These must have been planted in clearings and probably had not been abandoned for more than a century, or they would have been smothered by the forest. An earlier European settlement on Cocos Island seems improbable, but many islands off Panama were inhabited. Oviedo's account of the Isthmus, written in the time of Balboa and published in 1526, leaves no doubt that coconuts were abundant on the Pacific coast.

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MOMENTUM AND ENERGY

IN a note in SCIENCE (January 12, 1940, p. 43) Dr. Heyl discusses the seventeenth century dispute over momentum and energy, and compares it with the present dual points of view regarding what might be called wave-electricity and particle-electricity.

The difference between the momentum and energy effects of force is no more than a difference in point of view. The energy aspect is represented by the equation

$$2\int_1^2 F\,v\,dt = m(v_2^2 - v_1^2)$$

where F, in the direction of v, is the force on the mass m. For simplicity assume rectilinear motion.

If this statement represents a law it should be independent of the velocity of the observer. Let him move at constant velocity c relative to the laboratory in which the law is being checked experimentally. The moving observer will therefore use the equation

$$2\int_1^2 F(v+c)\,dt = m\{(v_2+c)^2 - (v_1+c)^2\}$$

which reduces to the momentum law

$$\int_1^2 F\,dt = m(v_2 - v_1)$$

Perhaps the electromagnetic paradox can be resolved similarly. In our present state of knowledge, however, radiation seems to result from the propagation of a partial differential equation through space.

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THE USEFULNESS OF BIOLOGICAL ABSTRACTS

THE receipt of the index to Vol. 11 (1937) of *Biological Abstracts* impels me to relate an experience which demonstrated, to my own satisfaction at least, the usefulness of this abstracting journal. Having to revise for Editor Allen the chapter on "Ovulation, Fertilization and the Transport and Viability of Eggs and Spermatozoa" for the 1939 edition of "Sex and Internal Secretions," and having exhausted the Quarterly Cumulative Index as well as various German Berichte, I turned to the indexes, so far as published, of *Biological Abstracts,* using the appropriate key words such as egg, sperm, ovulation, fertilization, oviduct, etc. The result was gratifying and a little surprising, for over 100 references new to me, including several of considerable importance, were unearthed in this simple way.

The usefulness of *Biological Abstracts* lies in the superb indexing job, the technique of which was worked out by the founder, Dr. Schramm. The indexes are unique in that the aim has been to include not merely main titles but also subordinate, though no less important, subject-matter that would otherwise be hopelessly buried. Now that Editor Flynn is determined to bring the indexes up to date, *Biological Abstracts* should come into its own as a most useful instrument for those who are interested in the broader biological aspects and the "Grenzgebiete" of their subjects.

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SCIENTIFIC BOOKS

TERRESTRIAL MAGNETISM AND ELECTRICITY

Terrestrial Magnetism and Electricity. Edited by J. A. FLEMING. Being Volume VIII of the Series "Physics of the Earth" Prepared under the Auspices of Various Committees of the National Research Council. New York and London: McGraw-Hill Book Company, Inc., xii + 794 pp. $8.00.

THIS very valuable volume contains a series of chapters written by various authorities on the fields concerned; and perhaps the best that can be done in the way of a brief summary is to commence by listing the articles under these various chapters, as follows: