TABLE I

Effect of Various Temperatures and Photo-periods on the Initiation of Flower Primordia in Beet and Barley

Temperature	50–55° F.		60–65° F.		70–75° F.	
Photo period	10 hrs.	15 hrs.	10 hrs.	15 hrs.	10 hrs.	15 hrs
Beet ..	Flowered	Flowered	Vegetative stage	Vegetative stage	Vegetative stage	Vegetative stage
Barley ..	Flowered	Flowered	Flowered	Vegetative stage	Vegetative stage	Vegetative stage

It is evident from Table I that in beet, in which sugars are mainly stored, plants flowered only at 50°–55° F., higher temperatures resulting in vegetative growth only. In barley, on the other hand, flowering took place even at 60°–65° F., but only in a 10-hour photoperiod, longer photoperiods and higher temperatures resulting in vegetative growth only. The reversible reaction :

Starch $\rightleftharpoons$ sucrose $\rightleftharpoons$ reducing sugars is greatly influenced by temperature. A lowering of temperatures favours the formation of sugars, and a rise in temperature results in the formation of starch at the expense of the sugars.

The detailed paper will be published elsewhere.

College of Agriculture, Benares Hindu University, *August* 22, 1947. P. B. MATHUR.

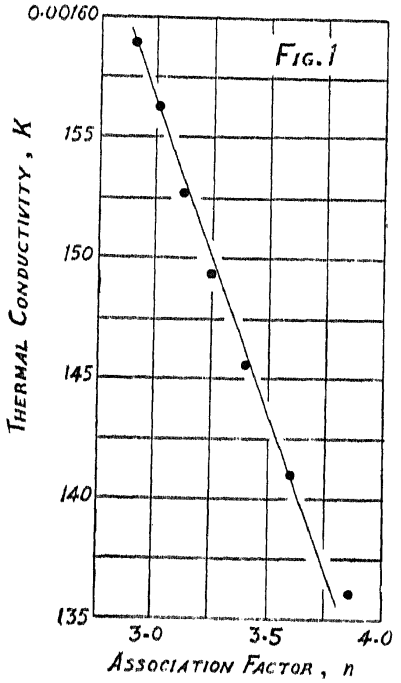
HEAT CONDUCTIVITY AND MOLECULAR COMPLEXITY OF WATER

THE author has shown previously[1,2] that the *positive* temperature coefficient of the heat conductivity of water can be accounted for by the dissociation of the complexes present in the liquid.

Jacob[3] measured the heat conductivity, K, of water at various temperatures t between 7°·4 C. and 72°·6 C. Table I contains values of K for the liquid at different temperatures, read off from Jakob's plot of K against t; the association factors n are due to Ramsay and Shields[4] corrected by Macleod.[5] In Fig. 1, K is plotted against the corresponding n. It will be seen that *Ceteris paribus*, the heat conductivity of water, is sensibly a linear function of its degree of association. The fact that so simple a relationship should appear, between the two otherwise unrelated phenomena, lends support to the author's view regarding the *positive* temperature coefficient of water.

TABLE I

t (°C.)	K	n
10	0·00136	3·86
20	0·00141	3·60
30	0·001455	3·40
40	0·001493	3·24
50	0·001527	3·12
60	0·001563	3·01
70	0·001589	2·90



Chemistry Department, Benares Hindu University, *September* 5, 1947. S. R. MOHANTY.

1. Mohanty, S. R., *Proc. Ind. Sci. Cong.*, 1947, **3**, *Phys. Sec.*, 26. 2. —, *Curr. Sci.*, 1947 **16**, 55. 3. Jakob, M., *Ann. der Phys.*, 1920, **63**, 537. 4. Ramsay W., and Shields, J., *J. Chem. Soc.*, 1893, **63**, 1089 5. Macleod, D. B., *Trans. Faraday Soc.*, 1925, **21**, 145.

PRODUCTION OF VITAMINS OF THE B-GROUP BY *B. SUBTILIS* GROWN ON SYNTHETIC MEDIUM

IN the preparation of bacterial amylases, the enzyme is usually precipitated by either progressive salt saturation or addition of miscible organic solvents. When alcohol is used for precipitation, it has been found that the