

A period of Internal Medicine seen through textbooks (1950-1960)

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The History of Medicine can be read in various ways. Sometimes it takes the form of global narratives, built around key figures and major discoveries. This type of approach has resulted in works of undeniable interest but which, due to their broad scope, deal with each subject in a relatively superficial way.

Perhaps more important are the historical studies that restrict themselves to a brief period, a discovery, or a particular scientist. There are approaches that involve research and interpretation of unpublished tests, resulting in the acquisition of new knowledge that serves as a source for more general works.

As is known, the historiography of the sciences has been influenced by the statement of Lakatos, according to whom “*a história sem filosofia é cega*” (history without philosophy is blind). Little wonder, then, that it is not merely a repository of knowledge, but also forms part of an analysis that enables the genesis and evolution of knowledge to be understood. The narratives of Medicine have not escaped this trend, with increasing importance being attached to the investigation of the routes leading to the great discoveries.

In view of this, I decided to address the History of Internal Medicine from 1950 to 1960, exclusively through the analysis of textbooks. I chose this period not only because it was a time of extensive and rapid change, but also because these were the years between my entry to University and the last public entrance exams for the highest level of hospital career of the Hospitais Civis de Lisboa. During this time, I accompanied first hand the evolution of medical knowledge, and had ongoing contact with works containing up-to-date information of recognized scientific rigor.

This idea came out of a series of informal conversations with SPMI Directors, to whom I proposed to organize a small nucleus of documents aimed at preserving the memory of Portuguese Internal Medicine, including posters, photographs, programs and all the documentation related to the activity of the Society and its members. At that time, it was also decided to

set up a small library, with old books related to the disciplinary areas of Internal Medicine.

But a problem arose: besides their decorative interest, what purpose would books with outdated technical knowledge serve, except as objects of desire for bibliophiles or book collectors? Then the idea occurred to me to try and bring them back to life, reevaluating their importance in my training and that of other internists, and through some comments on their contents, take a journey through the evolution of theoretical knowledge and technical advances in medicine over that ten-year period.

I should make it very clear that this selection of books is solely the result of my own preference. But despite being convinced that the choices of any internist of my generation could not be very different, I proposed, even so, to add something else to this initiative, so that it would not be merely a collection of my personal preferences. Therefore, I decided to make the following proposal: That the comments on the selected works would be published in a staggered form in the journal “*Medicina Interna*”, maintaining an open text which, over time, can receive and include opinions of internists on these or other works.

My objective, therefore, is to open a record of each of the textbooks, which will not be exhaustive or restricted to a single model, and to invite other internists to complete or improve this initial selection, thereby participating in a journey through the recent History of Internal Medicine. Only then will the texts be combined in the form of an essay, to be published by the SPMI, which will act as a guide to a small library that will be available for consultation. I believe that this will enable those interested in the history of medical thought to benefit from important material for reading and research.

The catalogue of selected works includes, besides technical information (author, publisher, number of pages, date of publication, date of edition analyzed), a general opinion of the contents and an opinion on the influence that each book has had on the training of internists.

Also, some problems were selected that enable an evaluation of the state-of-the-art and the evolution of knowledge over that ten-year period. I selected the following areas of medicine, among others: Therapies for tuberculosis, leukemias, hypertension and renal insufficiency; concepts on nephroses and hepatitis.

Each book is given a score of one and five asterisks, which also follows my own personal criteria, and can be commented on or corrected through messages addressed to the journal “*Medicina Interna*”. Is not this what we call, in our post-modern era, interactivity? It is my sincere hope that it will work.

It is also my belief that work should not remain here, but that it should be added to and continued by other, younger internists, analyzing textbooks that have influenced the generations of subsequent decades. In this way, we will gain a broader perspective of the progresses seen in medicine, and enrich our ideas of the evolution of medical knowledge.

THE 1950S: THE YEARS OF TRANSITION

While studying for my medical course, which I completed in Coimbra in 1956, the Faculty was dominated by old professors on the brink of retirement, and the teaching, still mainly focused on the French and German cultures, was not completely freed from the use of the course workbook. However, on arriving the following year in Lisbon to compete for the General Internship, I carried in my suitcase, some general works and monographs that had served as the basis of my theoretical training during my clinical classes.

In Lisbon, I found an environment in which Internal Medicine occupied a very strong position, still in the footsteps of the school led by Pulido Valente and his disciples. This can be shown by simply recalling some of the names that dominated the scene: Oliveira Machado, Ducla Soares, Frederico Madeira, Fernando Nogueira, Carlos George, Valadas Preto, Pena de Carvalho, Adolfo Coelho.

This generation, which was influenced by works of German origin (Strumpel, Domarus, Epinger), began to follow publications of Anglo-Saxon origin (Osler, Cecil), a fact that led to a transition of medical knowledge, which up until then, had been based mainly on anatomical-clinical relations, to a medicine that was increasingly based on physiopathological criteria. Yet it was curious to see the huge importance that publications written in Spanish then assumed, some of which were of Argentinean origin. From this

period, names like Jimenez Diaz, Gregório Maraion, M. Bañuelos and Pedro Pons went down in the History of Medicine. This fact should be emphasized, because among us in Portugal, little or nothing was published. One notable exception was the book “*Lições de Tisiologia*” by Lopo de Carvalho. But even this would have, as we shall see, very little impact compared with the work on tuberculosis by another Spanish author, Manuel Tapia, who, having escaped the Spanish Civil War, came to work at the *Estância Sanatorial do Caramulo*. (Sanatorium)

We shall therefore record some books that influenced Portuguese Internal Medicine during the 1950s. Although the first editions of some of these works were published before this decade, their influence continued for a considerable time, whether directly or indirectly, through the leading figures of Internal Medicine who preceded and marked my generation.

