RECENZII

E. W. DIJKSTRA, *A Discipline of Programming*, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1976, 217 p.

Although quite recently published, the book written by Prof. Dijkstra from the Eidhoven Technological University, often quoted in the computing science literature, is a significant event for programming science.

In the author's view a programming language is primarily a vehicle for the description of (potentially highly sophisticated) abstract mechanisms. Following this idea, the book (useful for all those who are interested in programming, mathematics and engineering) is much more than a sum of beautiful algorithms together with the description of the design process; the reader will find in it many new concepts and also new considerations on old problems.

It is noted that the programming languages have primarily been developed as vehicles for instructing existing automatic computers. As a result it is not unusual to find anomalies in the programming languages due to anomalies in the existing machines. An advantage of the formal notation technique is that it enables us to study algorithms as mathematical objects.

The notions of *state* and *state space* are presented and exemplified. Another concept concerns the definition of a semantic in terms of the *post-condition* and the *weakest-precondition* introduced here. A rule such that the given post-condition delivers a predicate denoting the weakest-precondition is called a *predicate transformer*. A number of their properties is presented.

Under the semantic characterization of a programming language there are depicted the statements of a generally programming language such as : *skip*, *abort*, *assignment* statement, the *if* ... *fi* and *do* ... *od* brackets enclosing a set of *guarded commands*. Two theorems dealing with the alternative and repectitive constructs are presented.

Small programs solving simple problems (including also the revised Euclid's algorithms already presented in the former chapters) are constructed to make the reader more familiar with the formalism.

A very attentive approach to the *variables* problem is revealed, which begins by reminding the reader about the two types of variables in FORTRAN and also about the ALGOL-60 nested blocks declarations of variables, enumerating their pros and cons and closing with the author's own proposals on the matter. The *private*, *virgin* and *global* types of variables are introduced to sustain the notion of *textual context*. Some considerations are also given upon the array variables.

A particularly interesting and new description of accessioning sequential files is made, with the same arguments that led to the elegant solution of the already presented problem of the Dutch national flag. The *update*, *delete* and *insert* operations are reconsidered.

What makes the book so attractive is also the great number of problems (each of them sophisticated enough to be dedicated a full chapter) with elegant and new solutions. They are excellent exercises for improving the style of programming. The author himself comfesses that it was very encouraging to discover that the methods developed in the book had, indeed, improved his programming ability. I shall give here only some of the captions : a revision of the merging problems, the pattern matching problem, the problem of the most isolated villages, the problem of the shortest subspanning tree, two algorithms for the recording of the equivalence classes, the problem of the convex hull in three dimensions, finding the maximal strong components in a directed graph. Exercises given to the reader in almost every chapter provides an opportunity for him to try his own ability and skill in programming.

It is only one more thing I would like to stress about this book : the excellent talent as a writer of E. W. Dijkstra that gives the reader the enjoyment of a very pleasant lecture.

Dan Cristea

SOFRON EMIL, TARACA STEFAN, *Dispozitive optoelectronice cu cristale lichide*, Ed. Tehnică, București, 1976, 247 p.

The book covers a recently developed field in electronics, namely the theory and the applications of liquid crystals. Although this field is quite large, many problems are exposed in detail, the book being a useful guide for both outsiders and specialists.

The first chapter describes the structural behaviour of liquid crystals, the texture types and the effects of disinclinations. The pertinent analysis of the structure of liquid crystals is supported by original photos of the molecular patterns obtained with the polarised light microscope. Intuition is helped by figures and tables to understand the spatial molecular arrangement of phases.

The basic physical properties of nematic and cholesteric liquid crystals are reviewed in the second chapter. Details are given on less known properties such as magneto-optic and elasto-optic properties.

The third and most detailed chapter deals with the theory of electro-optic effects in nematics and cholesterics. The analysis is undertaken to decide the best modes of operations for various applications. The original experimental results plotted in diagrams help the engineer to choose the proper effect for the needed purpose.

The technological aspects and many parameters of the optoelectronic devices with liquid crystals are presented in the fourth chapter. The next section contributes greatly to the originality of this book, giving a large view on the present state of the art in the applications of liquid crystals. For each of them, physical principles and major results are presented. The attentions is focused not only on displays but also on optical memories, optical defectoscopy, laser beam detection and modulation, thermography and other up-to-date applications. The last part explains some specific circuits for the control of devices with liquid crystals. A detailed bibliographical list is added, with a view of satisfying the most exigent readers.

The overriding conclusion which may be derived from this book is that the development of these devices is only beginning and that future applications are to be expected in detecting and measuring mechanical, thermal and electromagnetic parameters. By its content, its explicit presentation and its applicative value, the book is recommended to readers including students, engineers, physicists and specialists in related sciences.

H. N. Teodorescu

A. CORNISH-BOWDEN, *Principles of Enzyme Kinetics*, Butterworth Publishers, London, 1976, 206 p.

The author is not dealing with information about specific enzymes, and this book is not a catalogue of properties of enzymes, but with the theoretical basis of enzyme kinetics.

Chapter 1 offers a review of chemical kinetics in order to ensure the understanding of the proper notions which the author uses in subsequent chapters. This chapter includes a brief discussion on dimensional analysis.

Chapters 2, 4, 5 and 6 underscore the essential characteristics of steady-state kinetics.

In chapter 6 the pH effect on enzyme kinetics is also emphasized.

The most useful methods for deriving steady-state rate equations, in a very accessible form, are explained in chapter 3. The theoretical basis of the King-Altman method and some important and recent developments are also treated.

Chapter 7 deals primarily with the main theories put forward in order to promote cooperativity.

Integrated rate equations are presented in chapter 8.

Chapter 9 is an introduction to the study of fast reactions, while chapter 10 is an interesting introduction to the statistical aspects of enzyme kinetics.

The clear presentation of "Principles of Enzyme Kinetics" makes the book useful to first-year researchers in enzyme kinetics, as well as to more advanced research workers and to last-year undergraduates.

Nicolae Olaru

B. RÅNBY and J. F. RABEK, *ESR Spectroscopy in polymer research*, Springer —Verlag, Berlin, Heidelberg, New York, 1977, 410 p.

The electron spin resonance (ESR) spectroscopy belongs to the most specific and useful methods in the study of polymer reactions, structure and transformations, and it has been recently applied. In literature, there are several thousands of references concerning various applications of the method. The authors of the reviewed book, well known in the field, have made a tremendous effort to put at the disposal of those interested a very rich information source for research work in the physics and chemistry of polymers by means of ESR. Apart from a coherent and extensive treatment of literature data, Rånby and Rabek discuss this information critically and include their own results in this field.

The book is made up of 13 chapters presenting the material in a logical and accessible order. It is useful both to those who for the first time, come in touch with the field, and to those already familiar with ESR spectroscopy.

The volume begins with a very comprehensive chapter concerning information about the generation of free radicals, biradicals or ion-radicals obtained by means of physical and chemical methods. In the second chapter the background, nomenclature, theory of ESR spectroscopy, the basic interpretation of ESR spectra, using a minimum of mathematical data, are presented.

The experimental instrumentation of ESR spectroscopy is extensively treated in chapter 3. touching upon almost all aspects of the problem : sample preparation measurements of spin concentration at different temperatures stabilisation of free radicals equipment or special techniques for ESR spectroscopy.

