

acid. Sulfates are precipitated with barium chloride and the filtrate is made ammoniacal, then acid with acetic acid and phosphates are precipitated with ferric chloride. The precipitate is dissolved in nitric acid and the phosphoric acid is precipitated with ammonium molybdate and the yellow precipitate is titrated. The filtrate from the ferric acetate precipitate is treated with sulphuric acid to remove the barium and with hydrogen sulfide to remove the copper and the filtrate is evaporated to small volume. Calcium is precipitated in a centrifuge tube as oxalate, washed and titrated. The supernatant liquid and washings are evaporated, heated to remove ammonium salts and the magnesium is precipitated in a centrifuge tube as magnesium ammonium arsenate. This is washed and then dried, *in vacuo*, over sulfuric acid. It is dissolved in acid, transferred to a distillation flask and the ammonia determined by distillation and Nesslerization. The supernatant liquid and washings are treated with hydrochloric and hydrobromic acids, evaporated to dryness, freed of ammonium salts and arsenic, sulfuric acid is added and the potassium and sodium are weighed as mixed sulfates in a platinum dish. Potassium is then precipitated as the cobaltinitrite and weighed.¹

30 (1490)

A benign tumor in *Drosophila*.

By MARY B. STARK. (by invitation).

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In a strain of flies with a lethal tumor, *i.e.*, a tumor occurring in one half of the males and causing their death, another tumor has appeared as a mutation. The new tumor differs from the lethal one in that it is not sex-linked, *i.e.*, it appears in females as well as males, and further in that it does not cause the death of the flies in which it occurs. Linkage experiments show that one at least of the genes essentially for tumor development is in the third chromosome closely linked to *dichaete*.

¹ Garola and Braun, *Annales de falsifications*, 10, 572, 1917.

The tumor may occur in any segment of the larva but seems to occur more often in the twelfth and thirteenth segments. When the tumor occurs in the thoracic region, there may be an ingrowth of tumor cells into the imaginal discs of the appendages checking the development of these parts.

The cells of the tumor are rounded or polygonal in shape and show the presence of pigment.

31 (1491)

The suitability of the "Bachman Test" for water-soluble B.

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Two recent publications by Drs. Bachman¹ and Williams² dealing with the vitamine requirements of yeasts suggest that the methods developed are adaptable to quantitative measurement of vitamine content (B variety). At the suggestion of the senior author Miss Stevenson has conducted experiments with both methods and in this report are presented some of the results with the Bachman test.

Briefly this method consists in planting yeast cells in a culture medium (Nageli's solution: 100 c.c. distilled water; 10 gms. dextrose; 1 gm. ammonium nitrate; 0.05 gms. calcium phosphate; 0.5 gms. potassium acid phosphate; 0.25 gms. magnesium sulfate) contained in a Durham or Smith fermentation tube and incubating the tubes at 28–32° C. to obtain gas formation. To these tubes are added vitamine "B" extracts from various sources and Dr. Bachman's results showed that in the absence of such extracts gas formation either fails to take place or at least very slowly.

Our experiments aimed to confirm Dr. Bachman's results, to determine whether the method gave promise of use quantitatively and whether it might be used to detect the "B" vitamine qualitatively. The results of our experiments follow:

¹ "The " Vitamine Requirements of Certain Yeasts," by Freda Bachman, *Jour. n. Biol. Chem.*, XXXIX, 235 (1919).

² "A Simple Biological Test For Vitamines," by R. W. Williams, *Journ. Biol. Chem.*, XXXVIII, 465 (1919).