Lecciones de Patología Médica (1940, 1941, 1945, 1946, 1947, 1948) *****

Author: Jiménez Diaz.

Publisher: Editorial Científico Médica, Madrid-Barcelona.

Number of pages: 5 925

This is a monumental work in six tomes, distributed in 7 volumes (tome II is divided into 2 volumes), which had enormous influence on the training of Portuguese internists. Published between 1934 and 1952, it was reprinted several times. Its content resulted in a shorthand record of the lessons given by Jimenez Diaz at the Madrid School of Medicine.

The publication of several of the tomes was delayed and problems due to the Spanish Civil War, a fact that is recorded in the preface to tome III, published in 1941, which the author dedicates to some of the colleagues who disappeared during the “*furor rojo*”.

Jiménez Diaz worked in Germany for two years, therefore it is only to be expected that his treatise follows the dominant paradigm of Germanic medicine, based on experimentation and on the most recent knowledge of pathological anatomy and biochemistry. However, I emphasize the clinical meaning that is constantly present throughout the work, which led the author to insert numerous cases drawn from his own personal experience, among the theoretical expositions. I also emphasize the detailed discussion of controversial issues of the medicine of that

time, always accompanied by opinions of numerous scientists. Curiously, and contrary to what would later become common practice, the work contains no bibliographical references to the authors and works cited.

In terms of its division into apparatus and systems, the work follows the general scheme of the great treatises of Internal Medicine. It is noted, however, that Jimenez Diaz dedicates the VI Tome, with 998 pages, exclusively to diseases of the hepatic parenchyma, a fact that is of special interest because this is an area of pathology to which he dedicated many years of activity.

Some occasional comments enable us to see the state-of-play of medicine at that time, in terms of theoretical knowledge and therapeutic resources.

Tuberculosis, which at that time occupied a major part of the activity of the internists, as it was responsible for the high morbidity and mortality rates (in Portugal, the number of deaths was around 13,000 a year), is dedicated 279 pages containing numerous and detailed anatomical and clinical descriptions. The recommended treatments of the disease included, besides hygiene and diet, calcium, gold salts, tuberculin and collapse therapy.

For the treatment of leukemia, radiotherapy, arsenic and benzene were recommended.

For the treatment of renal insufficiency (1945), Jimenez distinguishes excretory from functional uremia – whose approach is essentially etiopathogenic – of uremia due to renal disorder. For this, nitrogen-poor diets, blood-letting, purgatives, and diuretics were used at the time, which the author totally condemns. On the other hand, he recommends, in the initial phases, diets specially planned for each patient, with a minimum protein content of between 40 and 60 gr. per day. In the terminal phase, he recommends the administration of large quantities of water (3 liters per day) and also refers to a number of more recent methods: Plasmapheresis, now completely abandoned; dialysis (extraction of blood, dialysis and reinjection) a painful method with limited benefits; and the introduction of saline solutes in the peritoneum, in order to dialyze the urea, a method which, according to Jimenez Diaz, appears to open new horizons, but which he restricts himself to merely mentioning, as there was no conclusive data available at that time.

The nephropathies, according to a model that would be extrapolated for the anatomopathological

classifications of other organs, are grouped into nephrites, nephroses and nephroscleroses. Nephroses, at that time, were still defined as diseases of the tubular epithelium (1945).

Extensive discussion is recorded, of “catarrhal jaundice”, epidemic jaundices, and the jaundices that emerged after arsenic therapy and vaccination (1948). The aim then was to find out if all these situations corresponded to one or various diseases, and whether their etiology was infectious. Jimenez Diaz tends towards the hypothesis that they are all the same disease, and that their cause is related to one or more viruses. The anatomical lesions of these entities are described as a “serous inflammation” of the parenchyma, as proposed by Eppinger, in contrast to the “biliary obstruction due to duodenal inflammation” that had been described previously by Virchow.

Manual de Patologia Médica (1947)***

Author: M. Bañuelos e al.

Publisher: Editorial Científico-Médica.

Number of pages: 3 475

This is a work in three tomes, with six volumes, in a smaller format than the work by Jimenez Diaz. The first edition came out in 1934, followed by several new editions. At the beginning of the 1950s, it was a very popular book among students and interns.

M. Bañuelos, a Professor at the University of Valladolid, was the coordinator of the edition, in which various professors from other Spanish universities also collaborated.

The work, whose publication was delayed several times due to the Spanish Civil War, was intended, as announced in the preface, as a practical manual for consultation, for use by doctors and students.

The layout adopted follows that of the treaties of Internal Medicine, with the inclusion of a chapter dedicated to Aeronautical Medicine, in the 1947 edition, deserving special mention.

Tuberculosis also takes up much of the work (110 pages), and is accompanied by plentiful radiographic documentation. The therapy, besides a vast array of non-specific general measures (climatic cure, diet, heliotherapy, direct irradiation of the lesions and psychotherapy), also includes some specific measures (tuberculin and gold salts), symptomatic treatment, and collapse therapy.

Chronic uremia is treated with dietary measures, blood-letting (in cases where there is asthma, neu-

rological signs or retinitis), lumbar puncture (in the presence of neurological aggression or retinitis), and antispasmodic and sedative medication. In the terminal phase, hunger diets are recommended - compensated with glucose serums associated with small doses of insulin -, and blood-letting and purgatives.

