CONCENTRATION OF RUBBER LATEX BY CREAMING

THE concentration of rubber latex by creaming was first noticed by Traube.[1,2] Since then creaming has been used on a large scale in the preparation of latex concentrates. The creaming agents generally used are gums, pectins, gelatin, alginates and other similar hydrophilic colloids.

While working on the concentration of rubber latex the author has found that the seeds of *Adenanthera pavonina* (Coral Wood) provide a new source of creaming agent for rubber latex. Coral wood tree is found in the Himalayas, Western Ghats and Sylhet.

A convenient quantity of the powdered seeds was kept soaked in five to six times its weight of water for about four hours. The aqueous solution was decanted off, and the pasty mass mixed with seven to eight times its weight of water, and heated at 80° to 90° for about four hours. It was then filtered, and filtrate concentrated to about one-fourth of its original volume. Ninety-five per cent. alcohol was then added in such quantities that the final concentration of the alcohol did not go below 70 per cent. The flocculent precipitate that was formed was filtered, washed, dried and powdered. The yield of the material was about 5 to 6 per cent. based on the dry weight of the seeds. For concentration of rubber latex a 2 per cent. aqueous solution of the above powder was used.

To rubber latex of 30 per cent. D.R.C., was added 0·2 per cent. (based on aqueous phase) of the creaming agent. After thorough mixing the rubber latex was kept undisturbed. Creaming started in about an hour, and was complete in about 12 to 14 hours. A cream of 58 to 60 per cent. D.R.C. separated at the top. The serum was found to contain less than 0·5 per cent. rubber.

This creaming agent gave the following reactions, usually characteristic of pectins:—

(1) Ten c.c. of a 1 per cent. aqueous solution of the creaming agent when mixed with 1 c.c. of a 10 per cent. solution of thorium nitrate set to a firm gel in about two minutes. This gel-formation was not observed in the presence of acetic acid.[3]

(2) Addition of calcium chloride solution to an aqueous solution of the creaming agent in presence of acetic acid resulted in the precipitation of calcium pectate.[4,5]

Further details will be published later.

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1. Traube, *Brit. Pat.*, 1924, 226, 440. 2. —, *Gummi Ztg.*, 1925, **39**, 434, 1647. 3. Bryant, *Ind. Eng. Chem.* (Anl. Ed.), 1941, **13**, 103. 4. Carre and Hayne, *Biochem. J.*, 1922, **16**, 60. 5. Nanji and Norman, *Ibid.*, 1928, **22**, 596.

FERRIC TUNGSTATE GEL

IN communications[1] from these laboratories the conditions of preparation of several ferric sols have been described. In this note the condition of formation of ferric tungstate gel has been investigated. Holmes[2] obtained gels of ferric phosphate and chromic arsenate. Ferric borate sols and gels were obtained by Prakash and Dhar.[3] Prakash[4] obtained a gel of ferric tungstate for the first time by mixing a 15 per cent. solution of sodium tungstate with M/2 ferric chloride solution.

I have observed that in presence of glucose ferric chloride dissolves a considerable amount of sodium tungstate to give a deep red positively charged sol of ferric tungstate. If this sol be purified by dialysis and then coagulated by electrolytes it sets to transparent jellies with slight opalescence.

To 50 c.c. of ferric chloride solution (corresponding to 69·84 gm. of Fe_2O_3 per litre) was added 10 c.c. of 20 per cent. glucose solution and 40 c.c. of 10 per cent. Na_2WO_4, $2H_2O$ was slowly run into this mixture. The mixture was vigorously shaken and was then allowed to dialyse for three days. The purified sol thus obtained had the empirical formula $2\ Fe_2O_3$, $Fe_2(WO_4)_3$ and set to jellies when coagulated with KCl or K_2SO_4.

The influence of the variation of the concentration of the coagulating electrolyte on the time of setting of the gel is shown in the following tables:—

TABLE I

Amount of sol taken	3 c.c.;	Total volume	6 c.c.		
Amount of $N/50 K_2SO_4$ (c.c.)	3	2·8	2·6	2·4	2
Time of setting (Minutes)	14	40	70	140	No jelly

TABLE II

Amount of sol taken = 2 c.c.;	Total Volume = 4 c.c.			
Amount of N/2 KCl (c.c.)	2	1·9	1·8	1·7
Time of Setting (Minutes)	5	13	30	No jelly

It has been further observed that this sol itself sets to a transparent jelly when kept in a Jena bottle for about fifteen days.

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1. Prakash and Mushran, *Allahabad Univ. Studies*, 1943, **19**, 1; Mushran, *Curr. Sci.*, 1945, **14**, 123. 2. Holmes and Co-workers, *J. Amer. Chem. Soc.*, 1918, **40**, 1014. 3. Prakash and Dhar, *J. Ind. Chem. Soc.*, 1930, **7**, 307. 4. —, *Ibid.*, 1929, **6**, 587.

ISOLATION OF SOME TOXIC FACTORS FROM ARGEMONE OIL

ARGEMONE OIL has been held to be the factor responsible for causing epidemic dropsy in man by a number of investigators especially by Lal *et al.*[1] Sarkar[2] pointed out certain anomalies of the theory and stressed on the fact that a definite solution of the problem could