certain trace elements has long been known, exploration in this area has traditionally been slow and laborious. The recent availability of atomic absorbance spectrophotometers has, however, provided a basis for the greatly simplified methods of analysis and, in turn, given rise to a resurgence of interest in the field. Fortunately we obtained an instrument quite early and undertook a study of the application of atomic absorbance to problems concerning the presence of trace elements in food and water (23). The studies have already been extended to include the determination of concentrations of rubidium, lead (28) cadmium, and silver in milk as influenced by seasonal variation and area of production. Our findings indicate that cadmium and rubidium vary markedly with season and geographical location. The observed concentrations of these elements usually are between 0.017 and 0.030 parts per million for cadmium and 0.057 to 3.39 part per million for rubidium. In the case of silver and lead, no significant geographical differences were noted and seasonal variations seemed to be restricted to the Southeastern States. The concentration of silver varied between 0.027 and 0.054 parts per million, whereas that for cadmium ranged from 0.023 to 0.079 parts per million. A further extension of these studies is under way to determine other trace elements in milk and to investigate the levels of trace elements in whole diets.

Our reasons for investigating the concentration and distribution of trace elements in foods came from the recognition that although many are hazardous at certain concentrations, these same elements at other concentrations are often absolute nutritional requirements of man and most living things. Also, the level of uncontrolled intake through food frequently represents a major source of exposure, as in the case of lead, where this level and the tolerance level are quite close (29). For these reasons, we believed that consideration of man's exposure to trace metals without knowing how much he received from his food would be meaningless. In this connection, I quote goal No. 6 of Task Committee on Environmental Health and Related Problems in the report entitled "A Strategy for a Livable Environment," which reads as follows: "A materials, trace metals, and chemical control effort to establish, by 1970 human safety levels for synthetic materials, trace metals, and chemicals currently in use, and prohibit after 1970 general use of any new synthetic material, trace metal, or chemical until approved by the Department of Health, Education, and Welfare." (Ch. II, p. 20.)

CONTRIBUTION FROM FOOD MICROBIOLOGY

The Food Microbiology Unit conducts research on the incidence, occurrence, identification, and quantification of pathogenic and indicator organisms and their toxins in foods (30, 31). The research is designed to provide technical information that can be used by regulatory agencies and quality-control laboratories of industry to improve the public-health safety of foods.

During recent years, this research has resulted in the development of several media and procedures that have found application in the field of food microbiology. For example, a medium (TPEY) (32) has been developed that selectively isolates staphylococci from foods. Its composition is such that most micrococci and other gram-positive organisms are severely inhibited, whereas *S. aureus* grows well and produces typical enzymatic reactions that aid in its recognition. Another medium (SPS agar) (33) that will quantitatively recover the vegetative cells of *Clostridium perfringen* from foods has been developed and field tested. This medium has been evaluated by other workers both in this country and abroad and has been found to be well adapted to the examination of foods involved in food-borne disease outbreaks. A methodology using this medium for the examination of foods is being evaluated for the Association of Official Analytical Chemists.

Other studies or media and methods have included the development of an enrichment medium for *Clostridium botulinum* (34) that selectively enhances growth and toxin production without the use of meat particles.

Over the years, the Food Microbiology Unit has had a keen interest in the incidence and occurrence of microorganisms of public health significance in foods and related sources. This interest has led to the determination of the incidence of salmonellae in market meats (35) and grade A dry-milk powder (36), of *C. perfringens* in raw and prepared meat products (37) and in the feces of food-handlers, and of coliform organisms and *E. coli* in market foods. These studies have been extended to determine the characteristics of the *C. perfringens* strains associated with foods and food-borne diseases (38), and to establish that Enteropathogenic *E. coli* may occur occasionally in foods, and in the feces of 6 per cent of the food handlers (39, 40).