In the drug treatment of arterial hypertension, iodine, nitrites, nitro-glycerin, choline and the “circulatory hypotensor hormone of the pancreas” are recommended.

The only treatments for chronic leukemia were radiotherapy and arsenic.

Nephroses are considered degenerative tubular lesions, of which there are various types: Albuminous, fat, lipoid, necrotic and amyloid.

For hepatic diseases, Bañuelos adopts the classification of Roessle, which is similar to that proposed by Volhard and Fahr for the kidney: hepatitis (predominant lesions of the epithelial cells), hepatosis (lesions of the mesenchymal cells) and cirrhosis (lesions of the two hepatic components with epithelial degeneration and conjunctive neoformation).

Of the manifestly jaundice diffuse hepatopathies, so-called catarrhal jaundice – which appears to include various etiopathogenic types – is distinguished from epidemic hepatitis, which is highly contagious and is probably caused by a filterable virus.

Despite the numerous author citations, the work contains no bibliographic references.

Formas Anatomoclínicas, Diagnóstico y Tratamiento de la Tuberculosis Pulmonar (1939, 1941, 1945) ***

Author: Manuel Tapia.

Publisher: Livraria Luso-Espanhola, Lda, Lisboa-Barcelona

Number of pages: 1340

This is a work in three tomes. The first was published in 1939, and the others in successive years. New editions were published after 1945.

Manuel Tapia was Director of the “Hospital Nacional de Enfermedades Infecciosas e Tuberculose” of Madrid, and the “Sanatório de Fuenfria”. Escaping from the Spanish Civil War, he ended up coming to Portugal, where he had been invited to join the clinical body of the Estância Sanatorial do Caramulo as Scientific Director, where more than six hundred tuberculosis patients were undergoing treatment.

Heavily influenced by the Germanic medical

tradition, with its anatomical and clinical roots, he gathered, in just a few years, vast clinical and radiographic material that served as the basis for a treatise that would be, for almost a decade, the main reference work in the study of pulmonary tuberculosis.

In this work, besides the importance attributed to the morphological classification of lesions, clear importance is given to radiology, which was, at that time, the most commonly used method for the diagnosis and monitoring of pulmonary lesions.

The treatment of tuberculosis was dominated by various techniques of collapse therapy (pleural and extra-pleural pneumothorax, pneumoperitoneum, thoracoplasty and phrenicectomy), which are widely analyzed in the third volume. It also has chapter dedicated to the “section of adhesions” written by the thoracic surgeon of the Sanatorium, Luiz Quintela.

Despite the numerous citations, which reveal vast knowledge of everything that had been published on tuberculosis up until that time, no bibliographic references are given for the works cited.

In 1950, Manuel Tapia, with the collaboration of two other doctors of the Sanatorium, published another volume entitled “*Formas Anatomo-Clínicas de la Tuberculosis Traqueobronquial en sus Relaciones con la Tuberculosis del Niño e del Adulto*” which was played a decisive role, at that time, in the understanding of the pathogen of pulmonary tuberculosis.

Enfermedades del Hígado. Patología General y Especial y Tratamiento de las Hepatopatías (1941) *****

Author: Hans Eppinger (Spanish version by Juan Rof Carballo)

Publisher: Editorial Labor, S.A.

Number of pages: 805

Hans Eppinger had been Director of the First University Clinic of the Vienna School of Medicine. This treatise was the result of investigations in the field of pathological anatomy and biochemistry applied to clinical practice, carried out during the exercise of his functions.

Eppinger introduced the concept of “hepatolienal diseases” - which would not have a great future - whereby diseases of the liver were not isolated occurrences, but included the entire reticuloendothelial system.

He considered “catarrhal jaundice” to be an obscure problem, and perhaps the most difficult area

of hepatology, but in all the cases he observed, he always found parenchymatous lesions which he called “serosal hepatitis”. He therefore became the first to challenge Virchow’s theory of “duodenal catarrh” and defend the existence of parenchymal lesions in epidemic hepatitis.

This treatise, written prior to the introduction of hepatic biopsies in clinical practice, became an essential reference work that would have a strong influence on the investigation and clinical practice of hepatology in the decades that followed.

Lições de tisiologia (1942) **

Author: Lopo de Carvalho

Publisher: Livraria Luso-Espanhola, Lda

Number of pages: 400

This book, with XII chapters, is a collection of theoretical lessons given during the 1940-41 academic year, by Lopo de Carvalho, at that time in charge of the “Clinic of Pulmonary Diseases” at the Lisbon School of Medicine.

Written in a clear and didactic style, this essay contains three chapters that deserve special mention. Two of them – “Imagens arteriais do hilo” (Arterial images of the hilum) and “Angiopneumografia” (Angiopneumography) – are the contribution of the author and his collaborators to the development angiographic techniques of the lung, following the works of Egas Moniz on the cerebral territory, and those of Reynaldo dos Santos on the renal circulation. A third chapter contains important information on the epidemiology of tuberculosis in Portugal, a disease which at that time, was a serious health problem. It is noted that in 1931, Lopo de Carvalho would be appointed by the government to lead the fight against tuberculosis, as part of the Assistência Nacional aos Tuberculosos (National Assistance for Tuberculosis Patients) campaign.

Despite its undoubted merit, this book was partially eclipsed by the aforementioned work by Manuel Tapia that had been published three years earlier.

Gastroenterology (2nd edition 1944, reprinted in 1947)****

Author: Henry L. Bokus

Publisher: Saunders Company, Philadelphia and London

Number of pages: 2 897

Bokus, Professor of Gastroenterology of the University of Pennsylvania, was the editor and coordinator of the

treatise in three volumes, divided into 125 chapters. Two of these volumes are dedicated to the digestive tract and a third to the liver, pancreas and bile ducts. Each chapter ends with an extensive bibliography, and at the end of each volume, there is an alphabetical list of contents.