The main part of the book (chapters 4 and 5) devoted to ESR application and to the study of polymerization processes and polymer degradation, covers all aspects of macromolecular compounds synthesized by the free radical mechanism of ESR identification of free radicals during polymerization of various types of monomers (vinylic, dienic, cyclic) by different polymerization techniques (thermal polymerization, solid state, mechanical or photopolymerization). ESR investigations of ionizing and heterogeneous chain-growth polymerization are discussed in detail. A detailed exposition is made of the largely used catalysts in these processes : of stable alkali metal complexes, polycyclic aromatic and pyridyl complexes, phillips catalysts etc.

The radiation and photo-degradation of polymers are mostly free radical processes which can be excellently studied by ESR spectroscopy. In this respect, the authors cover, in more than 70 pages, various aspects concerning the formation of free radicals detected by ESR in synthetic (polyolefines, polydienes, polyesters, polyethers etc.) or natural polymers (polysaccharides, lignine, proteins).

As the interpretation of ESR spectra designed to determine the radicals, formed in conditions of ionizing and light irradiation, is rather complicated, the authors have separately studied degradation processes in vacuum (chapter 5) and in the presence of air (oxygen) or other gases (hydrogen, nitrogen, noble gases), (chapters 6 and 7).

The ESR spectroscopy is successfully used to study the molecular fracture in polymers, a very complicated phenomenon, which may involve chain scission, slippage, unfolding, chain pulling, phase segregation etc. All these aspects are treated in chapter 8.

Further, Rånby and Rabek's book deals with aspects of copolymerization and crosslinking processes of polymers involving chain reactions, which may also be studied by means of ESR spectroscopy.

The last chapters of the book focus on employing ESR spectroscopy to detect stable free radicals, widely applied in the study of polymers. To this effect one can mention the polymer-plastifiant interaction, the bimolecular recombination controlled by diffusion, the molecular movement in rigid polymers below glass transition temperature, or determination of the glass transition temperature of several macromolecular compounds by spin-probe technique.

In the end, the nature of free radicals in macromolecular compounds with electrical properties and their low molecular analogues is presented as a field of investigation by ESR spectroscopy.

The book is intended for organic chemists, biochemists, physicists and for those working in the field of macromolecular compounds. Thanks to its content, rich in literature references, the book may always be taken as a source for solid documentation and we warmly recommend it to the readers.

V. Bulacovschi
S. Petrovan

GH. LUPUȘOR, E. MERICĂ, C. GOREA, V. BUCEA-GORDUZA, *Ingineria sintezei intermediarilor aromatici. Baze teoretice.* Editura tehnică, București, 1977.

Lucrarea este compartimentată pe 8 capitole, fiecare fiind sprijinit pe o bibliografie proprie.

Capitolele introductive (1 și 2) sînt axate pe prezentarea sumară a obiectivului ingineriei reacțiilor chimice organice și a surselor de obținere a hidrocarburilor aromatice.

În continuare (cap. 3), sînt abordate mecanismele de reacție în corelație cu datele experimentale, stoechiometria, cinetica, termodinamica procesului și cu factorii orbitali.

Capitolele 4 și 5 tratează bilanțurile de materiale și termice, pentru diferite sisteme, reacțiile avînd drept principal scop descrierea detaliată a posibilităților de determinare sau calcul al mărimilor cu caracter termodinamic și cu implicații în ingineria practică.

Tematica cineticii chimice (cap. 6), interpretată în folosul practicianului, completează seria de noțiuni de bază necesare abordării studiului reactoarelor ca sedii ale reacțiilor chimice.

Cartea se termină cu un capitol de elemente de modelare matematică care împlinește problematica vastă și eterogenă a ingineriei chimice organice.

Numeroasele exemple de calcul, multitudinea datelor tabelate și schemele sinoptice conferă lucrării un caracter de utilitate practică imediată, la nivelul cerințelor cercetării, proiectării și industriei.

Modul original de interpretare a problemelor tratate izvorăște din experiența dobîndită de autori pe parcursul activității didactice și științifice proprii și este rodul unei gîndiri sensibile la îmbinarea elementelor experimentale cu interpretări teoretice de ținută, în vederea unor scopuri practice. Sub acest aspect, cartea constituie pentru cititor un îndreptar de gîndire creatoare.

Dată fiind importanța intermediarilor aromatici, lucrarea, prin conținutul său foarte variat ca tematică, dar prezentat unitar, se adresează specialiștilor din cercetare, proiectare, industrie, precum și studenților de la facultățile de profil.

Mihai Nicu

* * * *Cellulose and Fiber Science Developments*: *A World View*, A.C.S. Symposium Series 50, Jett C. Arthur, Jr., Editor, Copyright (c) 1977, American Chemical Society.

The volume of the Symposium sponsored by the Cellulose, Paper and Textile Division, includes the works presented at the 171st Meeting of American Chemical Society, New York, April 5—9, 1976.

It contains 13 papers covering three fields: cellulose, paper science and fiber science.

Most papers are reviews concerning recent developments, the history and future trends in the domain of cellulose, paper and chemical fibers.

The papers dealing with cellulose and paper science, discuss the integral tapping of wood, the non-polluting pulping processes and problems related to raw material sources connected with the specific conditions of each participating country.

There are, however, a few exceptions, i.e, the paper given by K. Matsuzaki concerning "Research and Development of Cellulose" in Japan. After a brief presentation of the manufacture of rayon, acetate fibers and cellulose derivatives and of a number of articles published in Japanese journals, the author pointed out the following subjects of investigation: crystalline structure of cellulose and derivatives; folding molecular structure of cellulose; new solvents for cellulose.

The same character has the paper signed by Cr. I. Simionescu (Romania) entitled "Relationships between Fibrous Material and Paper Products". The general leading concept asserts the interference of moderate influences or of the determining action resulting from fundamental operations and the introduction of additives between the properties of the initial fibrous material and those of the final paper products. The investigations has been directed towards fibrous material—additivers—fundamental operations—paper characteristics system in the case of short fibres from annual plants pulp and hardwoods. The influence of additives is illustrated by the use of cation-active polyamine-polyamide-epichlorhydrin resin.

Japanese researchers present past and future trends in synthetic paper technology (S. Imoto) and in cellulose and paper industry (J. Nakano).

The contributions to the development of cellulose and paper industry from Mexic, Australia, Finland and Sweden are reported by known specialists. The authors emphasize the fun-

damental ideas of economic effectiveness, non-polluting processes and integral tapping of raw materials.

In the field of fiber science, H. Zollinger makes a historical review of 100 years of basic and applied cellulose research in Switzerland and some recent results concerning the cross-linking of cellulose fibers.

A brief account on some Canadian developments in textile and fiber science is given by D. M. Willes : novel yarn manufacture, fluoro-chemical fabric finishes and triacetate-polypropylene carpet fibres.

R. A. Schutz (France) in his paper "New aspects of textile research" considers the textile fiber as a heterogeneous multiphase system, the action of any kind of reagents depending on the accessibility and mutual fiber-reagent affinity.

