investigated the reactions of variously substituted ureas and thioureas and their use in the synthesis of hydantoins and thiohydantoins; synthesized the pyrimidine cytosine; studied the chemistry of pyrimidines, such as the action of fuming nitric acid on thymine and uracil (which led to a method of separating the two); devised a specific color test for uracil and cytosine that is not given by thymine; synthesized orotic acid (uracil-4-carboxylic acid), thiothyronine, and α-aminopelargonic acid; investigated the biochemistry of tuberculosis bacilli; synthesized ephedrine, various hydantoins with hypnotic properties, and the germicide hexyl resorcinol.