Containing detailed and up-to-date information on the digestive pathology, it became an essential reference for internists and gastroenterologists for several generations.

In the chapter dedicated to the liver, the author defends his view that cases of “catarrhal jaundice” described by Virchow are no more than situations in which degenerative lesions of the parenchyma are present.

Manual de Diagnóstico Etiológico (4th edition, 1950) ***

Author: Gregorio Marañon

Publisher: Espalsa-Calpe, S.A.

Number of pages: 1014

This book the first edition of which appeared in 1943, was published in three editions before 1950. It was, according to its author, an attempt to go beyond the mere recognition of a symptom, syndrome or disease, and to try and understand the final objective of the clinical symptoms: etiology.

The book opens, then, with an alphabetical index of all the contents, which range from acute abdomen to the coughing zones, enabling easy consultation of the subjects, which are arranged in the text according to the respective systems (curiously, the author does not make the classic distinction between apparatus and systems).

Each title gives a definition of the situation addressed, a description of the pathogenic mechanisms, the clinical exploration and the differential diagnosis, followed by a list of possible causes, with comments.

To give an example, the case of ascites is cited. After the separation and pathogenic and laboratory differentiation of the two basic groups of ascites (by transudation and by exudation) and after the description of the clinical semiology and differential diagnosis (for example with ovarian cyst), a list of causes of ascites is given, each of which is subdivided and commented on, namely: Ascites by peritonitis, ascites in polyserositis, in venous hepatic cirrhosis (Laennec), in other hepatic diseases, in abdominal

tumors, ascites by compression of the vena cava, by deep vein thrombosis, in generalized edema, and finally, chylous ascites.

This treatise, which also has an alphabetical index of the authors cited, was for nearly three decades the primary reference work for doctors starting out in clinical practice.

Current Therapy (1950) ****

Editor: Howard F. Conn

Publisher: W. C. Saunders Company

Number of pages: 736

Published for the first time in 1949, this book would become the most popular treatise of medical therapy in subsequent decades. Besides the Editor, twelve consultants and 269 collaborators also took part in the preparation of this volume, from various specialties.

Written for all doctors, but particularly general clinicians, it aimed to provide an up-to-date record of the current therapies practiced by invited specialists. Analysis of some of its contents gives an idea of the context of medicine at that time.

Following the discovery of sulphamide (1936), it was the turn of antibiotics to come onto the scene. First penicillin (1941), then streptomycin (1944) followed by aureomycin, tetracycline and chloramphenicol. Many infectious diseases, like meningococcal infections, brucellosis, typhoid fever and rickettsiosis, responded to one or more of these new drugs, but the accumulated experience was, in some cases, very limited. It would also become clear that syphilis responded to penicillin.

It began to be seen that Streptomycin was effective in the treatment of tuberculosis, although it was considered too toxic to be recommended for all cases. PAS was already being investigated in experiments in association with streptomycin, but the data on the results were still insufficient.

In leukemia, the drugs used were nitrogenated mustard, eurothane and Fowler's solution.

In the treatment of hypertension, some drugs, like chloride and tetramethylammonium, prisolone and dihydroergocornine, had been abandoned; all that remained was *Veratrum viride*, on which some hopes still rested.

Uremia of renal cause was limited to palliative therapeutic measures. Peritoneal washing and the artificial kidney were considered complex methods,

with dubious efficacy, but which were capable of temporarily correcting the uremia until the resumption of kidney function.

In the area of cardiovascular diseases, there is a set of drugs that deserve special attention: Digitoxin in cardiac insufficiency and auricular fibrillation; quinidine in arrhythmias; nitroglycerin in acute attack of angor; heparin and dicumarol in post-myocardial infarction; and penicillin in subacute bacterial endocarditis.

Hematología Clínica (3rd edition, 1951) **

Author: Manuel E. Varela, former Full Professor of Embryology and Histology at the Faculty of Medical Sciences of Buenos Aires and former Professor of Clinical Medicine.

Publisher: Librería y Editorial "El Ateneo"

Number of pages: 653

This book, which was widespread in the Spanish-speaking countries and in Portugal, is divided into XXIV chapters, and includes an appendix and an alphabetic index of contents. Each chapter ends with a small list of bibliographic references.

It is in the area of leukemia and lymph proliferative diseases that a greater distance is noted in relation to present-day therapeutic resources. The recommended treatments for chronic leukemia were radiotherapy, radioactive phosphorous, urethane (ethyl carbamate) and arsenium. Benzol was not advised as a drug at that time, as it was poorly tolerated. Nitrogenated mustards were defined as highly toxic substances, and totally ineffective. In acute leukaemia, radiotherapy and radioactive agents were considered useless, and reference was made to rare remissions following exchange transfusion. The use of folic acid antagonists is proposed (aminopterin and methopterin), compounds considered highly toxic, with which some remissions had been recorded.

For multiple myeloma, which at that time was known as Kahler's disease, and for which no cure was known, deep radiotherapy and stilbamidine were recommended for the pain.

In malignant granulomatosis (also known as Hodgkin's or Paltauf-Sternberg disease), in addition to radiotherapy, arsenics and Fowler's solution (potassium arsenite), the use of nitrogenated mustards were also recommended, substances that were considered highly toxic, but with which remissions of between 3 months and one year had been obtained.