In the last contribution, W. Tsuji summarises some aspects of recent developments in textile chemistry and industry in Japan as follows : polyester production from terephthalic acid and ethylene oxide high modulus, Vinylon filaments, acrylonitrile fiber mix-spun with casein (Chinon) and electroconductive fibers.

The book reflects modern significant research accomplishments in cellulose, paper and fiber chemistry. It is a valuable information source regarding the world-wide actual interest and future trends in these fields.

Agata Cernătescu-Asandei

J. FRIES and H. GETROST, *Organic Reagents for Trace Analysis*, E. Merck, Darmstadt, 1977, 453 p.

In the last few years the growing interest in trace analysis is documented by the continually increasing volume of publications on the subject. The traces to be determined call for special methods of analysis.

In accordance with the particular endeavour of Merck to provide the analyst reliable aids in different fields, this manual makes available to the interested specialist a compilation of one of the most frequently used techniques in trace analysis : the photometric methods.

The present manual has been preceded by two original German brochures : "Organische Reagenzien für die anorganische Analyse" and "Spurenanalyse, Erprobte photometrische Methoden".

In addition to photometry, other ranges of application are described, such as titrimetric and gravimetric analysis. The analyst therefore, has a guide to help him in the elaboration of appropriate analytical procedures to meet his particular problem.

Each section contains brief reviews of the most important reagents, their applications, the reactions and methods of analysis. The nomenclature of reagents corresponds to the latest IUPAC recommendations. The interferences which can develop during determinations have, in most cases, been established experimentally. Where exact data are available from the literature, these have been adopted.

Also, the reagent solution required for carrying out the determinations is described. Each reagent sensivity is characterised by means of molar absorptivity (ε) and the accuracy of each technique is distinguished by statements of the relative standard deviation (V).

In addition to the detailed procedures described, other reagents, which are less common but still of importance for special purposes, are listed.

For reasons of clarity, all absorbance/concentration graphs are based on the same coordinate system, but they are valid only for pure solutions. In the presence of foreign substances, new graphs must be prepared experimentally.

Because the volume of relevant literature is too large, it was necessary to restrict the references to a certain selection from fundamental and detailed papers in generally accessible journals.

All this information is provided in as condensed and rapidly reviewable form as possible. Therefore, the manual is designed to assist the analyst in tackling his problems, in selecting analytical techniques and employing "Organic Reagents for Trace Analysis".

S. Staimberg

GH. NUȚĂ, C. BUȘNEAG, *Investigații biochimice*, Editura didactică și pedagogică, București, 1977, 395 p.

Funcțiile și malfuncțiile organismului uman sînt în mare măsură determinate de fenomenele biochimice. Investigarea biochimică a diferiților compuși normali și patologici are drept scop diagnosticarea pozitivă și diferențială a manifestărilor ce au corespondent în dezechilibrul intra- și extracelular; amprenta acestui dezechilibru se regăsește în fluide biologice ce pot fi recoltate și analizate (sînge, urină, LCR, suc gastric).

Pornind de la aceste idei general recunoscute, autorii lucrării *Investigații biochimice* și-au propus să treacă în revistă metodele de analiză a compușilor chimici din fluidele umane. Cartea a fost elaborată pe baza dotării materiale actuale a facultăților și laboratoarelor de chimie clinică.

Primul capitol este axat pe prezentarea informativă a principalelor metode fizico-chimice de analiză, utilizate în laborator. Următoarele trei capitole tratează metodele rapide, atît pe cele cu un grad de complexitate redus, cît și pe cele mai complexe, folosite în vederea determinării calitative și cantitative a glucidelor, lipidelor, protidelor și amino-acizilor întîlniți în cazul unor boli, ca manifestare principală sau secundară a diferitelor sindroame. Metodele de separare a componentelor citoplasmatice, bazate pe centrifugarea fracționată a omogenatelor, sînt prezentate în capitolul 5.

Avîndu-se în vedere rolul hormonilor în reglarea funcțiilor organismelor, al vitaminelor în procesele metabolice și al enzimelor ca biocatalizatori organici, capitolele 6 — 8 prezintă principalele metode de determinare cantitativă și calitativă a acestora. Modalitățile de determinare a valorilor normale și patologice sanguine ale principalilor electroliți, valori necesare stabilirii cît mai exacte a diagnosticului, sînt prezentate în capitolul 9.

Alterarea funcțiilor diferitelor organe se traduce și prin modificări ale proprietăților fizico-chimice ale lichidelor biologice; capitolele următoare tratează urmărirea substanțelor cu semnificație patologică ce apar în aceste cazuri. Astfel, se examinează constituenții organici ai sîngelui (capitolul 10), ai LCR (capitolul 11), ai sucului gastric (capitolul 12), ai urinei (capitolul 13); se menționează totodată și modalitățile de recoltare și conservare a acestor lichide biologice.

Capitolul 14, ultimul, prezintă metodele de protecție a muncii din laboratoarele clinice de analiză.

Alături de principiul și modul de lucru detaliat, prezentarea fiecărei metode de dozare este însoțită și de trecerea în revistă a valorilor normale, a variațiilor fiziologice și patologice. Selectarea tehnicilor de lucru s-a realizat într-o asemenea manieră, încît ele pot fi utilizate atît în cadrul lucrărilor practice cu studenții, cît și în laboratoarele de chimie clinică.

Rosalia Mora

I. BURNEA, IONELA POPESCU, G. NEAMȚU, ELENA STANCU, ST. LAZĂR, *Chimie și biochimie vegetală*, Editura didactică și pedagogică, București, 1977, 470 p.

Manualul *Chimie și biochimie vegetală*, apărut recent în Editura didactică și pedagogică din București, cuprinde problemele esențiale ale chimiei generale și biochimiei vegetale, tratate de titularii de disciplină de la institutele agronomice din țară.

Cartea este structurată în două părți mari. Prima parte (autor: conf. dr. I. Burnea — Universitatea Craiova) reprezintă o reușită sinteză a noțiunilor fundamentale de chimie generală. În cele 11 capitole care alcătuiesc această parte, se discută structura atomică, clasificarea elementelor din sistemul periodic, noțiunea de moleculă, tipurile de legături chimice (legătura ionică, covalentă, metalică, de hidrogen, prin forțe van der Waals), noțiuni de termochimie și termodinamică chimică, echilibrele chimice, soluțiile ideale și soluțiile de electroliți, echilibrele ionice, starea coloidală a materiei, oxidarea și reducerea, cinetica chimică, noțiuni de stereochimie și mecanisme de reacție ale compușilor organici.

În partea a doua se expun principalele aspecte ale biochimiei vegetale, ramură a chimiei, cu rol deosebit în înțelegerea, explicarea și progresul multor domenii din complexul științelor agricole. Din cele 18 capitole ale acestei părți, 9 (capitolele 12—20) sînt dedicate biochimiei descriptive, iar celelalte (capitolele 21—29) — biochimiei dinamice. În capitolele 12—15 (autoare: prof. dr. Ionela Popescu — Institutul agronomic Iași) se prezintă rolul biologic al elementelor, apei și sărurilor minerale în viața plantelor, structura, proprietățile și funcțiile glucidelor (oze, diholozide, triholozide, poliozide, heterozide), lipidelor și constituenților lor (acizi grași,

alcooli, gliceride, steride, ceride, etolide, fosfatide), precum și ale protidelor (aminoacizi, peptide, holoproteide și heteroproteide). Trebuie subliniat meritul autoarei de a reține atenția cititorului și asupra concepției prof. H. Vasiliu, privind structura spațială a proteinelor, concepție care a însemnat un preludiu la teoria modernă a lui Pauling și Corey.

