NOTES.

On the Precipitation of Metallic Gold.—The well-known way of precipitating gold by ferrous sulphate solution from an acid solution of gold chloride or by heating a solution of the latter salt with one of potassium nitrite, precipitates the gold as a dull brown heavy powder which settles slowly. The following method will precipitate the gold in one or two minutes and, strange to say, it will be in the form of a precipitate resembling silver chloride. To a solution of gold chloride in the proportion of 1 gram of salt to 30 cc. of water, a stick of potassium nitrite weighing about 5 grams is added. Then, without allowing it to dissolve, about 5 cc. of concentrated sulphuric acid are added. Brisk effervescence takes place with the liberation of the well-known nitrogen peroxide, the solution becoming brown. When the reaction has ceased another piece of potassium nitrite is added of the same size as the first, and the solution stirred until all reaction has ceased. The solution will now be very clear, having a pale blue tint while on the bottom of the beaker there will be seen a layer of dark brown nodules, which on account of their density can be easily separated from the solution by decantation. When dry, the color resembles that of ignited cadmium oxide only it is more yellow. The nodules are very friable when dry and can be fused to a yellow lustrous globule on charcoal with the aid of borax.

P. E. JAMESON.

1024 KIMBALL AVE., CHICAGO, ILL.

Preparation of Phosphorus Diiodide.—The methods of making this substance described in the literature and involving the use of yellow phosphorus are unpleasant to use and difficult to manage satisfactorily, if any considerable quantity is required. Having occasion to use quite a large quantity of PI_2 in the preparation of some compounds which we needed for other work, the following method was adopted as being easy of manipulation, and avoiding the violence of the reaction between iodine and yellow phosphorus.

Fifty grams of iodine are mixed with 4 grams of red phosphorus in a 200 cc. flask. The flask is then heated with a free flame until the mixture is thoroughly melted. It is then allowed to cool to 60°, and 2.5 grams of yellow phosphorus are added in small pieces. When all the yellow phosphorus is added the mass

becomes solid. By this means phosphorus iodide can be made in any desired quantity quickly and with safety.

HOWARD W. DOUGHTY.

BUREAU OF STANDARDS, WASHINGTON, D. C.
May 19, 1905.

REVIEW.

RECENT WORK IN BIOLOGICAL CHEMISTRY.

BY P. A. LEVENE.

Received September 27, 1905.

THE activity of biological chemists since the time of the appearance of the last review (This Journal, March, 1904) was still greater than it had ever been before. The principal problems for investigation continued to be the same as in previous years. However, in the preceding years, the progress was more marked in the knowledge of the chemical nature of substances having a biological interest. Also in the past year, considerable contributions were made in this direction, but the work was mostly a continuation of that already begun in preceding years. Noteworthy for the last year is the renewed interest in problems of metabolism and in those of enzyme action. Indeed, theories of metabolism totally contradictory to those generally accepted were adduced by many writers, and it was suggested that the existing principles of nutrition have to be revised. The study of enzyme action was very fruitful in its application to the study of physiological problems. It was attempted to explain the mechanism of many functions by enzyme action.

The chemical study of the tissue components again was directed principally to that of proteid. In preceding years the progress of the knowledge of the composition of the proteid molecule was achieved through the introduction of Fischer's method of isolating and of separating amino acids. By the aid of Fischer's process it was demonstrated that individual proteids differ in the nature and more so in the proportion of the monoamino acids entering into their molecules. The study of the proteid molecule has been further facilitated by the efforts of Skraup (*Z. physiol. Chem.*, **42**, 274 (1904)). This author has observed that only monoamino acids are readily esterified by treatment with alcohol and hydrochloric acid gas, and that many diamino acids, or oxyaminoacids remain unchanged by the process. Skraup has made the further observation that hydrochloric ethyl esters of amino acids are soluble in a mixture of alcohol and ether. Thus it was made possible to accomplish a separation of substances which esterify readily from those that do not. The last substances could further be separated by means of fractional precipitation with phospho-