

Further work is in progress and a detailed paper will appear elsewhere.

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- <sup>1</sup> Mandell, *Proc. Roy. Soc.*, 1927, **116**, 623.  
<sup>2</sup> Sibaiya, *Proc. Ind. Acad. Sci. (A)*, 1938, **8**, 393.  
<sup>3</sup> Schaaffs, *Zeits. f. Physik.*, 1937, **105**, 658.  
<sup>4</sup> Sibaiya and Narasimhaiya, *Ind. Sci. Cong.*, 1941, and *Mys. Univ. Jour.* (under publication).  
<sup>5</sup> Narasimhaiya and Doraiswami, *Ind. Jour. Phys.*, 1940, **14**, 187.

#### VISIBLE ABSORPTION BANDS OF MERCURIC CHLORIDE

WHILE investigating the absorption spectra of the halides of various elements, a characteristic band system has been observed in the visible region with mercuric chloride, which has not been previously recorded. The substance is heated in a steel tube, open at both ends, in a coke furnace to a temperature of about 1000° C. The bands extend approximately between  $\lambda$  4900 to  $\lambda$  4200 and consist of sequences of distinct doublet bands. Three of the sequences are well developed. They are ascribed to the diatomic molecule HgCl and are considered to form part of the class III system of bands which are reported to be poorly developed in emission by Wieland.<sup>1</sup> A full account of the results will be published shortly.

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<sup>1</sup> Wieland, *Helv. Phys. Acta.*, 1929, **2**, 46.

#### ULTRA-VIOLET EMISSION BANDS OF MERCURIC CHLORIDE

THE ultra-violet band spectrum of mercuric chloride as excited in a discharge tube has been photographed with a Hilger Quartz-

Littrow spectrograph. The band system between  $\lambda$  2900– $\lambda$  2700 reported first by Wieland<sup>1</sup> as due to the triatomic molecule HgCl<sub>2</sub>, has been studied in detail. The assignment of this system by Cornell<sup>2</sup> to the diatomic molecule HgCl, and the vibrational analysis suggested by him have been confirmed. Additional groups of bands lying towards the short wavelength of each of the Q<sub>1</sub> sequences, have been newly classified as forming the Q<sub>2</sub> sequences of the same system giving an electronic doublet separation of about 90 cm.<sup>-1</sup> The entire system is ascribed to the transition <sup>2</sup>Π – <sup>2</sup>Σ. The lower state, <sup>2</sup>Σ, is probably the same as the lower level of Wieland's class I system between  $\lambda$  2650 –  $\lambda$  2400. The vibrational constants, as derived from the Q<sub>2</sub> heads, are,

$$\begin{aligned} \omega_e' &= 287.8 & x_e' \omega_e' &= .5 \\ \omega_e'' &= 281.0 & x_e'' \omega_e'' &= .5 \\ \nu_e &= 36564.2. \end{aligned}$$

Details of the analysis will be published elsewhere.

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- <sup>1</sup> Wieland, *Helv. Acta. Phys.*, 1929, **2**, 46, 77.  
<sup>2</sup> Cornell, *Phys. Rev.*, 1938, **51**, 341.

#### INFANTILE MORTALITY AND BERIBERI

IN India beriberi as a serious public health problem is confined to the Northern Circars districts of the Madras Presidency. The disease is due to vitamin B<sub>1</sub> deficiency and is usually associated with the consumption of a diet consisting mainly of raw rice from which the outer layers, which contain most of the vitamin present in the grain, have been removed by machine-milling. About 70 per cent. of the rice-eating population of the Madras Presidency consumes machine-milled rice. The important difference between the dietary habits of the Northern Circars and those of the rest of the province is that in the former area raw rice is preferred to parboiled rice by the mass