Capitolele 16—20 (autor : conf. dr. G. Neamțu — Institutul agronomic Cluj-Napoca) abordează : biochimia vitaminelor liposolubile și hidrosolubile ; nomenclatura și clasificarea enzimelor, proprietățile fizico-chimice și structura catalizatorilor biologici, mecanismul și cinetica reacțiilor enzimatice ; structura și acțiunea biologică a fitohormonilor ; structura și rolul pigmenților carotenoidici, chinonici, flavonoidici și indolici. În ultimul capitol de biochimie descriptivă, se relevă substanțele vegetale de origine secundară (glicozide, lignine, taninuri, uleiuri eterice, rășini, alcaloizi, antibiotice și insecticide vegetale).

În capitolele 21—23 (autoare : prof. dr. Elena Stancu — Institutul agronomic București), după ce se precizează noțiunea de metabolism, cu cele două laturi contradictorii—anabolismul și catabolismul — se dă o atenție deosebită metabolismului glucidic și lipidic, detaliindu-se procesul de fotosinteză, biosinteza poliglucidelor caracteristice regnului vegetal, glicoliza în condiții anaerobe și aerobe, fermentațiile, apoi anabolismul și catabolismul lipidelor simple și complexe.

Capitolul 24 (autor : conf. dr. Șt. Lazăr — Institutul agronomic Timișoara) este axat pe metabolismul protidelor, luînd în discuție biosinteza și catabolismul aminoacizilor, metabolismul cromoproteidelor, biosinteza acizilor dezoxiribonucleic și ribonucleici, codul genetic, biosinteza proteinelor și catabolismul nucleoproteidelor.

În capitolul 25 (același autor) se înfățișează succint corelația între diferite tipuri de metabolism (glucidic, lipidic și proteic).

În ultimele patru capitole ale cărții se dezbat unele probleme, nu numai de deosebit interes sub aspect informațional și didactic, dar și cu implicații practice, ca : aspecte biochimice ale dezvoltării și germinării semințelor, aspecte biochimice ale chimizării agriculturii, poluarea și biochimismul organismului vegetal, biochimia rezistenței plantelor la ger.

Textul lucrării este ilustrat cu 101 figuri și 53 tabele. Cartea conține la început o tablă de materii, iar la sfîrșit bibliografia consultată de autori.

Manualul se caracterizează prin construcție logică, ținută științifică și claritatea expunerii evantaiului de probleme tratate.

Editura didactică și pedagogică a realizat o prezentare grafică reușită a lucrării, cu aspect atrăgător și fără erată, deși aceasta ar fi fost necesară, întrucît textul conține o serie de greșeli, unele datorîndu-se probabil autorilor.

Prin conținutul și forma de prezentare, acest manual reprezintă un prețios instrument de lucru pentru studenții de la facultățile de agronomie și horticultură, dar totodată el poate fi util și altor studenți cu preocupări de chimie și biochimie, precum și specialiștilor din cercetare și producție.

Vlad G Artenie

GERHARD BUNDSCHUH und BURKHARD SCHNEEWEISS, *Immunologie. Ein Nachschlagewerk*, Akademie Verlag, Berlin, 1976, mit Abbildungen, 450 S.

Das Nachschlagewerk für Immunologie, das 1976 von der Berliner Akademie herausgegeben wurde, besitzt aktuellen Wert, und eine unbestreitbare Nützlichkeit.

Die Revolutionen machen sich nicht immer bemerkbar, doch hat die Immunologie heute eine wahre Revolutionierung des gesamten medizinischen Denkens bewirkt, so daß eine Demonstrierung der Aktualität der Immunologie Basisforschung und Immunpathologie eigentlich der Erforschung eines schon seit langer Zeit bekannten Gebietes gleichgesetzt werden könnte.

Im Laufe der Zeit hat sich die Immunologie zu einer unabhängigen in voller Entwicklung begriffenen Wissenschaft ausgebildet, die aufhört eine einfache passive Sammlung von Bakteriologie — und Biochemiekenntnissen zu sein, und die heute keineswegs mehr eine Grenzwissenschaft ist, sondern einen wichtigen Faktor darstellt, der fast alle klinischen und vorklinischen medizinischen Gebiete zusammenfaßt.

Indem die Immunologie ihre eigene Problematik und besondere Methodologie gewaltig entwickelt, erzielt sie eine immer klarer umrissene Auffassung über die Tatsache, daß zahlreiche Krankheiten nichts anderes sind als die Gegenüberstellung des menschlichen Organismus den äußeren und inneren antigenischen Faktoren, Abwehrreaktionen die unter bestimmten Umständen sogar den pathologischen Prozeß erwecken oder erhalten können.

Unter diesen Bedingungen sieht sich der Fachmann jedes einzelnen Gebietes der experimentellen oder praktischen Medizin, von einer ungeheueren Menge von komplexen Informationen, von Neuheiten und Mutationen überwältigt, die das Klassische abändern, er steht vor einer Terminologie, die auf dem ersten Blick, unentzifferbar scheint, vor einer Fremdsprache, die aber in sich ein theoretisches und praktisches Instrument von unermeßlichem Wert birgt.

Von dieser Wirklichkeit ausgehend schaffen die 52 deutschen Autoren des Nachschlagewerkes zum ersten Mal in der medizinischen Literatur eine Zusammenfassung von Informationen und Termini der Immunologie, ein äußerst synthetisches Werk, das das weite Gebiet der Immunologie restlos erfaßt und zahlreiche Daten aus der Immunchemie, Zellulärimmunität, Immungenetik, Immunpathologie, Methodologie und Techniken, enthält, so daß, nachdem man es durchgeblättert hat, man kaum annehmen kann, die Autoren hätten auch nur die unbedeutendste Einzelheit von der heute ungeheueren Menge von Daten eben dieses Fachgebietes ausgelassen.

Das Buch wendet sich an die Ärzte aller Fachgebiete, Biologen, Studenten und Labortechniker.

Angesichts der Tatsache, daß der Arzt, dem dieser Wortschatz nicht geläufig ist, sich fast unmöglich wissenschaftlich auf dem laufendem halten kann, und daß die neue Literatur von diesen Ausdrücken und Daten geradezu überschwemmt ist, möchten wir das Verdienst der Autoren besonders hervorheben, durch mühsame außerordentlich kompetente Arbeit, dem in Verlegenheit geratenen Leser eindeutige Erklärungen geboten zu haben, Erklärungen, die jetzt leicht und zeitsparend erlaubt werden können, Daten die kurz aber vollständig ausgesprochen sind. Dem Leser des Kompendiums werden auch Hinweise für eine notwendige selektive Bibliographie für eine eventuelle Vertiefung der betreffenden Frage, die ihn beschäftigt gegeben.

Die Termini, über 2000 an der Zahl, werden sinnvoll erklärt, ihre Synonyme, die in der Fachliteratur gebrauchten Abkürzungen, ihre Etymologie, die Definition der Begriffe, ihre theoretische und praktische Bedeutung angegeben.

