethylmercaptomercuribenzoic acid.	179.5°–181°
p-(β-Hydroxyethylmercaptomercuri)-benzoic acid.	168°–170°
p-Carboxylphenylmercurithiosalicylic acid.	215.5°–216.5°
o-(β-Hydroxyethylmercaptomercuri)-benzoic acid.	142°–144°
4-(β-Hydroxyethylmercaptomercuri)-2-chloro-benzoic acid.	147°–149°
3-Chloro-4-carboxylphenylmercuri-thiosoalicylic acid.	204.5°–205.5°
2-Chloro-tolyl-4-mercurithiosalicylic acid.	153.5°–154.5°
2-Chloro-tolyl-4-mercuripseudothiourea chlorohydrate.	140°–150°