Nefropatías (12th edition, 1953) **

Author: Manuel E. Varela, former Full Professor of Embryology and Histology of the Faculty of Medical Sciences of Buenos Aires, and former Professor of Clinical Medicine.

Publisher: Libreria “El Ateneu”, Buenos Aires.

Number of pages: 483

This book, which is divided into XXXII chapters, contains a brief but rigorous description of the renal physiology, as it was defined in the first half of the 20th Century, following the pioneering contributions of Cushny, Richards, Pitts and Homer Smith, whose works are cited by the author.

The classification adopted for the nephropathies is that proposed by Volhard and Fahr in 1913: Degenerative (nephroses), inflammatory (nephrites) and arterial sclerotic (scleroses). What characterized nephroses at that time, besides their degenerative characteristic, was the fact that they were located in the tubules, with little or no involvement of the glomeruli. A distinction is made between acute forms – located in the lower nephronium and accompanied by renal insufficiency – and the chronic forms, which include “lipoid nephrosis”, clinically manifested by a “nephrotic syndrome”. It is seen that a clear separation is made between two distinct complaints; “acute tubular necrosis” and “nephrotic syndrome”, the latter being linked to a physiopathological condition and not to a single morphological lesion.

In the chapters dedicated to hypertension, the renin-hypertensin mechanism is described, which was known from the works of Goldblatt (1934), Houssay (1938) and Page (1938), and “malignant hypertension” is attributed special importance which, as the name suggests, was accompanied by high mortality: 91% at five years, according to some statistics. The reason for this poor prognosis was related to the lack of therapeutic resources available at that time. Besides general measures, the only treatments available were drugs that were only effective when administered at levels very close to the toxic dose. These were: Sodium and potassium thiocyanate, extracts of *veratrum viride*, and sympathoadrenal system blockers (dibenamine, hydrogenated alkaloids of ergot, and methionine derivatives).

For the treatment of chronic uremia, in addition to diet and correction of extra-renal factors, measures directed towards the various manifestations of renal insufficiency are also recommended: calcium for

muscle irritation, chloral hydrate and barbiturates for nervous excitability, sodium bicarbonate for acidosis, and transfusions for anemia. In the treatment of acute uremia, various techniques of purifying the blood by vividialysis are mentioned, where were yet to be experimented on: artificial kidney, peritoneal irrigation, and continuous gastric washing. In particular, a description is given of the Kolf artificial kidney, in which results are obtained that are “not very satisfactory, but also not totally discouraging”.

Bacterial and Mycotic Infections of Man (2nd edition, 1952) ****

Author: René J. Dubos et al.

Publisher: J. B. Lippincott Company

Number of pages: 886

Coordinated by René Dubos, this work, the first edition of which was published in 1948, was contributed to by thirty-seven specialists, including names like T. H. Weller and Jacques Monod, who would later be Nobel Prize winners (1954 and 1965), and A.B. Sabin, who introduced the oral vaccine against poliomyelitis in 1965.

René Dubos, a Frenchman who gained his qualification at the Instituto de Agricultura Agronómica de Paris, emigrated to the USA in 1924 and began working with Selman Waksman, who was to become a Nobel Prize winner in 1952 following his discovery of streptomycin. From 1927, he was admitted as a researcher at the Rockefeller Institute, where he carried out much of his activity.

The book is divided into thirty-seven chapters on bacteriology and mycology. It contains extensive bibliographic references at the end of each chapter, a bibliographic index of authors, with reference to the pages on which they are cited, and a subject index. It is a detailed and rigorous updating of knowledge in bacteriology, a discipline that had emerged less than a century earlier, with the works of Pasteur and Koch, and in which rapid advances were largely due to the demonstration of the role of bacteria in the pathogenesis of infectious disease.

In addition to the chapters dedicated to each of the groups of microorganisms, the following subjects are also addressed, among others: Bacterial and physiological morphology, in particular, tinctorial characteristics and metabolism; properties related to the capacity to produce diseases (virulence, production of toxins, etc); serology and immunochemistry; blood groups;

allergic states (anaphylaxis, allergic inflammation, Shwartzman phenomenon, etc.)

The work also includes a chapter on Chemotherapy, a word which, according to Ehrlich, meant “treatment of infectious diseases with chemical substances that attack the microorganism in the host itself”. At that time, the antimicrobial agents available were: penicillin, streptomycin, aureomycin, tetracycline, chloramphenicol, sulphonamides, sulphones, nicotinic acid hydrazides (isoniazid), nicotinamide, thiosemicarbazones, viomycin, and para-aminosalicylic acid (PSA).

For more than two decades, this was the preferred reference on microbiology for many internists.

The liver and its diseases

(2nd edition, 1950) ***

Author: H. P. Himsworth

Publisher: Blackwell Scientific Publications, Oxford

Number of pages: 222

This work is based on a series of conference lectures given in 1947 at the Lowell Institute in Boston, by H.P. Himsworth, who was Secretary of the Medical Research Council and Professor of Medicine at the University of London

In the author's opinion, this was the most favorable time to review the state of knowledge on hepatic diseases, in light of the increasing prevalence of infectious hepatitis – which afforded a vast accumulation of clinical data - and the recent experimental approaches that had made it clear that hepatic diseases were not only the result of the presence of toxic substances, but also of a lack of essential nutritional components.

The book, which contains experimental data and extensive anatomopathological data, is constructed around three fundamental types of hepatic lesion – necrosis, post-lesion regeneration, and fibrosis – and of the various etiological factors responsible for them – vascular, metabolic, toxic and biliary.

