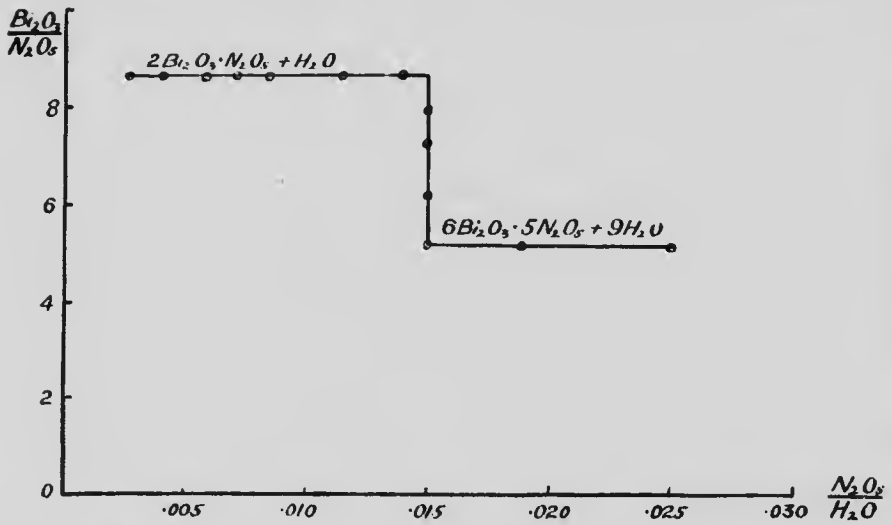
ponents may be found whose ratio in the solution, or precipitate, changes whenever the composition of the solution, or precipitate, changes, and only then; and since for the interpretation of the results it is only necessary to know whether the composition of solutions and precipitates remains constant or changes from experiment to experiment, it is sufficient to plot these ratios instead of the compositions themselves. An illustration is afforded by the following curve taken



from Mr. Allan's paper on the basic nitrates of bismuth. The abscissæ give the ratios between N_2O_5 and H_2O in the solutions, and the ordinates those between Bi_2O_3 and N_2O_5 in the precipitates.

The Mechanism.

Although a great deal of use has been made of the Phase Rule in classifying chemical reactions, and in the study of solutions and alloys, and more recently of such compounds as steel and the various commercial varieties of iron, comparatively little attention has been paid to the mechanism by means of which the results foretold by it are arrived at in the system. The subject is not only interesting in itself, but leads to an extension of the method of identifying chemical individuals among the basic salts, to the case where the precipitation is carried out by means of potash, ammonia, etc., although here the system no longer consists of three components only, and consequently the direct application of the Phase Rule in the manner just illustrated is not possible.