Borax also neutralizes the action of synaptase. It is known that the bitter almond contains amygdalin, and the sweet almond the synaptase, which, mixed with the amygdalin, produces the essence of bitter almonds, accompanied by prussic acid. It suffices to suspend the meal of sweet almonds in the one instance in pure water, and in the other in a solution of borax, and to add amygdalin to both liquids, to demonstrate this influence. With pure water, the odour of essence of bitter almonds becomes increasingly manifest, and the presence of prussic acid becomes more and more evident by the formation of prussian blue. With the solution of borax, neither is the odour of essence of bitter almonds perceptible nor the formation of prussian blue.

Borax neutralizes the action of diastase. If four tubes containing water and potato starch be kept at 70° C., the first without addition, the second with the addition of borax, the third with the addition of diastase, the fourth with the addition of both diasta se and borax, it will be found that after several hours there will be no glucose present in the first and second; after the first quarter of an hour there will be a considerable and increasing quantity in the third; in the fourth, where the borax and diastase are both present, the conversion of the starch into glucose does not take place.

Malt suspended in water quickly yields an abundance of glucose if heated to 70° C., but the addition of borax arrests this action. With malt, water and borax, traces only of glucose are observed, which are probably due to its pre-existence in the malt.

Borax interferes also with the action of myrosin. Flour of black mustard suspended in water, exhales almost immediately the odour of essence of mustard, which increases in strength. Suspended in solution of borax, the odour characteristic of mustard meal is perceptible, which is due to the presence of a trace of the essence already formed; but this does not augment, and there is nothing that recalls the known effects of water upon mustard, and the plentiful production of irritating vapours to which it gives rise.

So that borax, by a property as remarkable as unsuspected, neutralizes the action of yeast, synaptase, diastase and myrosin. M. Dumas promises to make known its effects upon pepsin, and the bearings these curious re-actions have upon the theory of ferments.