Das Nachschlagewerk enthält Tabellen und orientative Schemata. Es werden die Prinzipien der Arbeitsmethoden beschrieben, und durch schematische Darstellungen der Impfstoffe und anderer Immunpräparate ihre Herkunft und Anwendung erläutert.

Wenn wir dieses Nachschlagewerk gebrauchen, so erkennen wir die schwierige Aufgabe die sich die Autoren gestellt haben, ein ungeheuer reiches und verschiedenartiges Material zu verarbeiten, um uns ein schnelles Identifizierungsmittel zur Verfügung zu stellen, für ein in voller Entwicklung begriffenes Gebiet.

Dieses Werk ist eine wichtige theoretische, wissenschaftliche, praktische und methodologische Stütze, für alle Fachleute die an der Klärung der unentbehrlichen Begriffe interessiert sind im Laufe einer ersten Orientierung im neuzeitlichen immunologischen Denken, ein Werk das unsere höchste Anerkennung beanspruchen darf.

Eugen Carasevici

S. DROBNI, *Surgery of the Intestines*, Akadémiai Kiadó, Budapest, 1976, 500 p.

This book written by a well-known author proves to be most interesting and up-to-date. Certain areas are treated in an outstanding manner, while others deserve a careful scrutiny Some chapters will undoubtedly create controversy.

The author treats his topic in the light of the latest achievements in gastroenterological surgery, surgical proctology and related fields. The book is in one aspect unusual, i.e., it does not separate surgery of the infant, child or adult. It is divided into 11 chapters, dedicated to: special examination methods in surgical diseases of the intestinal tract, surgery of congenital anomalies, duodenum, small intestine, surgery of the vermiform appendix, colon, rectosigmoid, sarcoma of the intestines, colostomy, surgery of the anal region and surgery of the retrorectal space.

In many chapters, after some succinct anatomical (or embryological) considerations, the author summarizes current concepts on the clinical picture, diagnosis, and the generally accepted alternatives in the surgical management of the diseases of each main segment of the intestinal tract from injuries to tumours. While devoting to the duodenum some 25 pages and to the small bowel 52, he obviously favours the colerectal and anal conditions, proving his strong proctological attachments.

The first 5 chapters have the length suitable for a manual, while in the 6th, dealing with the colon, the ulcerative colitis alone covers one hundred pages building up a genuine monograph. This proves to be, along with the colorectal cancer and anal conditions, the field in which the author takes the deepest interest and has the widest personal experience. The chapter dealing with technical problems in the ablative colorectal surgery is likewise outstandingly interesting, a modified pull-through procedure of proctosigmoidectomy for rectal cancer with preservation of the sphincter apparatus being a personal clue.

Colostomy, its postoperative management and aftercare, are dealt with concisely and to the point in Chapter 11 being worth while remembering for the interested reader.

The intrinsic value of the book is enhanced by an author index with full titles and a subject index.

As a whole, this is of greatest interest not only for the general surgeon, proctologist and gastroenterologist, but also for the general practitioner and the paediatrician.

The quality of the paper and illustrations, the clear, easy-to-read typing, increase the value of the book.

Ștefan Luchian

E. PROCA, *Diagnosticul cancerului de prostată* (Diagnosis of prostatic carcinoma), Ed. Medicală, București, 1977, cu ilustrații, 118 p.

There are two main reasons to write a book : to fulfil a need (real or assumed) or to distil knowledge acquired in a certain subject. It is a pleasure to review a book that does both. The need is real. The cancer of the prostate is for most medical students and practitioners a well-known, well-studied condition. The diagnosis is easily established, following the descriptions given in textbooks and manuals. The therapy benefits by a wide range of methods, from estrogens to surgery. At first sight the problem is already solved, but in fact it is far from being so.

The prostatic carcinoma is the second cause of male death in the United States, the fifth in England and the sixth in Romania. Its onset and evolution is very "personal" and unpredictable. When the rectal examination provides unmistakable data, the tumour has already invaded the capsula of the gland and the disease is in a late stage, with poor therapeutic results. The accurate diagnosis at an earlier stage is of paramount importance and the author deliberately limits his field to diagnosis, namely to real possibilities of early diagnosis. Pertinently interpreting, from this point of view, a wide clinical experience (over 900 cases) he continuously correlates each factor with its influence on survival and cure rates.

After some general considerations on the prostatic carcinoma, regarding age incidence, the relationship between prostatic cancer and adenoma of the prostate, prostatic carcinoma following adenomectomy, the author briefly reviews the chief complaints and symptoms, only to conclude on their late and confusing onset in the natural history of the disease.

An important chapter deals with clinical examination, and the author, beginning with the words of H. R. Young on rectal examination, strongly stresses and proves the diagnostic value of this quite simple investigation, correctly and repeatedly done. Becoming a screening procedure for the male patient over 45, performed in the private office or the outpatient department by an alert general practitioner or physician, repeated at regular intervals and by the same examiner, the rectal examination can disclose the suspect prostatic nodule, thus focusing our attention on the prostate and triggering the series of further investigations. The limits and shortcomings of the examination are also clearly outlined.

The enzymological studies in prostatic carcinoma and their diagnostic value are briefly reviewed, well documented with the author's clinical experience.

Another very important chapter is dedicated to the biopsy of the prostatic gland. The different approaches to biopsy of the prostate are described and their advantages and disadvantages set. The author's preference for the prostatic transrectal needle biopsy with "tru-cut" Travenol needle is pertinently documented.

In the subsequent chapters the cytological diagnosis, cystoscopy, the different radiological investigations and scanning techniques are reviewed and their diagnostic value appraised.

A very synthetic and up-to-date chapter concerning treatment gives the interested reader the landmarks and guidelines in therapy, according to the UICC staging.

The last chapter succinctly summarises the main points in the book, and the author optimistically concludes that, if read, this (most interesting and valuable) book results in only one prostatic cancer early diagnosed, its purpose will have been fulfilled.

The references are conveniently given at the end of each chapter, an aid for the reader interested in a particular topic.

Ştefan Luchian

R. E. BOGNER and A. G. CONSTANTINIDES (Ed.), *Introduction to Digital Filtering*, John Wiley, London, New York, Sydney, Toronto, 1975, 198 p.

This book treats a subject of major importance; it points out the obvious advantages of digital filtering and processing (stability, reliability, high adaptability for digital transmission and computers) in comparison with those of analogue systems.

The work is intended for all the professors and students interested in the latest methods of computer processing of signals and for people working and designing in this very promising branch of digital filtering.

The mathematical treatment of the problems involved makes the book accessible to anyone with a general knowledge of the matter and provides a general view on the large possibilities it opens up.

The first chapter ("Introduction", author R. E. Bogner) defines the digital filters, shows their features and qualities comparing them to the analogical ones being recommended to those who want to obtain hybrid systems.

The second chapter ("Introduction to Sampling and z-Transforms", author P. F. Blackman) gives the basic mathematical notions for sampling and z-transforms.

The third chapter ("General Characteristics of Digital Filters", author A. G. Constantinides) is concerned with the concept of digital filtering which is transposed in time and frequency domains, thereby rendering their fundamental characteristics obvious.