One of the most interesting and original aspects of the book is the experimental studies on hepatic lesions caused in animals by nutritional factors, and the attempts to extrapolate the results of these experiments to learn about hepatic diseases in man. These experiments focused, in particular, on diets lacking in protein, cystine and tocopherol, or diets with excess fat, and the protective effects of lipotropic substances like choline and methionine. Although it seems evident that a lack of certain nutrients

was not sufficient to cause solid hepatic necrosis in man as observed in animals, it was also considered probable that in undernourished races, hepatotoxic agents could cause severe lesions that were not seen in normal dietary conditions. The use of lipotropic substances, particular choline and methionine, in the treatment and prevention of hepatic diseases, was a common practice in the 1960s, much of the theory of which was based on the work of Himsworth.

Also of note is his classification of hepatitis presented in this thesis, which would serve as a point of departure for others that were adopted later, by various authors: Acute (zonal and solid), subacute (solid) and chronic (post-necrotic scarring and diffuse hepatic fibrosis).

The Kidney. Structure and Function in Health and Disease (1951) *****

Author: Homer W. Smith

Publisher: Oxford University Press

Number of pages: 1049

This book is an updated summary of the mechanisms of formation of the urine, as we know it today. Based on Claude Bernard's concept of the interior milieu, later expanded by Cannon to the notion of the homeostatic state – whereby all the physiological agents act to maintain the composition of the organic liquids constant – the author reveals the rapid developments in knowledge of renal function seen in the first early of the 20th Century. With Cushny (1926), it was established that the formation of urine began with the filtration to the glomerular capsule of a solute without proteins – the ultrafiltrate – but doubts remained concerning the reabsorption and secretion mechanisms and tubular secretion. This latter aspect would later be established by Marshall in his studies on glomerular nephrons in animals (1929).

With the application by Richards and collaborators of microdissection techniques, it was possible to develop methods of microanalysis and determine the changes in urine composition along the nephron, enabling many of the mechanisms of urine formation to be clarified.

It was in this context that Homer Smith, as a Professor of Physiology at New York University College, carried out extensive research from 1930, introducing methods of renal clearance and creating techniques for non-invasive measurement of the glomerular filtration rate, renal blood flow and tubular

transport capacity. His most important works relate to the secretion of organic acids by the renal tubules, ultimately demonstrating that para-aminohippuric acid was the most appropriate agent for measuring renal blood flow.

His efforts to integrate all the knowledge of renal physiology, in light of their own experience, resulted in this monumental work, which marks a high point in the medical publications.

The book describes the various steps in the formation of urine, giving a detailed description of the experimental works that had made a decisive contribution to clarifying the physiology of the kidney. It is not, therefore, an easy book to read, but it became the work of choice for internists engaged in the study of renal pathology, or specializing in this area.

In the final chapters, fifty-one pages are dedicated to the study of diseases of the kidney and urinary apparatus, with the principal objective of describing the physiopathological alterations of each situation, evaluated in light of the physiological data described throughout the work. It also records that at that time, the concept of “nephritic syndrome” had clearly emerged, which replaced that of lipoid nephrosis, and is described as the occurrence of edema, proteinuria and hypoalbuminemia, nearly always in association with hypercholesterolemia and lipemia, linked to widely diverse renal lesions: amyloidosis, intercapillary glomerulosclerosis, disseminated erythematous lupus, renal syphilis, renal vein thrombosis, and a pure or genuine form called “lipoid nephrosis”.

The work is divided into twenty-seven chapters, with 2,300 bibliographical citations and an author index.

Hypertension and nephritis (5th edition, 1954)****

Author: Athur M. Fishberg

Publisher. Lea & Febiger, Philadelphia

Number of pages: 986

Fishberg was Director of Medicine at the Hospital Beth Israel and Professor of Clinical Medicine at New York University Postgraduate School of Medicine.

After the 1st edition, published in 1939, five new editions of this work were published up to 1954. Over the fifteen year period between the first and fifth editions, much progress had been made: the numerous cases of shell shock observed during the Second World War enabled the effect to be seen of the decrease in

pre-renal perfusion, and also in the pathogenesis of acute renal insufficiency, but also the hydroelectric imbalances related to the kidney function. The more recent progressions in renal physiology, in turn, and their application to clinical practice, have enabled the identification of alterations in glomerular and tubular function seen in Bright's disease. The phrase that opened the 1947 edition (“The dominant function of the kidney is excretion”) was replaced, in the 1954 edition, with the phrase: “The dominant function of the kidney is the defense of the osmotic pressure, volume, reaction and composition of the extracellular fluid”. In the second paragraph of the 1954 edition, the works of Cushny, Richards, Marshall and Homer Smith are cited.

The book is divided into thirty-two chapters, fourteen of which are dedicated to the study of arterial hypertension. The remainder are distributed into the major syndromes (renal insufficiency, uremia, edema, and proteinuria) and the various types of pathology of the kidney (necrotizing nephroses, chronic nephrosis, glomerulonephritis, etc.). Fishberg makes a distinction between necrotizing nephroses, which are characterized by tubular necrosis and acute renal insufficiency and are related to various causes (crush syndrome, hemoglobinuria, mercury intoxication, etc.) and chronic nephrosis, which is accompanied by solid albuminuria, edema and alterations in proteins and plasmatic lipids, in the absence of inflammatory lesions of the kidney. “Nephritic syndrome” which, according to the author, already existed at that time, and was widely accepted, is only referred to at the bottom of the page.

