

*A Geometrical Political Economy.* Being an Elementary Treatise on the Method of Explaining Some of the Theories of Pure Economic Science by Means of Diagrams. By H. CUNYNGHAME, C. B., M. A. Oxford, The Clarendon Press, 1904.—128 pp.

This little treatise has evidently been *in petto* for a long time. Thirty years ago, when the prolific Jevons was complaining that Marshall was slow to publish (Jevons, *Letters and Journal*, p. 331), Mr. Cunyngame was one of the small group of students whom the future author of the *Principles of Economics* was initiating into the use of the geometrical method. As early as 1873 the able disciple made a contribution to the graphic treatment of economic questions in the form of "a beautiful and original machine" for drawing rectangular hyperbolas, which was described by Professor Marshall in the *Proceedings of the Cambridge Philosophical Society*. Subsequently he contributed a series of articles to the *Economic Journal*, dealing either with the theory of the graphic method or with its application to the study of concrete problems.

The present work presents the elements of the graphic method as it has been developed, for the most part, by Professor Marshall. Students of this method have known that, in the seventies, Professor Marshall devised a new form of curves which he called the symmetric form, and which he described in a privately printed paper. The general character of this symmetric form has been inferred from the works of Edgeworth, Pantaleoni, Auspitz and Lieben. Mr. Cunyngame describes these curves as well as the more familiar form used in the *Principles of Economics*. The introductory chapter gives a brief account of the history of the diagrammatic method, and is followed by discussions of the use of the geometrical diagram, the demand curve, the theory of final increments, supply curves and fixation of price, surplus value, taxation, composition of supply and demand curves, monopoly, international trade, transformation of curves, integral curves and the algebraic treatment of political economy.

The most valuable parts of the book are the illustrations of the law of increasing return, the chapter on the transformation of curves, and the symmetrical treatment of the statistical and deductive sides of the mathematical method. This last feature has a special value as an indication of a promising direction of theoretical study. It is common knowledge that in recent years the theory of statistics has been put upon a new basis and is becoming the recognized instrument of inductive investigation in the natural and social sciences. It is not, however, generally known that some of the most important contributions to sta-

tistical theory have been made by mathematical economists, and that the inductive and deductive sides of economics receive collateral treatment in the works of the masters of the mathematical method. The goal of mathematical economics is a statistical confirmation of its conclusions.

Several errors of varying degrees of importance should be noted. On page 42, "ordinates" is used for coördinates. On page 121, the area should be R D W instead of "R D M." On page 75, where, in the discussion of the effect of a specific tax upon price, it is stated that in industries subject to the law of diminishing return "the price is increased more than the tax," it is obvious that we should read "less than the tax." On page 8, the following reference is made to Cournot:

In the fourth chapter of this book [*Recherches sur les principes mathématiques de la théorie des richesses*] he clearly expounds the law of diminishing utility, and shows that the price which would be offered for an article depends on the utility of the last increment exchanged as compared with money.

It is very curious that this statement should be made, for not only does Cournot not expound the law of diminishing utility with the corollary as to money, but his entire omission of the subject constitutes one of the defects of his great masterpiece.

HENRY L. MOORE.

*Les Systèmes socialistes et l'évolution économique.* Par MAURICE BOURGUIN, professeur adjoint à la faculté de droit de l'Université de Paris. Paris, Librairie Armand Colin. 1904.—x, 519 pp.

Perhaps the leading merit of Professor Bourguin's book is that its author, appreciating the convincing appeal that facts make to the scientifically and historically trained mind of to-day, has devoted three-fourths of his volume to tabulation of, and commentary upon, the facts of what he styles economic evolution. Part ii is entirely given to this tabulation and commentary. Over a hundred pages of appendices (pp. 391 to 498) present in tabular form the facts regarding concentration of capital, especially visible in railway and shipping companies, in life insurance companies and in the great industrial trusts; the increase of urban populations; the growing tendency of employers and laborers to form unions; the development of coöperative consumers' and producers' societies; the extending municipalization of water, gas, electric light and street railway plants, and the nationalization of telegraph and