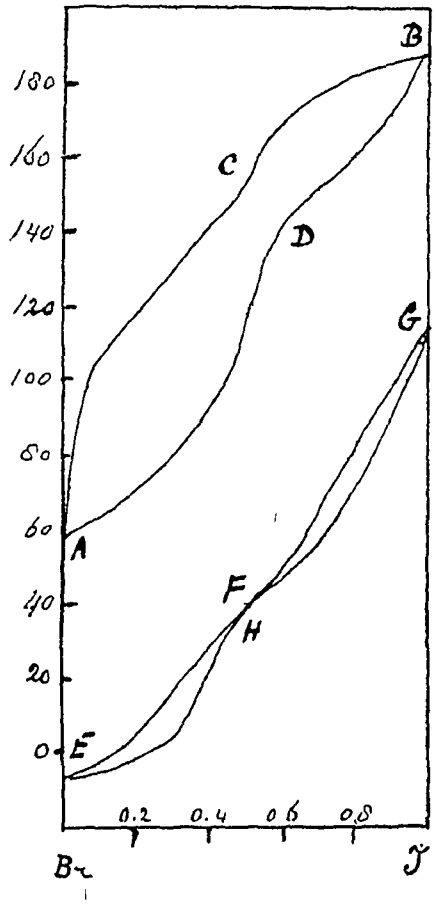
the *m*- and *p*-compounds, when heated for a short time with this reagent in a methyl alcoholic solution, are quantitatively converted into the corresponding nitro-anisols. In the case of benzene dinitrofluoride (Fl. $NO_2 : NO_2 = 1 : 2 : 4$) the progressive action of the sodium methylate was studied by the method employed by LULOFS for the corresponding Cl-compound and it appeared that the reaction was quite completed within a few minutes. Owing to this great celerity, accurate quantitative measurements were very difficult; but it was found that the reaction constant in round numbers is 600 times larger than with the chlorine compound.

Groningen, Sept. 1903. Chem. Lab. University.

Chemistry. — "*The system Bromine + Iodine.*" By Prof. H. W. BAKHUIS ROOZEBOOM.

(Communicated in the meeting of September 26, 1903.)



The elements chlorine and iodine yield two chemical compounds which have been accurately investigated by STORTENBEKER. Up to the present the relations of the other halogens remained in obscurity. The system Bromine and Iodine investigated by Mr. MEERUM TERWOGT gave, provisionally, the results represented in our temperature-concentration figure.

First of all the two boiling lines ADB and ACB, which were both determined at 1 Atm. pressure. The first line represents the boiling points of the series of liquid mixtures from 100% Br. to 100% I; the second line represents the vapours yielded by these mixtures. The corresponding points are situated on horizontal joining lines.

The figure shows that these curves are continuous, but

approach each other between 50 and 60% I. This case, therefore, is similar to the behaviour of the mixtures of Cl and S studied some time ago [1]), with this difference that for the composition S_2Cl_2 the lines nearly came into contact, whilst in this case the distance remains much greater.

The peculiar form of the boiling lines points, however, to the existence of combined molecules of the two elements. Whether these answer to the formula Br I cannot be decided from the form of this line, but perhaps better from the p,x-lines which will be studied afterwards.

Below the line ADB the region of the liquids is situated. These on further cooling deposit solid phases. These phenomena are represented by the two lines EFG and EHG. The second line shows the initial and the first line the final solidifying points. They form two continuous lines which however come into contact at 50 atom percent I.

A similar type of solidification points as a rule to mixed crystals.

The equality of the composition of liquid and solid at the concentration Br I — without this point being a maximum or a minimum — could, however, only be explained by assuming that Br I is a chemical compound.

Possibly this is the case, which has never as yet been satisfactorily proved, where a compound is mixable with both its components. We will endeavour to elucidate this matter by a determination of the density etc.

Chemistry. — "*On the action of emulsin.*" By Dr. R. O. HERZOG. (Communicated by Prof. C. A. PEKELHARING).

(Communicated in the meeting of October 31, 1903).

1. If we mix a solution of canesugar with invertin and determine the quantity inverted in definite times at a constant temperature, it appears that the inversion does not proceed as a reaction of the first order $\left(k = \frac{1}{t} l. \frac{a}{a-x}\right)$, the "constants" calculated from this equation increasing continuously during the period of the inversion. This might be explained by the increasing activity of the enzyme or by the influence exerted by the invert sugar formed.

V. HENRI [2]) has shown in an exhaustive paper that the latter is the cause and that the reaction proceeds according to the law

[1]) These Proc. June 1903.

[2]) Zeitschr. für physikalische Chemie **39**, 194 (1901).