The following drugs are cited for the pharmacological treatment of hypertension: Nitrites, thiocyanates, veratrum viride preparations, methonium salts, hydralazine, ergot alkaloids, Rauwolfia serpentine (reserpine) and adrenergic blockers (tetramethylammonium chloride, priscoline, dibenamine hydrochloride and regitine).

The therapy cited for uremia includes: dietary measures, improvement in renal excretion (administration of liquids in the hyposthenuria, correction of prerenal azotaemia and treatment of cardiac insufficiency), the promotion of extra-renal excretion and correction of some manifestations of the uremia (glycosylated serum and insulin for hyperpotassemia, transfusions for anemia, sedatives for agitation and insomnia, etc). Among the measures to promote extra-renal function,

besides those considered of historic interest, the author discusses some of the most recent ones: artificial kidney, peritoneal irrigation, gastric washing, spinal drainage and blood transfusion, but states that none of these has been very effective. The methods of dialysis are indicated only for cases of acute renal insufficiency or cases considered reversible, but it was considered to be of dubious benefit at that time.

Medicina Interna Compêndio Prático de Patologia Médica (5th edition in Spanish, 1956) ***

Author: A.V. Domarus and P. Farreras

Publisher: Manuel Marín e C^a Editores. Barcelona

Number of pages: 1245

The 5th edition in Spanish, based on the 21st edition of the German work, "Grundriss der Innere Medizin", following "redactado de nuevo y puesto al día" by P. Farreras who was an Adjunct Professor of Pathology and Clinical Medicine at the Barcelona School of Medicine.

A textbook that was very popular among students and interns around the middle of the 1950s, it followed the traditional structure of works on Internal Medicine.

A brief review of some chapters shows some important updates to medical knowledge, alongside some other concepts which by that time, had been clearly and definitively superseded.

The cause of epidemic hepatitis is attributed to a virus (IH).

Nephrosis continues to be defined as a degenerative lesion of the convoluted tubules.

The treatment for tuberculosis was based on the use of streptomycin, PAS, thiosemicarbazones and isoniazid.

For the treatment of leukemia, besides radiotherapy, radioactive phosphorus and arsenic therapy (Fowler's solution) used in myeloid leukemia, the early precursors of modern-day chemotherapy are also mentioned: Mileran and mercaptopurine myeloid leukemia, MET and nitrogenated mustard in lymphoid leukemia, and folic acid antagonists (aminopterin) in acute leukemia.

In hypertension, the recommended drugs are serpasil, pentolinium, apresoline, hexamethonium, and veratrum viride.

In acute renal insufficiency, reference is made to techniques of ureic purification (artificial kidney of

Kolf or Bartrine, intestinal washing, and peritoneal dialysis) and spinal application of short waves was advised, which sometimes restored diuresis. In chronic uremia, besides dietary measures and regulation of ingestion of water and salt according to each situation, ammonia resins – which in the intestine absorb sodium from foods – calcium chloride, and renal diathermy are also recommended.

COMMENT

This brief analysis of some textbooks used by Portuguese internists in the 1950s highlights aspects that could clarify some issues on the evolution and diffusion of medical knowledge.

At the beginning of this decade, there was still a very clear influence of German medicine among us, which was particularly prevalent through the Spanish translations. Up until the Second World War, Germany had been the great center of anatomoclinical and experimental medicine, and for this reason, it became the preferred destination of university grant holders. Sent by Pulido Valente, Fernando da Fonseca, Moraes Cardoso and Cascão de Anciães all spent some time there in the 1930s.

But the German language was not taught as a compulsory subject in schools, and few of us were able to master it. The few rare doctors with knowledge to be able to access the technical language of the German literature made a great show of the fact, and boasted in having information that was not available to everybody. This was no insignificant fact, at a time when the competitive environment of careers in the Faculties and Public Hospitals of Lisbon was very high.

As I have said earlier, the Spanish publishing activity was abundant and of high quality, in contrast to the poverty of the Portuguese medical scene. This fact has been justified by the fact of the small size of our market which, having never penetrated the Brazilian medical environment, which very quickly turned to the USA, was far too small to become profitable. But we must not forget that some of our great internists of the time, like Pulido Valente, had little or no vocation for research and publishing activity. Among the rare exceptions, cited earlier, was "Lições de Tisiologia". Another case that should also be recorded for the important role it played, although in the area of the basic sciences: was "Tratado Elementar de Histologia e Anatomia Microscópica" by A. Celestino da Costa, through which various

generations of Portuguese doctors studied.

The first editions of the textbooks used in this period had, in the main, been published in the previous decades. Among them, some works of Anglo-Saxon origin are cited, such as the case of Fishberg (1939), Bockus (1944) and Dubos (1948). Others, equally celebrated, did not have the same success among us. For example, the work “Principles and Practice of Medicine” by William Osler (1st edition, 1892) never enjoyed great popularity, and the “Textbook of Medicine” by Cecil (1st edition, 1927) only became compulsory reading in the libraries of Portuguese internists some years later.

With the start of the 1950s, some updated editions of the abovementioned works were published, alongside new treatises such as those of Himsforth and Hommer Smith. Although they adopted the format of traditional textbooks, some new characteristics were added, and they ushered in a new style and a new era, marked by a sober, rigorous language, based on exhaustive bibliographic references. Also, the increasing importance began to become apparent, that was attributed to physiopathology which, in a way, complemented a vision that until then had been predominantly anatomoclinical.

In terms of the progress and the evolution of medical knowledge, we find a little of everything during this ten-year interval.

