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

as largely typical of the high Rocky Mountain regions, temperatures have been unusually low. From about December 1, 1928, to March 1, 1929, the greater part of the time was at subzero temperatures. During December and January the temperature was mostly at subzero levels, often for as long as two weeks at a time. Milder temperatures (up to 30° to 40° above zero) were relatively infrequent and only occurrent in the daytime. The coldest period (47° below zero) occurred in February. However, it has been possible to collect living *Protozoa* and *Algae* under these conditions. About a half mile south of the college campus is a swampy area of several acres in extent that is fed with water that flows from underground. The source of this water is not definitely known, but perhaps it comes from warm areas below strata that lie buried from several hundred to several thousand feet under the high mountains to the north. A swiftly flowing stream about four or five feet wide and about one foot deep drains this swamp. At no time does this water freeze, not even when the temperature of the air is as low as 47° below zero. A curious circumstance is that such floating forms as duckweed can be found in the fully normal condition. Higher water plants are abundant. *Algae* such as *Chlamydomonas* and various filamentous forms may be collected at any time. *Amebae* of several types are to be found creeping about in material taken from the bottom. By far the most common form of *Protozoa* is *Vorticella*. *Euglena* is also rather common. No specimens of *Paramecium* have been noted in this material, but a few ciliates resembling *Colpoda* are to be seen.

Perhaps this condition is not so unusual as may appear at first sight. If other biologists who live in a "frigid" winter climate look about them, many such sources of living material for winter study may possibly be found.

C. T. HURST

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QUOTATIONS

DORMITORY OF THE NEW YORK MEDICAL CENTER

WHEN the Medical Center was dedicated last October, Dr. Samuel Lambert stated that, while the buildings met the complex requirements of an art and a science, there was one thing lacking. That was provision for the home life of the students of medicine and instructors, especially the young workers in the laboratories. Such a provision would be an innovation but it would help to foster a professional spirit and to round out professional life if dormitories and a common dining hall could be added to the buildings already developed or planned for in that monumental center. He spoke with seeming prescience, though doubtless not knowing at the moment how the need would be met. It has found response in the splendid gift of Mr. Edward S. Harkness, who, with his mother, made initially possible the Medical Center itself. This gift of $2,000,000 will now supply "the one thing lacking."

No one need fear, as Dr. Lambert said, that such an addition will lead to anything approaching cloistered life. Contacts with the outside public are inevitable both for teachers and students. They are simply assured a "quiet, commodious and comfortable home," with light and air and an outlook over the Hudson River, in close proximity to the Medical School and the associated hospitals. Heretofore, as President Butler said in acknowledging this latest munificence of Mr. Harkness, the residence conditions of medical students have been little short of scandalous. The conditions made possible by this gift will by contrast be ideal.

The indebtedness of Columbia University to Mr. Harkness is profound, but the whole community shares in it, and not this community alone; for the Medical Center is also to be more and more a world center of medical training, care and research. What Mr. Harkness has done in varied ways, not only for his own day and generation but also to help this generation make a greater contribution to the next, may be computed in dollars given, but it is beyond all computation in the saving and enriching of human life. New York has reason to congratulate itself upon the public-spirited, conscientious and intelligent way in which most of those who have come into great fortunes are contributing to the general good. So generous is their concern for the health, safety, comfort and education of the many that it can but be hoped that the miracle of the cruse of oil and the meal in the barrel will be continued to them.—*The New York Times.*

SCIENTIFIC BOOKS

The Ways of Behaviorism. By JOHN B. WATSON. Harper Bros., 1928.

Psychological Care of Infant and Child. By JOHN B. WATSON. W. W. Norton Co. 1928.

The Battle of Behaviorism. By JOHN B. WATSON and WM. MCDOUGALL. W. W. Norton Co. 1929.

I SHALL use the present occasion not to present in summary the contentious content and tone of the recent writings of Dr. John B. Watson—which may be assumed to be familiar—but to discuss the "ways