lished in 1824, there is found a plate showing one of the pods produced by Mr. Seton. This colored plate shows two green peas and three white ones in the same pod.

It is interesting to note how close these men came, in the year of his nativity, to the law which later made Mendel famous.

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THE FOOD OF PLANTS

DR. BENEDICT in a recent number of SCIENCE opens the question regarding the definition of the word food as used by botanists.

That we need to come to some agreement is, I think, generally felt by teachers in all grades of the subject.

If we have in mind the plant's relation to substances outside of itself which may be taken and used in any of its vital processes, then carbon dioxide, water and minerals are food. This notion was suggested by the animal organism, which, however, is essentially unlike a plant in respect to immediate external relations. The term plant food arose to emphasize the importance of certain mineral constituents of the soil. Its use ignores the green plant's unique place in nature, and by implication even denies it.

If on the other hand we have reference to growth and repair of living tissue, carbon dioxide, water and minerals are waste products, the antithesis of food.

The question resolves itself into this, to which concept of the plant's activities is the concept food most nearly related? If the answer is nutrition then only such substances as can be oxidized in the tissues and energy thereby set free, are foods. To answer the question otherwise is not only to invite trouble from such a term as reserve food, but worse, make the whole subject of metabolism impossible of presentation. If we write the words "energy stored" and "energy set free" in the equations for photosynthesis and for respiration, the term food, in its commonly accepted sense is clear, and the term as applied to inorganic matter an absurdity. Nevertheless, the term plant food as applied to nitrate of soda, etc., is with us to stay, just as surely as oysters will continue to be known as shellfish.

It is our business to fit pedagogic methods to the facts and see that fundamental truths are clearly set forth regardless of how many qualifying terms we must employ.

I forbear quoting sentences from text-books in which the term food is used in opposite senses without explanation, thus by implication denying the importance of photosynthesis and ignoring the law of conservation of energy. Hypercriticism is born of pedantry, but consistency is a jewel. The agriculturist can not use our term fruit and we can not use his term plant food without contradiction and confusion. The trouble is not so much one of definition as of usage. A Frenchman who was learning English said: "When a horse goes rapidly you say he is fast, and when you tie him to the post he is fast. Your language is very difficult."

H. N. CONSER
UNIVERSITY OF MAINE,
May 27, 1913

A GOOD SOIL TUBE

GLASS tubes are generally used in soil physics laboratories when carrying on experiments on capillary rise and distribution of water in soils. To give the best results these must be one and one half to two inches in diameter, and are expensive and fragile. In student laboratories with class numbering 100 or more the writer has had an annual breakage of over 75 per cent.

During the past year a new style of tube has been used in the soil technology laboratories at the University of California. This form was suggested to the writer by Professor E. O. Fippin, of Cornell, and is in use there and in other laboratories.

The tubes consist of a wire-mesh cylinder, two inches in diameter and of the desired length, made by wrapping one fourth inch mesh wire netting around a form and riveting the edges at intervals of six or eight inches. Celluloid tubes made of thin transparent sheet

celluloid, cut in strips seven or eight inches wide, and rolled into cylinders, are thrust into the wire tube. This makes a cylinder that is soil-tight, transparent and durable. With reasonable use it will last several seasons, though the celluloid may crack or become scratched and opaque. They prove very satisfactory for capillary rise experiments and are excellent for studying distribution of water, as the inner tube can be withdrawn and unrolled, exposing the soil for easy sampling.

Charles F. Shaw
University of California

Lee's "Introduction to Botany"

To the Editor of Science: For a particular purpose I wish much to see a copy of James Lee's "Introduction to Botany," published in London in 1760, the first edition. I have inquired, but in vain, of all the large libraries in the United States, though all of them have later editions. Can any reader of Science tell me where a copy may be found in this country?

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The Leonhard Euler Society

It is well known that in 1909 the Swiss Naturforschende Gesellschaft resolved to publish the works of the extremely prolific and famous mathematician Euler. The estimated cost for the complete edition of over 40 large quarto volumes was supposed to be approximately $100,000 and was covered by about 400 subscribers (25 francs per volume, or $80,000 by subscription) and the so-called Euler-Fund resulting from contributions of governing bodies, scientific societies, industrial establishments and private persons.

So far six volumes have appeared and a seventh is in press. The work is apparently very carefully edited, and the typography is perfect.

Unfortunately the experience gained by the publication of the first volumes and the fact that a large number of additional papers and letters recently found among the documents of the Imperial Academy of St. Petersburg and in various other places will increase the total number of volumes show that the original estimate of cost is not nearly enough to guarantee a successful completion of the entire undertaking.

In order to partly meet an expected deficit of $40,000 it is proposed to found a *Leonhard Euler Society* with unlimited membership. The annual dues will be 10 francs (about $2) and membership is merely an honorary obligation to contribute to the success of a great scientific enterprise.

The originality and importance of Euler's writings, even at the present time, make it very desirable to have a uniform edition of all his works and it is so hoped that the appeal of the Swiss society will be generously answered by scientific circles.

Arnold Emch
University of Illinois

Scientific Books

Fixité de la Côte Atlantique de l'Amérique du Nord. By Douglas W. Johnson.

The quite harmonious interpretation of coast-level changes along the American Atlantic, made by scores of clean-witted and experienced observers through scores of years, are here briefly scrutinized and fundamentally contested. The supposed ups and downs of the Atlantic coast, which have been so carefully and abundantly recorded from Gaspé to the Carolinas, had promulgated a widely accepted notion that the North Atlantic seaboard was very uneasy, still undergoing warpings which might well have been in direct inheritance of its ancient Appalachian instability. Dr. Johnson's paper under the above title is not quite new, its date being rather more than a year back, but in these prolific and harlequin days of scientific ideas, it takes a little while for the leaven of reformation to register its effect. There are many excellent reasons for not taking grave exception to Dr. Johnson's general conclusion that the eastern American land is as a whole in fairly stable equilibrium—that is to say, is not now