Firstly, the importance given, just as in our day, to the “argument of authority”, as clearly seen in the case of “catarrhal jaundice”. The term was created in 1895 by Virchow, who attributes epidemic jaundice to a biliary obstruction caused by a supposed duodenal catarrh”. This pathogenic interpretation was to continue for several decades, even in the existence of data that suggested a different explanation. It is quite revealing that in the chapter on hepatitis, the prestigious book by Sheila Sherlock, in its 1963 edition, continues to make a brief but respectful reference to “catarrhal jaundice”, at a time when viral etiology and lesions of the hepatic parenchyma were well-known. In fact the pathogeny and anatomy-pathogeny of hepatitis had been definitively clarified with the introduction of the biopsies carried out by Roholm (1939), and by Sheila Sherlock (1943) herself.

Another case of the “argument of authority” is represented in the highly regarded classification of nephropathies, by Volhard and Fahr (1914), namely: “nephrites” (predominantly glomerular inflammatory

lesions), “nephroses” (degenerative lesions located in the tubules) and “nephrosclerosis” (lesions of vascular and renal sclerosis). This classification, which would briefly be extrapolated to other parenchyma - hepatitis, heptososes and cirrhosis, in the case of the liver, myocarditis, myocardosis and myocardiosclerosis, in the case of the heart – continued to be adopted in many works, even when it had become difficult to adapt them to the most recent anatomoclinical data. It was probably responsible for a certain delay in acceptance of the concept of “nephrotic syndrome” as a clinical entity characterized, not by a tubular lesion, but by an increase in glomerular permeability associated with various types of structural lesions of the kidney.

At the start of the 1950s, medicine had just entered the era of antibacterial chemotherapy, and antibiotics. Sulphonamides had been introduced by Domagk in 1935. In 1941, Florey and Chain transformed penicillin, which was discovered by Fleming in 1929, into a powerful therapeutic weapon. In 1944, Shatz and Waskman discovered streptomycin, the first effective antibiotic against gram-negative bacilli and Koch’s bacillus. The end of the 1940s saw the discovery and marketing of other antibiotics: chloramphenicol (1948), aureomycin (1948) and terramycin (1949). Finally, besides streptomycin, other tuberculostatics came onto the scene: isoniazid, thiosemicarbazones, viomycin and PAS.

With regard to this aspect, two issues deserve special note. First, it is emphasized that the discoveries of antibacterial drugs, crucial in the history of medicine of the 20th Century, were not the result of a rational process based on theoretical knowledge. Penicillin was the product of mere chance, and its therapeutic efficacy was not foreseen in the phase immediately following its discovery; sulphamide emerged following a research model introduced by Ehrlich, known as “systematic empiricism”, which was merely an accidental discovery of an active substance, during a chance evaluation of a huge list of chemical compounds.

Secondly, the pioneering work should be recorded here, of Bradford Hill, who in 1948 carried out an investigation that irrefutably demonstrated that streptomycin was effective in the treatment of pulmonary tuberculosis. This marked the start of the era of controlled, randomized clinical trials, which would definitively influence all the medicine that followed.

Another important aspect of the start of the 1950s was the progress seen in the area of human physiology. In this field, of special note is the knowledge of mechanisms in the formation of urine which, together with the technological advances, enabled extra-renal alternatives to plasma purification to be created in situations of uremia. Thus, the first steps were taken in the use of peritoneal dialysis and the use of artificial kidneys, techniques that would become more fully developed in subsequent decades.

This was also the decade that saw the appearance of new drugs used to treat hypertension and leukemia. For hypertension, the first effective, low-toxicity drugs appeared, such as Reserpine and Apresoline, which began to open new prospects for reducing the morbidity and mortality caused by malignant hypertension. For the treatment of leukemia and lymphomas, alkylating agents and folic acid antagonists appeared, the earliest representatives a wide range of anti-cancer drugs that would later be developed.

One of the most interesting aspects of this review of textbooks is the existence of major gaps and delays in terms of the divulgation of up-to-date knowledge. This is a problem that would subsequently be resolved by the Internet, but which in the 1950s, was a major issue, even more so as the degree of updating varied considerably from one work to another. Let us look at some examples: in 1951, Hommer Smith clearly described nephrotic syndrome, while five years later, in 1956, Domarus remained faithful to the concept of nephrosis as a degenerative disease of the renal tubules; in 1950, Conn recommended only penicillin for the treatment of syphilis, reserving arsenium and mercury for exceptional cases of toxicity or resistance, and in 1956, Domarus placed salvarsan, bismuth, mercury and penicillin on an equal footing as treponemicidal agents that should be used, in combination, in cases of primary and secondary syphilis.

To summarize: There is not doubt that in the 1950s, besides having benefited from some previous advances (antibiotics, tuberculostatic), was a period of therapeutic progresses and concepts, the development of which would be decisive in achieving medical triumphs in the decades that followed.

The analysis of textbooks of the 1950s enables us to detect the earliest signs of a shift of the epicenter of medical culture to the Anglo-Saxon countries that would occur in the following decade. Methodology and rigor in the exposure, a concern to base know-

ledge on extensive bibliographic references, and the prominence given to the physiopathological aspects, were already present, for example, in the works of René Dubos and Homer Smith.

The investments driven towards scientific research in the countries that won the Second World War, and the “brain drain” from continental Europe, resulted in rapid progress in the area of medicine, which began to bear fruit. Besides the treatises and monographs of great prestige, there are also English language journals in the area of internal medicine, which began to gain in importance throughout the world: *Lancet*, *British Medical Journal*, *American Journal of Medicine*, *New England Journal of Medicine*, *Canadian Journal of Medicine*, *JAMA*, *Medicine*, and *Annals of Internal Medicine*, are some examples, among many others. ■