tent is only exceeded in the Scyphomedusæ (for example, Aurelia, 95·56 per cent water[3]).

Further, the density of the ripe ova of *Psammechinus miliaris* (syn. *Echinus miliaris*) has also been estimated and the sinking factor found to be 1005, while that of rather less ripe ova from *Echinus esculentus* was found to be 1016 with a water content of 84· per cent. By the time these ova have been fertilized and attained the free-swimming blastula stage their sinking factor will be considerably reduced, but it is doubtful if it will become quite so low as that of the Ctenophores, nor is there likely to be so high a water content in the absence of mesoglœa, but since their volumes will be many thousands of times smaller than that of the Ctenophores Gray's statement is again fully confirmed.

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[1] Lowndes, A. G., NATURE, 141, 289 (1938).
[2] Gray, J., "Ciliary Movement", Camb. Univ. Press, p. 94 (1928).
[3] Lowndes, A. G., NATURE, 150, 234 (1942).

A Red Colouring Matter from the Green Leaves of Spinach Beet

THE following observations, originally made in the course of domestic culinary operations, appeared worthy of note, especially as present circumstances preclude me from devoting further attention to the matter.

If an aqueous extract of the green leaves of the so-called spinach beet, made by heating them with a small amount of water (actual boiling is not necessary, but not detrimental), is *cooled* and then treated with a small amount of an aqueous extract of raw potato, in the course of a few minutes a strong brownish-red coloration develops, increasing to a maximum in about a quarter of an hour. As the original extract of the leaves is a pale yellowish-green, this change is most striking.

This red colour is changed to a bright yellow by dilute caustic soda, and is largely but not entirely restored by acidification with dilute hydrochloric acid. On shaking the red solution with various solvents the colour appeared to be insoluble in ether and in chloroform, but slightly soluble in *iso*-butyl alcohol.

The reddish colour extracted from ordinary beetroot leaves by hot water (raw potato not being required), while not apparently identical in shade, behaved similarly with respect to acid and alkali. This appears to be similar to the behaviour of beet pigment recorded by Ainley and Robinson[1].

It appears essential that the potato extract be not heated, as no production of a red colour is observed on cooking the two vegetables together, nor is it obtained if the spinach beet extract is not cooled to a tepid state before adding the potato extract. This suggests that the colour is liberated from a colourless precursor by the action of some enzyme in the potato. A further suggestion at once occurs, that the difficulties reported by Ainley and Robinson[1] in the extraction of the colour from beetroot itself might be partially solved by the use of raw potato.

The phenomenon here reported was observed with the leaves of spinach beet grown from seed supplied by Messrs. Boots, and with two varieties of potato, Majestic and an unknown variety.

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[1] *J. Chem. Soc.*, 448 (1937).

Mechanism of Sensitivity Changes of Sense Organs

WE have read with much interest the communication from Dr. K. Kekcheev in NATURE of October 24. Just before the War, in an attempt to measure quantitatively the organoleptic properties of cheese, we were engaged in some experiments on the effect of olfactory stimuli on thresholds for monochromatic light for the dark-adapted eye. We appeared to get both increases and decreases in threshold with certain subjects and stimuli, and as soon as we became aware of Kravkov's work we planned to continue and extend our experiments. At our suggestion the late Mr. F. J. Dix constructed an apparatus in which the stimuli could be carefully controlled and, following the results of Schiller[1] and Kravkov[2], ensuring that the subject was isolated from noise. Mr. Dix began to accumulate data which substantiated our earlier findings as well as those of Kravkov for olfactory stimuli, but his untimely death, as well as the need for concentrating all our efforts on work which seemed to be of more immediate importance in our industry, has precluded the continuation of the investigation since then.

Although we did not feel at the time (September, 1940) that the number of our data would justify statistical analysis and publication, it seems to us, now that our Soviet colleagues are developing this field, that it would be helpful to place on record our own seeming confirmation of one of the phenomena which they have described. Unfortunately, we are not acquainted with the work of Makarov quoted by Kekcheev.

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[1] Schiller, P. V., *Brit. J. Psychol.*, 25, 463 (1934-35).
[2] Kravkov, S. V., *Proc. Acad. Sci. U.S.S.R.*, 22, 64 (1939).

Demonstration of Action of Ciliated Epithelium of the Frog's Mouth

IN demonstrating the action of ciliated epithelium to students, we have in the past used the opened mouth and gullet of a frog and allowed powdered cork to be dropped on to the upper part of the mouth. In about three minutes the cork has been carried right down the œsophagus. We have just performed the experiment, using lycopodium in place of the cork, and it works very well. Advantages of the lycopodium are: (1) uniform powder; (2) not miscible with water or mucin; (3) coloured yellow, very easily seen; (4) very light in weight.

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