The fourth chapter ("Synthesis of Digital Filters from Continuous Filter Data", author A. G. Constantinides) deals with methods of digital filters synthesis from continuous filter data. It indicates some devices of the bilinear transformations between the general low-pass continuous and multi-band filters.

In the fifth chapter ("Direct Synthesis of Digital Filters", author A. G. Constantinides) the direct synthesis of digital filters (polynomial and monotonic Butterworth-type low-pass digital filters) is described.

The sixth chapter ("Filters with Finite Duration Impulse Responses, author G. B. Lockhart) underlines the problem of filters with finite duration impulse responses. The author analyses analogue and digital transversal filters, impulse and frequency responses, discrete convolution, analogue and non-recursive digital filters, the design of non-recursive filters by frequency sampling, window functions, a.s.o.

The seventh chapter ("Fourier Transform Methods", author R.F.W. Coates) covers the Fourier transform method: theorems and properties of the discrete Fourier transform (DFT), analysis of continuous systems, fast Fourier transform (FFT), computing the DFT and computational efficiency in the FFT, convolution of long sequences, power spectrum estimation, a.s.o.

The eighth chapter ("Frequency Sampling Filters", author R. E. Bogner) shows the principles and theoretical aspects of frequency sampling filters.

The ninth chapter ("Frequency Sampling Filters with Integer Multipliers", author P. A. Lynn) considers the major aspects of the recursive digital filters with integer multipliers: linear-phase digital filters, recursive realization of linear-phase digital filters, low-pass, high-pass and band-pass filters and filters sidelobe levels.

In the tenth chapter ("Quantization Effects in Digital Filters", author V. B. Lawrence), the errors induced by quantization in digital filters are examined.

In the last chapter ("Optimization Techniques in Digital Filter Design", author G. C. Bown), one can see the optimization techniques in digital filters: the minimax criterion, the finite duration response and the exchange algorithm.

The subject matter is presented at a high scientific level, and we wish to congratulate the authors for their excellent achievement.

It is intended to be of real use to students and everyone interested in technics and in fundamental electronics.

Roman I. Sireţchi

D. H. SHEINGOLD (ed.), *Analog-Digital Conversion Handbook*, Analog Devices, Inc. Norwood, Massachusetts, USA, 1976, 396 p.

This book, written by the engineering staff of Analog Devices deals basically with a subject of primary importance : A/D and D/A converters (understanding them, testing, choosing and using them in systems).

The work is interesting for all the engineers and students who seek enlightenment, ideas or guidance on matters having to do with modular and IC conversion devices.

The first part ("Converters at Work") contains five chapters.

The first chapter ("Data-System Components") provides a brief sketch of the principal components of a data system (amplifiers, multiplexers, registres, comparators, up-down counters, power supplies, digital displays a.s.o.). Their general characteristics and aptitudes are summarized and their roles in conversion activity are hinted to.

The second chapter ("Data Acquisition") shows some of the configurations that have proven useful and/or popular and discusses some of the considerations involved in the choice of configuration, components and other elements on the data system.

The third chapter ("Data Distribution ") treats data distribution of those systems that use D/A converters.

The fourth chapter ("Analog-Digital Functions") indicates a few examples of the uses of digital and analog elements in intimate combination (sources, scale factors and modulations, functional relationship, trigonometric applications, waveforms, functions of time, digital servo device a.s.o.).

The fifth chapter ("Application of Converters") illustrates the scope and breadth of systems and equipment, involving converters, that have been conceived or built so far. The applications concern the automatic testing, communication and signal analysis, displays a.s.o.

The second part ("Converters") also contains five chapters.

In the first chapter ("Understanding Converters") a survey of the more popular converter design approaches is included.

In the second chapter ("Designing Converters") some aspects regarding the converter design are examined (the reference loop, temperature variations effects, the logic sequences a.s.o).

The third chapter ("Testing Converters") illustrates common converter errors and deviations from ideal performance and outlines test schemes for evaluating converter performance that can be adapted to both manual and automatic testing.

The fourth chapter ("Specifying Converters") helps the designer in the process of choosing a converter by providing checklists of relevant questions in making a choice, definitions on specifications and relative feature, a capsule selection guide and an example of selection and evaluation.

The fifth chapter ("Applying Converters") discusses system aspects of selecting converters, a continuation of the discussion in the last chapter.

The third part ("Other Systems Components") deals with some aspects of the use, design and characteristics of operational amplifiers (chapter 1), instrumentation amplifiers (chapter 2), multiplexers and multiplexing (chapter 3) and sample holds (chapter 4).

In the last part ("Guide for the Troubled") some frequently asked questions and some anomalies are examined.

The subject matter is presented at a high scientific level.

It intends to inform the reader of what has been done, to suggest what can be done and to arouse thoughts of what might be done in the respective field. We wish to congratulate the authors for their excellent achievement.

Nonel Thirer

N. V. BOTAN, *Comanda sistemelor de acționare electrică* (Steuerung der Elektroantriebsysteme), Ed. Tehnică, București, 1977, 290 p.

Das Buch richtet sich an Ingenieure und Techniker die in der Priojektierung, im Aufbau und Betrieb von Elektroantriebsanlagen arbeiten und ist gleichzeitig eine besonders nützliche Dokumentation für die Studenten der spezifieschen Sektionen.

Das Buch ist in folgenden 5 Kapitel eingeteilt :

Kapitel I — „Steuerungssysteme der Elektroantriebe".

Es liefert die Grundbegriffe der Elektroantriebe, macht eine Klassifizierung, mit Hervorheben der den Steuerungssystemen angelegten Forderungen.

Kapitel II — „Steuerungssysteme mit dynamischen Elementen".

Nachdem man die in der logischen Algebra begegneten, laufende Benennungen erwähnt, werden verschiedene Aspekte der Analyse und Synthese der sequentiellen elektrischen Schemen aufgezeigt, von denen zu nennen sind :

— Algebra der trivalenten Elemente und der Gruppen von diskreten Elementen ;

— Synthese der Haupt-Steuerungsschemen von Elektroantriebe ;

— Symbolisches und Graphenverfahren für Analyse und Synthese der Steuerungsschemen.

Kapitel III — „Steuerungsschemen mit statischen Elementen".

Es werden verschiedene Möglichkeiten für die Herstellung logischer Kreise beschrieben (z.B. unifizierte Systeme) mit Hinweis auf den entsprechenden Berechnungsaufwand zum Studium der Schemen mit statischer Umschaltung.

Kapitel IV — „Programm-Steuerungssysteme".

In diesem Kapitel wird über Steuerungssysteme mit Programmtaster, Lochkarten, und magnetischen Daten berichtet.

Kapitel V — „Numerische Steuerung".

Dieses letzte Kapitel erörtert das modernste Steuerungssystem, und zwar die numerische Steuerung. Nach Klassifizierung dieser Systeme, beschreibt man die Steuerungssysteme Punkt für Punkt, und mit Dauerbetrieb.

Zum Abschluß werden die Aussichten der Antriebe mit numerischer Steuerung aufgezeigt.

Das Buch, das auf Grund umfassender Arbeit von Seiten des Autors im Bereiche der Elektroantriebe erstanden ist, übermittelt ein einheitliches und gut zusammengestelltes Material, auf dem Gebiete der Elektroantriebssteuerung, und ist eines der ersten mit solchen Inhalt verfaßten Werke.

