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Dept. of Botany, GADADHAR MISRA.
University of Allahabad,
September 14, 1949.

1. Pal, B.P., and Murty, G.S., *Ind. Jour. Genet. and Pl. Breed.*, 1941, **1**, 61-86. 2. Kar. B.K., *Nature*, 1946, **157**, 811. 3. Chinoy, J.J., and Nanda, K.K., *Ind. Jour. Agric. Sci.*, 1946, **16**, 390-399. 4. Pugh, B.M., *Allahabad Farmer*, 1945, **19**, 131-142. 5. Ranjan, S., *Proc. Ind. Acad. Sci.*, 1940, **12**, 62-68.

EFFECT OF VERNALIZATION AND PHOTOPERIODIC TREATMENTS ON GRAIN DEVELOPMENT IN WHEAT

HIGHLY significant negative correlations between yield, 1000-grain weight and mean maximum temperature of the ripening period have already been reported elsewhere.[2] When the temperature of the ripening period exceeded a certain level the grain filling processes in wheat were affected and as a consequence of which the grain remained shrivelled and the yield was reduced.

In order to confirm the general applicability of the abovementioned result as well as to make sure that the effect of the temperature of the ripening period on yield and 1000-grain weight of wheat is paramount over other factors, vernalization and photoperiodic treatments were given to a number of wheat varieties selected from different flowering classes, for accelerating or retarding their developmental processes and thus synchronizing their ripening periods, either with a lower temperature range during February-March (75-80° C.), or with a higher temperature range during April-May (90-95° C). Details of some of these experiments have already been given elsewhere.[1,3,4] When flowering in early wheat varieties, like N. P. 165, Khapli and others, was delayed in order to shift the ripening period to hotter months, the yield per plant was reduced to 3-5 g. from 10-15 g. and 1000-grain weight to 20-25 g. from the normal figure of 40-45 g. The ripening period was also shortened from 50-60 days to 30-35 days. On the other hand, when flowering was accelerated in late varieties like Yeoman II, Kubanka, Vaneum Yakub, and others, by vernalization and photoperiodic treatments, thus making it possible for these varieties to ripen their grain in February-March, it was found that the yield increased from 2-4 g., to 7-10 g., the 1000-grain weight from 15-20 g to 40-45 g. The ripening period was considerably lengthened from 20-30 days to 40-60 days due to lower temperature.

The usefulness of this physiological method of varying environmental conditions may be seen from the fact that the conclusions arrived at earlier[2] have been repeatedly confirmed during the last eight years by experiments on vernalization and photoperiodic responses of wheat carried out at the Indian Agricultural Research Institute, New Delhi, and also at the University of Delhi, Delhi.

Botany Department, J. J. CHINOY.
University of Delhi,
Delhi,
October 11, 1949.

1. Chinoy, J.J., and Nanda, K. K., *Indian J., Agri. Sci.*, 1946, **16**, 390. 2. Chinoy, J. J., *Nature* (London), 1947, **159**, 442. 3. —, *Ibid.*, 1949 (in press). 4. Nanda, K. K., and Chinoy, J. J., *Curr. Sci.*, 1945, **14**, 241.

PROLIFERATION OF GRASS SPIKELETS

IN *Current Science*, August 1949, 18, No. 8, 301-02, a letter appears entitled 'Proliferation of Spikelets in *Pennisetum Polystachyum*'. For those interested, the following reference may be useful : —

Jenkin, T. J., "Notes on Vivipery in *Festuca Ovina*", *Report for 1921 of the Botanical Society and Exchange Club of the British Isles*. T. Buncle & Co., Arbroath, 1922.

T. J. JENKIN, D.Sc.,
Director.

Welsh Plant Breed. St.,
Aberystwyth, Wales,
September 28, 1949.

OCCURRENCE OF TURIONS IN *ELODEA CANADENSIS*

Elodea canadensis Michx is a rapidly multiplying common pond weed in South India. Specimens collected during summer when the ponds were rapidly drying up, showed small tuberous structures (Figs. 1 & 2) which proved to be turions reported in the pond weeds of temperate regions.[1]