

Experiments are under way in this Laboratory to test further the instability of hydroxycyclopropane derivatives.

DEPARTMENT OF CHEMISTRY
BROOKLYN COLLEGE
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LOUIS SATTLER

PYRIMIDINE AZO DERIVATIVES

Sir:

There has just come to our attention the article by Johnson, Baudisch and Hoffman, entitled "Ueber die Bildung von Diazo-uracilanhydrid aus Amino-uracil" ("Concerning the Formation of Diazo-uracilanhydrid from Amino-uracil") in the November, 1931, number of the *Berichte* [*Ber.*, **64**, 2629-2631 (1931)]. Since this article is entitled a "Vorläufige Mitteilung (Preliminary Communication)" and concludes with the sentence "Die Versuche sollen fortgesetzt werden (The experiments are to be continued)," it seems desirable, for the sake of avoiding, so far as may be possible, overlapping of work and duplication of effort, for us to report that prior to the appearance of this article in the *Berichte* we had already completed an investigation of five different types of pyrimidine azo derivatives, and that an article covering this research will appear shortly.

Our studies have included the following groups of reactions: (1) the coupling of aromatic diazonium salts with hydroxypyrimidines; (2) the coupling of diazopyrimidines with aromatic phenols and amines; (3) the coupling of diazopyrimidines with hydroxypyrimidines; (4) the condensation of hydroxypyrimidines with hydrazines, and (5) the condensation of hydrazinopyrimidines with hydroxypyrimidines.

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MARSTON T. BOGERT
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DILUTE HYDROCHLORIC ACID SOLUTIONS AND THE DEBYE-HÜCKEL THEORY

Sir:

Whether the Debye-Hückel theory is in entire quantitative agreement with the facts even for dilute 1:1 aqueous strong electrolytes at ordinary temperatures is a question which is not yet regarded as closed by all investigators. This is clearly shown in the recent review by Lange and Streeck [*Z. Elektrochem.*, **37**, 698 (1931)]. Davies, in "The Conductivity of Solutions," New York, 1930 and elsewhere has repeatedly expressed the view, supported by some evidence, that in the case of monobasic acids

the limiting value of the ratio of $-\log f$ to $c^{1/2}$ is not 0.5 as required by the theory but something nearer to 0.38.

Since both Davies and Lange and Streeck discuss hydrochloric acid, and conclude that in this case the data are inadequate to decide the question, new evidence on this substance should be particularly welcome. Using the value of E° given by Carmody in his recent paper [THIS JOURNAL, 54, 188 (1932)] a simple calculation yields as values of the ratio of $-\log \gamma$ to $m^{1/2}$: 0.47, 0.45, 0.43, 0.45, 0.47, 0.47 and 0.47 for the seven lowest molalities studied by Carmody, ranging from 0.005 to 0.0003 molal. The mean value 0.46 is slightly lower than the Debye-Hückel value, as has been noted in many other cases, but is not inconsistent with it in view of the experimental uncertainty of the e. m. f. measurements. Carmody's careful investigation certainly lends no support to Davies' views.

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OXYACIDS OF FLUORINE

Sir:

When fluorine is passed into a 50% solution of potassium hydroxide cooled to -20° , potassium fluoride separates and the supernatant liquid actively liberates iodine from a solution of potassium iodide. This liquid maintains its oxidizing power for several days at room temperature, even after air has been passed through it for some time, and even after being heated for three hours at 60° . These results seem to preclude the possibility of the oxidation being due to ozone.

To test this point still further, ozone was passed through a cold solution of lithium hydroxide for a considerable time. The liquid showed no oxidizing power. When, however, fluorine was passed into a solution of lithium hydroxide under identical conditions, the resulting liquid was strongly oxidizing, and when this solution was evaporated to dryness on a water-bath and the residue was dissolved in water, the solution still showed strong oxidizing power.

Similarly, a solution of calcium hydroxide was found to be unaffected by ozone, but to have a marked oxidizing action after treatment with fluorine.

These alkaline solutions retained their oxidizing character even after acidification with sulfuric acid, which indicated the presence of an oxyacid of fluorine.

To prepare a solution of the free oxyacids, fluorine was passed into a suspension of calcium carbonate in cold water, and the contents of the