Eine anziehende und zugängliche Präsentierung des Themas, machen aus diesem Buche ein besonders nützliches Material, für alle Fachmänner die sich mit diesem Problem befassen.

D. Alexa

D. RODDY and J. COOLEN, *Electronic Communications*, Reston Publishing Company, Inc. Reston, Virginia, U.S.A., 1977, 706 p.

This book is addressed to those people who maintain, exploit and work on electronic systems of communications, and is intended especially for students in communications.

To indicate the content of this valuable book, the five parts are listed below and the number of pages of each part is indicated in brackets.

Part I "Communications Fundamentals" (five chapter, 171 p.)

Part II "Electronic Communications Circuits" (four chapters, 160 p.)

Part III "Modulation of Signals" (three chapters, 104 p.)

Part IV "Transmission and Radiation of Signals" (four chapters, 140 p.)

Part V "Communications Systems" (three chapters, 115 p.).

Each part is treated with competence, the authors dealing with fundamental problems of communications.

Chapter one ("Analysis of Passive Circuits") recalls certain fundamental notions of basic electronics, very important in electronic communications. The authors insist on the series and parallel circuits, coupling circuits, filters and maximum power transfer conditions.

Chapter two ("Waveform Spectra") enlarges on the complex repetitive wave and the effect of filtering on complex signals.

Chapter three ("Audio Signals)" is devoted to frequency ranges, sound, loudness, pitch and frequency, room acoustics and electroacoustic transducers.

Chapter four ("Facsimile and Television Signals") introduces the reader into facsimile transmission and into television.

Chapter five ("Noise") insists on thermal, shot, partition, low and high-frequency noises. Also, some aspects of generation-recombination noise, equivalent noise resistance, signal-to-noise ratio, noise factor and noise temperature are treated.

Chapter six ("Power Supplies") describes the supply circuits utilized in electronic communications. It indicates the rectifiers, filters and regulator circuits, the DC-to-DC converters, highvoltage supplies, chemical and solar batteries, a.s.o.

Chapter seven ("Untuned Amplifiers") covers, after an introduction, the AC small-signal and the power untuned amplifiers, insisting on negative feedback. This chapter also describes, from the theoretical point of view, the broadband video amplifiers.

Chapter eight ("RF Amplifiers") is dedicated to the study of tuned RF, special RF and IF amplifiers, and also of frequency conversion, mixers, transmitters and amplifier matchings.

The last chapter of the second part ("Oscillators") explains the very important circuits utilized in communications, the oscillators. After a short introduction, the positive feedback, RC phaseshift, tuned LC and crystal oscillators, the negative resistance oscillators and the frequency synthesizers are also studied.

Chapter ten ("Amplitude Modulation") is concerned with the amplitude modulation theory, single-sideband generation, detection, and the comparison of signal-to-noise ratio.

Chapter eleven ("Angle Modulation") discusses the theoretical aspects of frequency, phase and angle modulation, reflected in some practical circuits. It also establishes an equivalence between FM and PM, and studies the noise in frequency modulation.

Chapter twelve ("Pulse Modulation and Data Transmission") describes the modern systems of communications. Thus, the pulse transmision (pulse-amplitude, pulse-time and pulse-code), delta modulation, coding and codes, error detection, correction codes and digital carrier systems are analyzed.

Chapter thirteen, the first chapter of part IV ("Transmission Lines and Cables"), starts with an introduction and treats the most important aspects of lines and cables circuits utilized in communications, considering the line parameters.

Chapter fourteen ("Waveguides") tackles some problems treated in chapter 13, but in the high-frequency domain.

Chapter fifteen ("Radio-Wave Propagation") refers to propagation in free space, in tropospheric and ionospheric spaces, to low and very-low frequency propagation, a.s.o.

Chapter sixteen ("Antennas") after recalling the most significant principles of radiations, explains the hertzian dipole, the gain and directivity of antennas, the nonresonant antennas and the practical antenna systems for distinct domain of frequencies.

Chapter seventeen ("Receivers") touches upon the last part of he communication system, the receivers. It describes the principal types: superheterodyne, FM broadcast, double-conversion, single-sideband, HF communications and television receivers. The major theoretical aspects of receivers, the choice of intermediate and oscillator frequencies, the channel selectivity the automatic gain and frequency control, the amplitude limiters a.s. o., are also treated.

Chapter eighteen ("Transmitters") is dealing with the study of telegraph, amplitude-modulated, FM and television transmitters.

The last chapter ("Single and Multiple-Channel Communication Systems) presents the multiplexing, high-frequency and VHF/UHF radio systems, wire telephony, microwave and satellite communications.

The large number of examples and problems (more than 240), included in this book, contributes to finding an easier way of understanding the subject.

An author and subject index help the reader to quickly find what is of interest to him.

Treating in a correct, accessible and extensive manner the subject and presenting the material in a clear and concise style, "Electronic communications" falls within the pleasant and very useful books.

Roman I. Sireţchi

R. W. CLOUGH and JOSEPH PENZIEN, *Dynamics of Structures*, McGraw-Hill Book Co., New York, 1975, 643 p.

Covering the whole range of practical interests in structural dynamics, this book furnishes a comprehensive treatment of the theory and its application to the solution of practical problems arising from the action of dynamic loads on structures. Although it concerns mainly civil engineering structures such as buildings and bridges, the methods described are applicable to any type of structure (airplanes or ships).

Presented in five parts, the book progresses in a logical sequence beginning with simple single-degree-of-freedom systems and advancing to complex structures represented as discretized multi-degree-of-freedom systems and elastic continua. The analysis of vibration shapes and frequencies, the response of structures to arbitrary periodic or nonperiodic loadings as well as both linear and nonlinear structures are considered.

The first three parts of the book deal with the deterministic analysis of dynamic systems including the evaluation of their seismic responses to specified loading history, some illustrative examples being also given.

Part IV continues the theme with a concise treatment of probability theory and the probabilistic approach to the analysis of dynamic response to random loadings.

Part V covers the main aspects of seismic structural analysis : earthquake motion, deterministic and nondeterministic analysis of seismic response.

The earthquake engineering problem treated in this part, considered as one of the most important applications of structural dynamics, includes also some valuable contributions to the strength or safety evaluation of buildings subjected to seismic action.

The book is suitable for advanced undergraduate and graduate level courses, and can be a useful reference source and also a valuable guide in structural engineering design offices or building research institutes.

D. Vasilescu

R. PARK and T. PAULAY, *Reinforced Concrete Structures*, John Wiley and Sons, Inc., New York, 1975, 769 p.

The basic theory of the analysis and design of reinforced concrete structural elements and structures is presented in this book. It emphasizes behaviour of members and structures in particular, their strength and deformation characteristics up to ultimate load.

Based on these considerations, the main aspects of design for seismic type loading are examined, the effects of high intensity cyclic loading and ductility requirements of structures located in seismic zones being also taken into account.

In the authors' opinion, seismic design involves more than a consideration of additional static lateral loads on the structure. Proper attention to details, and an understanding of possible failure mechanisms are essential. Considerations of behaviour under intense seismic loading involve an understanding of the deformation characteristics of members and structures in the inelastic range as well as the manner in which structures respond to intense earthquake motions, areas which are given due regard in the text.

