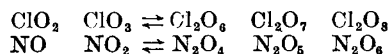
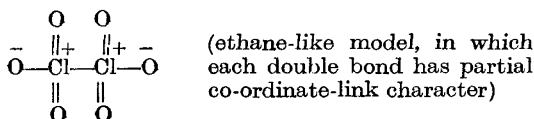


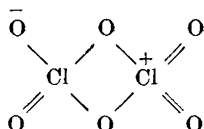
plexes, and the molecule HI_3O_3 . Such a ring is probably also present in chloride hexoxide (Cl_2O_6), as might be expected from the formal analogy between the pairs of compounds:



As usually written:



the structure of Cl_2O_6 violates the adjacent charge rule. The alternative structure



here proposed is similar to the structure iv above for nitrogen peroxide. There are four possible resonance states, not counting those in which some or all of the double bonds are replaced by co-ordinate links. In the structure shown, the right-hand Cl atom has the same valency state as the Cl in the tetrahedral $[\text{ClO}_4^-]$ ion, and the left-hand atom is pentavalent as in the pyramidal $[\text{ClO}_3^-]$ ion. Hence the chlorine atoms are probably tetrahedral, in which case chlorine hexoxide is geometrically analogous to the dimeric aluminium halides, and to the derivatives $\text{M}_2\text{H}_2\text{R}_6$ ($\text{M} = \text{B}$ or Ga , $\text{R} = \text{H}$ or alkyl) of boron and gallium^{8,9}. However, the vibrational spectrum of Cl_2O_6 has not been measured, and there is no other direct experimental evidence yet for either structure.

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Feb. 24.

¹ Maxwell, Mosley and Deming, *J. Chem. Phys.*, 2, 331 (1934).

² Hendriks, *Z. Phys.*, 70, 699 (1931)

³ Sutherland, *Proc. Roy. Soc., A*, 141, 342 (1933).

⁴ Schaffert, *J. Chem. Phys.*, 1, 507 (1933).

⁵ Giauque and Kemp, *J. Chem. Phys.*, 8, 40 (1938).

⁶ Pauling, "The Nature of the Chemical Bond" (Cornell University Press, 1940), p. 257.

⁷ Harris and King, *J. Chem. Phys.*, 2, 51 (1934)

⁸ Longuet-Higgins and Bell, *J. Chem. Soc.*, 250 (1943).

⁹ Bell and Longuet-Higgins, *Proc. Roy. Soc.* (in the Press).

Women with Colour-Blind Relatives

AN experiment was carried out on 98 women and 104 men with 'normal' red-green vision, on 4 women and 14 men who had various degrees of red-green blindness, and on 3 men who are green-anomalous because they reject the normal Rayleigh equation by a wide margin. The experiment was along the lines of Collins's research on the Rayleigh equation with rotating disks¹, and the details of the technique and other results will be published later.

The 'normal' women subjects were all asked to give information about any colour-blind relatives so far as they were able, and some of these relatives were among the colour-blind men and women tested. Colour-weak subjects, like the colour-blind, accept a wider range of matches in the Rayleigh equation

than do the most sensitive normal subjects. These differences in range were measured by an efficient psycho-physical technique, together with the usual deviations in the Rayleigh equation.

If we pick out those women who pass the Ishihara test with little or no difficulty and therefore are not colour-blind, who accept or almost accept the normal Rayleigh equation and are therefore not anomalous, but who can make at least twice the modal range of matches in the Rayleigh equation carried out in this research, then the accompanying table can be constructed. For this table chi-squared is about 20, calculated from the marginal totals, showing that it is extremely unlikely that such differences could have been obtained by chance. The table is strong evidence that women who are blood-relatives of colour-blind subjects, and who, accordingly, must often be potential if not actual mothers of colour-blind sons, have a decided and measurable red-green weakness much more frequently than women in general.

WOMEN WITH 'NORMAL' RED-GREEN VISION.		
	Known C-B relative	No known C-B relative
Twice modal range or more	11	7
Less than twice modal range	10	70

I am indebted to Dr. Mary Collins for her advice in setting up the experiment and to Mr. Joseph F. Simpson for frequent help.

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Feb. 22.

¹ Collins, M., *Brit. J. Psych.*, 19, 4, 387 (April 1929).

Colonial Geological Surveys

IN his article on Colonial Geological Surveys in NATURE of March 4, Mr. V. A. Eyles gave a useful résumé of recent discussions. There are, however, some further considerations to be noted. The figures he quoted from Sir Edmund Teale's paper of the results of mining operations, following upon the activities of Colonial Geological Surveys, do not include any statement of the amount and disposal of mining profits, or of the proportion of such profits set aside for the benefit of the local inhabitants as compensation for the loss of their national wealth. Thus arises the impression in some Colonial circles that Geological Surveys exist mainly for the benefit of outside mining interests—an erroneous impression which leads to friction between Geological Surveys and other Government Departments, administrative, agricultural, educational, etc., more directly engaged in promoting the welfare of the local inhabitants. Some change in Colonial policy after the War seems, therefore, desirable.

It is to be hoped that in the future the rights of ownership of their own mineral wealth by the people of the Colonies will be fully recognized, that the pre-war policy of exploitation of minerals by outside interests will become a matter of history and that the mineral resources of the people will be worked with the approval and for the benefit of the people, either by the people themselves or by the Colonial Governments on their behalf.

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