Jacques Arsac

INFORMATICS

(Translation from French)

Editura enciclopedică română, 1973, 260 pp.

The effects of the present technical and scientific revolution on the level of development of the productive forces require the use of electronic computers, for the benefit of a rational development of any country. A number of disciplines such as cybernetics, the algebra of logic, the theory of algorithms and informatics have appeared out of the necessity of finding an answer to the problems raised by the human mind. Among them, informatics arouses the greatest interest, not only because it is a science, but, especially due to the singularity of its manifestations.

Professor J. Arsac's work "Informatics" meets all conditions for being a pleading for informatics, for its large applicability. Therefore, it might have probable been more suitable to be entitled "Introduction to Informatics", being obviously a work meant for those who are not yet familiar with this discipline.

Arsac's book reviews the main elements which should be known for better understanding the real importance of informatics, of its integration into the other sciences.

The first two parts aim at specifying some notions of informatics, namely at defining the category of information, as a formula likely to bring an acknowledgement, of its representation and processing. Through some elementary and, consequently, some extremely convining examples, the notions of simple and compound information result, a general model of information being also achieved. No matter the type of composition of the information, it is made up of a certain number of elements; a method is established for reducing all information regardless of their character, to the general model.

The next three parts comprise problems pertaining to the electronic computers, their programming and some notions about the drawing up of algorithms, the phase following the analysis and preceding processing proper.

With the aid of fiction (adding an apocryphal chapter to Jonathan Swift's works), the functioning of a computer is presented outlining the role of the store, of the central unit, of the input — output devices and of the external storage.

The general ideas about programming are emphasized, the work describing three ways of programming: in machine language, assemblage language and algorithmic language. The different programing languages are compared between them and their unity is underlined, all of them being characterized as being simultaneously algorithmic and liable to control the computer.

The analysis Arsac further dwelles on is preceding any data processing. It is as varied as the various applications of the information.

To describe the passing from data to results, the author develops the notion of system, a set of components which have their own law each and which are significantly assembled in a system.

In the economic and administrative fields, the analysis has as a main stage the collection of data or the collection of news and their transformation into data. In most complex cases, one must apply to special languages for materializing the news.

The physical devices of simulation: models and analogical computers are presented in brief.

The work concludes with a chapter on "The Prospects of Informatics", professor Arsac believing in the future of informatics and in its chances of full success. The author proposes the introduction of informatics as a compulsory discipline at all faculties, also standing for the teaching of informatics in lyceums.

The work partly meets with the interest existing in our country, especially during the last few years, for the problems of informatics, particularly for those pertaining to the introduction of automatic data processing and to the endowment of the national economy with improved computing machines.

Written in a vivid and witty style, undoubtedly, the work will have appeal and we warmly recommend it to persons in the not know, in order to form a general idea of informatics and to those who already know part of the secrets of this new science, for becoming acquainted with new opinions about informatics and its multiple applications.

Andrei Alexiu