The properties of concrete and steel, the strength and deformation of reinforced concrete structural members, the service load behaviour, the strength and ductility of frames and shear walls as well as the detailing of members and joints in reinforced concrete structures are presented in depth, and correlated with the latest experimental results in the field.

The text is based on American practice, but wherever relevant, it examines European practice as well.

Where reliable design approaches are not available, it critically examines the problems, and makes constructive proposals for their possible solution.

The book is useful to design and research engineers interested in aseismic reinforced concrete structures and to students as an advanced undergraduate or graduate course in reinforced concrete.

D. Vasilescu

M. V. ZAVARINA, *Stroitelinaia climatologhia* (La climatologie et les bâtiments), Ghidrometeoizdat, Leningrad, 1976, 310 p.

Dans ce travail, se situant parmi les peu publiés jusqu'à présent dans ce domaine, l'auteur cherche à établir les relations qui existent entre la climatologie et les bâtiments.

Dans le premier chapitre, ou l'introduction, on définit la notion de climat en faisant une brève présentation historique du développement de la climatologie et en indiquant la manière dont on a amassé des informations concernant le climat.

Dans le deuxième chapitre on présente les caractéristiques générales du climat et leur importance applicative, en insistant sur la stabilité des procès annuels, sur la précision des indicateurs climatiques, ainsi que sur leurs formes de manifestation.

La partie principale du travail est consacrée à l'évaluation des actions climatiques sur les bâtiments. Ainsi, dans le troisième chapitre on présente les bases de l'interprétation des indicateurs climatiques, afin d'établir les normes concernant la conception des bâtiments.

Dans le quatrième chapitre on présente les relations entre le climat et les constructions urbaines, c'est-à-dire : les relations entre le climat, la planification et la construction des localités, les caractéristiques spécifiques du climat urbain, les facteurs climatiques qui exercent une influence sur la durabilité des bâtiments, le microclimat des pièces, etc.

Dans le cinquième chapitre on indique : « Les paramètres climatiques de calcul employés dans la conception des bâtiments », en soulignant l'influence des conditions locales sur les normes concernant les indicateurs climatiques.

Les chapitres 6,7 et 8 se rapportent aux charges causées par le vent, le givre et la neige.

Le chapitre 9 traite de l'action de la corrosion atmosphérique sur les matériaux de construction.

En général, le travail se caractérise par le fait qu'il n'appelle pas aux théories et formules compliquées et pose l'accent sur les problèmes pratiques.

Il contient un riche matériel illustré et s'adresse à un groupe important de spécialistes qui travaillent dans le domaine de l'exécution, des projets techniques et de l'exploitation des bâtiments.

Le livre est, en même temps, utile aux spécialistes météorologues, aux climatologues et aux étudiants des facultés de géographie, de construction et d'architecture.

Bien que le travail présente beaucoup de données spécifiques au climat de l'Union Soviétique, on peut l'employer également au climat similaire. C'est pour cette raison que nous le recommandons aux spécialistes de Roumanie.

Constantin Bogos

EA. M. AIZENBERG, *Soorujenia s vyclivciaiuşcimisea sveazami dlea seismiceschih raianov* (*Structures for seismic zones with come-out-from-work connections*) *Stroizdat, Moskva, 1976, 213 p.*

This book treats about one of the most modern concepts of detailing and designing structures subjected to strong earthquake motions. It represents a first systematization of a broad range of problems regarding the analysis and synthesis of reconsidering seismic protection systems by means of structures with nonstationary responses.

Based on an ample study of the effects of the strong earthquakes which occurred during the last few years and on data furnished by the author's own researches as well as by investigations carried out in other countries, the computation methods for nonstationary system response are scientifically analysed in the first chapter.

Chapter II makes a synthesis of reconsiderations on seismic protection systems while Chapter III deals with the design methods for buildings having connections which come-out-from-work progressively when acted by strong seismic motions correlating them with the analysis of the whole seismic optimum response and with consideration on the foundation system and conditions.

The described design concept leads both to a proper safety of resisting structure and to some important economic advantages, ensuing from the decrease of seismic forces by changing the dynamic characteristics and seismic energy transfer to building between adjustable limits.

By its contents and problems related to seismic risk this is a guide book for the research and design engineers concerned with earthquake engineering problems, and at the same time, a useful manual for high-school teachers and practicing engineers.

D. Diaconu

VALERIU BLIDARU, *Sisteme de irigaţii şi drenaje*, Ed. didactică şi pedagogică, Bucureşti, 1976, 556 p.

Literatura tehnică românească s-a îmbogăţit cu remarcabila lucrare *Sisteme de irigaţii şi drenaje*, în care bine-cunoscutul profesor şi specialist V. Blidaru prezintă cele mai noi realizări obţinute în acest domeniu, pe plan naţional şi mondial.

În cele 11 capitole ale lucrării sînt tratate, la un înalt nivel ştiinţific, diferite aspecte din domeniul irigaţiilor şi drenajelor. Astfel, sînt prezentate schemele hidrotehnice ale sistemelor

de irigații și drenaje, adecvate diverselor tipuri de relief, proprietăți funciare, precum și diverselor folosințe (irigații, hidroenergetică, navigație, alimentări cu apă etc.), debitul de calcul pentru proiectarea acestor sisteme în condiții climatice variate, de la zonele aride pînă la cele umede, pentru irigația de tip permanent sau complimentar.

Se prezintă apoi distribuția apei, după un anumit program, între diversele folosințe ale teritoriului echipat cu rețele hidrotehnice. În continuare, sînt expuse principiile și schemele de automatizare, cu baza materială adecvată pentru rețele deschise de aducțiune — distribuție, cît și pentru cele închise sub presiune, mergînd pînă la nivelul consumatorului propriu-zis.

Ultimele două capitole se referă la drenajul ce se aplică pe terenurile cu exces de apă sau pe cele salinizate din zonele irigabile, precum și la baza teoretică experimentală adecvată cercetărilor pe modele.

Se acordă o atenție deosebită problemelor privind valorificarea maximă a resurselor de apă, prin alegerea metodei de irigare și distribuția automată a apei, precum și prin utilizarea rațională a fondului funciar și a forței de muncă.

Lucrarea este deosebit de utilă pentru pregătirea studenților cu profil hidrotehnic, pentru specialiștii care lucrează la proiectarea, execuția și exploatarea sistemelor de irigații cu funcționare automată, completate cu rețele de drenaj, precum și pentru cei care cooperează la gospodărirea complexă a apei într-un anumit teritoriu.

Cartea aduce o reală contribuție tehnico-științifică la realizarea importantelor acțiuni de irigații și drenaje prevăzute pentru cincinalele următoare. Ea cuprinde idei, soluții și tehnologii moderne pentru realizarea programului vast de amenajare a bazinelor hidrografice din țara noastră prin introducerea automatizării și folosirii în scop multiplu a rețelelor și instalațiilor hidrotehnice pentru transportul, distribuția și colectarea apei.

Redactarea îngrijită, structurarea corectă și judicioasă a materialului, precum si nivelul ridicat de tratare a problemelor conferă lucrării o înaltă valoare și prestanță.

Ch. Popescu

Tehnoredactor: Iacob Magdalena

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