would keep the reaction constant otherwise, though the buffering greatly smooths the regulation. In the human body acid in excess is being continuously produced, partly as ionized sulphuric and other non-volatile acids, and partly as ionized carbonic acid. The formation of acid is constantly being exactly compensated by the excretion of acid urine and formation of ammonia on the one hand, and on the other by the washing out of carbon dioxide through the lungs. The exact coordination or regulation of these activities is the essential matter, and the quantitative investigation in various directions of physiological coordination in recent times has separated the old mechanistic physiology of last century from recent physiology. The normal responses of the kidneys and respiratory organs depend on the simultaneous maintenance of many conditions included under the comprehensive word "health"; but we assume this maintenance in quantitative investigations of physiological function.

If, following L. J. Henderson, we neglect active organic coordination, we are, it seems to me, taking a step backwards. As one who has been closely connected during the last thirty years with the development of Bernard's conception, as well as with the development of knowledge as to the physical chemistry of blood, I wish, therefore, to express my dissent from what appears to me to be L. J. Henderson's misinterpretation of Bernard. In my book, about to be published, on "The Sciences and Philosophy," I have discussed the subject from a wider standpoint, but before I had seen L. J. Henderson's book. It seems to me that apart from the central biological conception of specific coordination we can not make even a beginning in the scientific treatment of general physiology, whether we start from the unicellular organisms which Henderson unjustifiably assumes to consist of a physico-chemical system called "protoplasm," or from compound organisms with a well-defined internal environment between individual cells.

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METABOLIC ACIDITY OR ALKALINITY OF FOODS

IT is well recognized that complete oxidation of foods yields mineral residues of neutral, acidic or basic character. These residues are essentially the same as produced by laboratory incineration or by the reactions of metabolism in the animal organism.

Nutritional literature refers to the "acid or base forming tendencies" of foods. Foods are said to have "potential acidity or alkalinity." This "potential acidity or alkalinity" is entirely independent of and distinct from the "acidity" or "alkalinity" of the food in its natural state.

The particular phraseology "potential acidity or alkalinity" lends itself to possible confusion with "acidity or alkalinity," or at least does not make the distinction as apparent and distinct as it might be. It is proposed that a more exacting terminology be adopted for "potential acidity or alkalinity."

"Potential *metabolic* acidity or alkalinity" or more simply still "*metabolic* acidity or alkalinity" seems to define appropriately and specifically the reaction character of food mineral residues subsequent to the reactions of metabolism. The "metabolic acidity" and the "acidity" of a food are not subject to confusion or interchange even to the superficially tutored.

RAYMOND HERTWIG

THE OCCURRENCE OF BOTHRIOPLANA IN THE UNITED STATES

IN a note to SCIENCE on the occurrence of *Otomesostoma* in this country, published in the October 12, 1928, issue, mention was made of the existence in this vicinity of several unidentified rhabdocœles thought to belong to the subclass Alloiocœla. Since that time I have definitely identified one of these as *Bothrioplana*.

Individuals of this genus have been known to this laboratory for three years, but had not been studied in detail until this fall. They occur in abundance in the outlet of the University of Virginia gymnasium pool, where the water is swift and clear; and in a branch from a spring on the adjoining golf course. The specimens are large, and may easily be mistaken for a species of *Planaria*.

Under laboratory conditions the animals have produced three eggs each in a single period of sexual maturity. The eggs are large, 390 micra in diameter, and unstalked. The embryos develop in twenty-one days at room temperature and emerge through an operculum at one pole. Work is in progress on the histology of some of its organs of special sense. This is the first record of this genus in the United States. Stienböck, in a recent paper entitled "Beiträge zur Kenntnis der Turbellarienfauna Grönland," 1928, has included it in the fauna of Greenland.

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AN UNUSUAL SOURCE OF LIVING MATERIAL

IN most localities that have winter seasons during which the temperature drops below freezing, it is probably not ordinarily possible in these months to collect living specimens of microscopic forms of life. This is especially true of those places that have winter climates that may be called rigorous. From all accounts the winter season just closing has been uncommonly severe. Here at Gunnison, which may be taken