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A method for the determination of calcium in tissues.

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The determination of calcium in tissues is almost invariably carried out on the ash. Ashing is, however, a time consuming and laborious procedure, and is in addition distinctly expensive on account of the platinum ware required.

We have, therefore, worked out a method whereby ashing is replaced by autoclave digestion. Ten grams of tissue is digested with 50 cc. of 0.1 N sodium hydroxide for two hours at 200° C. The solution is then acidified with hydrochloric acid, diluted to 60 cc., allowed to stand for at least 30 minutes, and filtered by suction through a Gooch crucible provided with an asbestos mat. An aliquot of this filtrate contained in a conical centrifuge tube is made alkaline to methyl red by the cautious addition of ammonium hydroxide and the calcium precipitated by means of ammonium oxalate. After one hour the tube is centrifuged and the supernatant liquid poured off as completely as possible, care being taken to avoid disturbing the precipitate.

The precipitate is dissolved in normal sulfuric acid and 0.1 N potassium permanganate added drop by drop until the solution is pink. After a few minutes there is added 5 cc. of water, and a sufficient amount of ammonium hydroxide to bring the solution to the neutral point of methyl red. After standing at room temperature for at least one hour the tube is centrifuged, the supernatant liquid removed, and the precipitate washed with 30 cc. of ice cold distilled water. The precipitate is then dissolved in 5 cc. of normal sulfuric acid and the calcium oxalate titrated with 0.01 N K Mn 04 in the usual manner.