

Occurrence of *Eucrangonyx gracilis*

IN NATURE of February 20, there appeared an interesting letter from Mr. G. I. Crawford recording the amphipod, *Eucrangonyx gracilis*, from the filter beds of the Metropolitan Water Board at the Lea Bridge Works.

It may be of interest to record that some years ago I received from Dr. Robert Gurney, of Oxford, an amphipod which was found in a glass of water drawn from the domestic supply of a house in Hackney. The only species with which I could identify the specimen was *Eucrangonyx gracilis*, but the occurrence appeared to me to be so unusual and puzzling that I refrained from recording the species

pending confirmatory evidence in the shape of more material. It was impossible to trace the householder who found the specimen originally and it seemed possible, though not very probable, that the specimen may have had an entirely different provenance. Mr. Crawford's letter solves all my difficulties, and it is very satisfactory to have the little mystery cleared up. The specimen which I examined was undoubtedly *E. gracilis*, and its provenance the water supply of the Metropolitan Water Board.

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Points from Foregoing Letters

A DESCRIPTION of the spectra of 'northern lights', both red and the 'sun-lit', usually feeble, grey-violet auroras, simultaneously photographed from several Norwegian stations, is supplied by Prof. Carl Störmer. The height of the red auroras was mainly between 100 km. and 500 km., whilst some of the 'sun-lit' auroras had their summit above 800 km. and in one case reached 1,100 km. above sea-level.

Photographs showing patterns obtained by means of a Fabry-Perot interferometer with radiation scattered by phenol, butyl alcohol and acetone are submitted by Sir C. V. Raman and B. V. Raghavendra Rao. The pattern given by phenol is indistinguishable from that of the incident radiation and indicates, according to the authors, that in such highly viscous liquids the sound waves of high frequency necessary for reflecting the incident light are absent, while in the more fluid acetone the greater intensity of the components shifted by the Doppler effect indicate the existence of organized sound waves, as part of the thermal agitation.

Referring to the history of the thermometer, Dr. Kirstine Meyer quotes from Rømer's "Adversaria" to show that he used, as lower fixed point ($7\frac{1}{2}^{\circ}$ on his scale), the melting point of snow or crushed ice, and not a freezing mixture of ice and salt. Dr. Newton Friend agrees that Rømer used melting ice as control for his point at $7\frac{1}{2}^{\circ}$, but considers that his original scale must have been based upon the temperature given by ice and salt or ice and sal ammoniac, which closely agrees with the zero point on Rømer's scale.

Curves showing the changes in the absorption spectrum of a solution of visual purple after exposure to light, and afterwards on standing, are submitted by Dr. G. Wald. These, he considers, show the common belief, that the orange colour brought about exposure to light is due to a mixture of unbleached visual purple and final yellow product, to be mistaken. The orange colour, he states, is itself a new pigment which fades to yellow retinene in complete darkness.

Dr. N. Hamilton Fairley reports in the plasma of severe cases of blackwater fever a new pigment which hitherto has been mistaken for methæmoglobin. The pigment has never been found within the corpuscle, fails to appear in the urine, and by its spectrogram and a number of chemical reactions is readily differentiated from methæmoglobin. It may be readily produced *in vitro* by incubating a solution of oxyhæmoglobin and plasma for 48 hours at 37° - 40° C. Pseudo-methæmoglobin is suggested as an appropriate name for the new pigment.

The effect of testosterone propionate in inducing mating behaviour in young rats which had been castrated when young (before the beginning of sexual behaviour) are described by Dr. H. A. Shapiro.

When living cells are injured or killed by ultra-violet light, they produce substances which stimulate respiration, etc., according to experiments by J. C. Fardon, R. J. Norris, Prof. J. R. Loofbourow and Sister M. V. Ruddy. From irradiated yeast, also from liver, kidney and embryo tissue active substances were obtained which could pass through a filter or dialysing membrane. Different orders of potency with regard to stimulation of respiration, proliferation and fermentation were observed, which suggests the existence of at least three substances responsible for the effects.

Experiments described by L. Shubnikov and I. Nadhutin show that a single spherical crystal of tin in the 'intermediate' supraconducting state (when the magnetic permeability is no longer equal to zero) possesses anisotropic supraconductivity. When the direction of the current is parallel to the external field, the sphere remains supraconductive even when the magnetic permeability is near unity; in the direction perpendicular to the field, supraconductivity vanishes at field strength $2/3 H_k$.

Bands in the red, yellow-green, green and blue have been obtained by Dr. R. W. B. Pearse and A. G. Gaydon in the spectrum of an electric discharge between manganese poles in a hydrogen flame. These bands are attributed to manganese hydride, MnH. The nature of the electronic transitions are discussed in relation to the levels of the manganese atom.

The analysis of a band spectrum of mercurous chloride (HgCl) vapour, in Dr. K. Wieland's opinion, supports the view that the ground state of this molecule is built up from unexcited atoms. This does not agree with results from the spectrum of CdF obtained by Samuel and his co-workers, who suggest that the ground state of CdF, like that of all diatomic oxides and halides of the second group, is formed from a metal atom in an excited term only.

The molecular constants of gold deuteride have been calculated by S. Imanishi from the arc spectrum obtained between gold electrodes in heavy hydrogen gas.

W. E. Benham gives a simple electronic analysis yielding the electron convection current for any periodic total current waveform. The solution is in terms of the instantaneous electron transit time, and permits calculation of the n th harmonic in a valve if the transit time is known to the $(n - 1)$ th order only.