

H. A. WEBER (Amer. Chem. Journal, 1896, 1092) made a series of experiments to determine the influence of coal tar colouring matter on the digestion (by pepsin and pancreatin) of blood fibrin. He reaches the following conclusions:—

*Oroline yellow* ("acid yellow" or "fast yellow" of the trade) has a marked and injurious effect on peptic digestion.

*Saffoline* (acridine red) slightly retards peptic digestion, but the author considers its effects to be practically nil.

*Magenta*—does not appear to interfere with peptic digestion.

*Oroline yellow*—does not retard pancreatic digestion.

*Saffoline*—has a strong retarding effect on pancreatic digestion.

*Magenta*—acts like saffoline towards pancreatic digestion.

*Methyl Orange*—acts like saffoline and magenta in retarding pancreatic digestion.

From the examination of these four colours, it appears that while none interfere with both peptic and pancreatic digestion, all interfere with one or the other, and are therefore very undesirable in food or drink.

*Frentzel*. (Zeit. für. Untersuch. der. Nahr. und Genussmittel, 1901-968.)—In this paper are given the results of a considerable number of experiments, consisting in feeding rabbits, dogs and human beings with food mixed with the colours "mandarin" (obtained by diazotizing sulphanilic acid and B. naphthol) and "metanil yellow" (prepared by diazotizing meta-benzene-sulphonic acid and diphenylamine). The conclusions arrived at are that the colours can scarcely be considered poisonous in the small quantities in which they are used in foods. Long continued, large doses, however give rise to some injurious effects: but this quantity is never, in the natural course of things, even approximately reached.

*Chlopin*. (Zeit für. Untersuch. der. Nahr. und Genussmittel, 1902-241) finds that "metanil yellow" is harmless, even when given in daily doses of 2 to 3 grammes to dogs, and 0.2 gramme to human beings. On the other hand he does not agree with the statement of Frentzel that "mandarin" is innocuous in moderate quantities. Given in daily doses of 2 grammes to a dog it caused uneasiness, vomiting and diarrhoea. The author himself took 0.2 gramme, and the symptoms were so alarming (dizziness, headache, &c.) that the substance had to be removed from the system by means of a purgative.

The following concise summary of Food Laws, as regards preservatives, is taken from a bulletin issued by the United States Department of Agriculture, through the *Jour. Soc. Chem. Industry*, 1901, p. 774:—

'Prohibition of the use of chemical preservatives and aniline dye stuffs as colouring agents for liquors is almost universal, while the employment of all foreign colouring matter is often prohibited. The use of chemical preservatives and foreign colouring matter with beer is usually prohibited. The sale of foods containing saccharin, sucrol, and similar preparations is prohibited in Belgium, France, Germany, Italy and Roumania. The importation of saccharin, except for medicinal use and under prescribed conditions, is prohibited by Belgium and Greece. All countries permit the dyeing of confections and similar articles which are themselves colourless, but are customarily coloured artificially. Belgium permits mustard to be coloured artificially when properly labelled. Salicylic acid and boric acid have been used so much more commonly than other preservatives, that legislation is usually directed against them, whilst local bodies often extend the prohibitions to benzoic acid and other substances as they come into use.

'The sale of foods containing preservatives is prohibited in Austria, France, Hungary and Roumania, and that of beverages containing preservatives in Belgium, Germany and Switzerland. The addition of salicylic acid to food is prohibited in France. Holland does not permit the sale of beer containing salicylic acid, and Spain forbids its addition to wine. Italy permits the addition of 0.2 per cent. of boric acid to butter, but forbids the use of other preservatives.'

While I cannot say that I have, in the preceding pages, given a resumé of all the important work that has been done upon preservatives and colouring matters, I believe that I have referred to and summarized all the important researches which have come