Coll. Antropol. **31** (2007) 2: 641–644
Book review

Radiology

(Editors: Andrija Hebrang and Ratimira Klarić-Čustović, Medicinska naklada, Zagreb, 2007)

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On 20 December 2006 within the organisation of Medicinska naklada Zagreb and the Croatian Society of Radiology the third revised and expanded sponsored edition of the textbook RADIOLOGY was presented in the hall of the Croatian Medical Association. The text is primarily meant for medical students but it is also for medical doctors of various specialisations.

In the festive pre-Christmas atmosphere the presentation was attended by numerous radiologists and residents in radiology, members of the Croatian Society of Radiology, authors/co-authors, editors and reviewers and other eminent persons and guests. The presentation was also attended by the Croatian Minister of Science, Education and Sport prof. dr.sc. Dragan Primorac, who addressed the topics of textbooks, teaching and university structure both in Croatia and the European Union, and the Minister of Health and Social Welfare doc. dr.sc. Neven Ljubičić, who addressed problems and plans relating to the improvement of the Croatian health system, in particular the provision of the state of the art radiology equipment, and the chairperson of the Croatian Medical Association prim. dr. Hrvoje Šobat.

Ms Anđa Raič, BA, the editor of Medicinska naklada, chaired the presentation and the speakers were the reviewers prof.dr.sc. S. Šimunić, prof. dr.sc. M. Lovrenčić and prof. dr.sc. K. Glavina and the editors, prof. dr.sc. A. Hebrang and prof. dr.sc. R. Klarić-Čustović.

The expression »A thing that was not published in the media did not happen« has been known and used for quite a long time. Another saying says: »Let's forget the past and look to the future«. Regardless of our intention to use it let us recall its variants, one of which says: »There is no future without the past«, and another »Remembering the past, reaching for the future«. That is why on the occasion of this event we will chronologically address »the past« in relation to the development of radiology and the teaching material related to it.

In the southern part of Mesopotamia, in a fertile valley between the rivers Euphrates and Tigris, in the 5th century BC lived the Sumerians, the most mysterious and highly civilised people in human history, to whom in the history of world culture are attributed the beginnings of writing, books and libraries. They used to write on small clay tablets using engraved symbols/pictures, a method known as pictographic writing. To be literate one had to remember about 2000 pictographs. In the II millennium the writing was simplified and reduced to about 600 symbols. The »pictographic stage« evolved into cuneiform writing, in which strokes having the form of a wedge are formed by the impression of a stylus in soft clay. These tablets were kept in special areas within temples, royal palaces and schools, and also in private collections and thus they can be considered predecessors of libraries/archives. They were used in governmental, teaching and other everyday uses. The Sumerian work was further developed by the Babylonians, Assyrians, Phoenicians and others. Phoenicians by the end of the II millennium had created a new type of writing consisting of only 22 symbols. This writing system was simpler and more practical than the cuneiform, hieroglyphic or other writing systems used in these areas. The Jews first used short inscriptions on ceramic tablets, and later adopted papyrus from the Egyptians. The Egyptians' very decorative hieroglyphics were first inscribed on the surface of temples, mausoleums and other structures, or on wood. From the III millennium onward the Egyptians used papyrus as a writing material. From the 11th century BC it was exported to Phoenicia and Syria and later to Greece and Rome, until it was replaced by parchment and subsequently by paper in the Middle Ages. The papyrus used by the Egyptians for inscriptions was in the form of scrolls and this form was used later by the Greeks and the Romans. The Chinese used to write on bamboo canes, silk and wooden tablets up to the 5th century AD when they developed their own procedure for paper production which was later adopted by the Koreans, the Japanese and the Arabs. The paper production technology gradually improved, thus enabling simpler and cheaper production of large quantities of paper for mass use and gradually completely replacing the use of parchment. In Europe paper has been produced and used since the XIV/XV century AD when the German printer Johann Gutenberg from Mainz first printed using movable type and a press. In Croatia the oldest known books are incunabula printed in Glagolitic printing houses in the XV/XVI century[1].

Although technologies continue to develop rapidly, it is not very likely, at least not in the near future, that modern electronic technologies of text, sound or image compact discs will significantly jeopardise popular traditional printing techniques.

Today's presentation of the third edition of the textbook RADIOLOGY was preceded by 110 years of various developments in society in general and in medicine in particular. Specifically, soon after the epochal discovery of X-rays (Würzburg, 1895), for which German physician Wilhelm Conrad Röntgen (Lennep 1845 – Munich 1923) was awarded the first Nobel Prize for physics (1901), and consequently the emergence of a new branch in medicine – roentgenology/ radiology, radiology came to be used routinely in medicine, both for diagnostic and treatment purposes. The first X-ray machines were purchased (often for use in private practice). In Croatia the first X-ray machines were purchased in Rijeka (1897), Ogulin and Srijemska Mitrovica (1898), in the Hospital of the Sisters of Mercy (Bolnica milosrdnih sestara) in Zagreb (1901), in Lepoglava (1904), Osijek and Bjelovar (1905), in the Hospital of the Brothers of Mercy (Bolnica milosrdne braće) in Zagreb (1907), in Varaždin, Sisak, Karlovac, Nova Gradiška and Vinkovci (1911/12). These X-ray machines were mostly those produced by the Siemens and Koch & Sterzel companies. In the beginning these machines were used mostly by general practitioners, who did not possess either the necessary knowledge or experience, or by specialists in internal medicine, as radiologists as specialists did not exist at the time. Prof.dr. Petar Salcher[2–5] is considered to be the first roentgenographer.

Following the establishment and opening of the Faculty of Medicine in Zagreb (1917/18) there was a need for systematic teaching in roentgenology. In this respect, very important events were the establishment of the Central roentgenological institute (1920), at the location of today's Trauma Hospital (Klinike za traumatologiju) in Draškovićeva St. in Zagreb, the establishment of the Chair of Radiology (1922) at the Faculty of Medicine in Zagreb and the establishment of the Roentgenological Association (1928) within the Croatian Medical Association, and the publishing of their own »Radiological bulletin » by the Roentgenological association (1937).

Radiology teaching was for the most part delivered through lectures, demonstrations and the display of original roentgenograms or photographs. At first the subject was optional but later it became obligatory and knowledge was tested by written examinations. Now studying the subject is obligatory and knowledge is tested by oral examinations. While a lot of professional and teaching material had been published, it related mostly to particular organ diseases /organic systems, diagnostic procedures or to particular radiology segments and for decades there was no systematic comprehensive textbook. To prepare for their tests and their future profession, students had to refer to their notes and their memory.

At the beginning of the '70s of the past century, the then head of the Chair of radiology and general clinical oncology of the Zagreb Faculty of Medicine, prof. dr. V. Gvozdanović, considered that it was imperative that faculty members undertake as an obligation the publication of a textbook. After long discussions the idea of writing an original textbook was given up. Instead it was decided to look for an existing good quality textbook. The choice was a textbook written by Fred Jenner Hodges, Isadore Lampe and Hohn Floyd Holt from the University of Michigan entitled RADIOLOGY FOR MEDICAL STUDENTS[6]. The book was published when the Chair was occupied by prof. dr. Marko Bašić, and was translated by prof. Rene Lui. Though the fourth edition was originally published in 1964 the textbook was useful to students, as at the time of the Croatian publication radiology was not developed to the extent it is now. The book contained 400 pages and was divided, as was usual at the time, into two parts (8 chapters – diagnosis and 7 chapters – therapy). It was well illustrated with figures (roentgenograms, drawings, photos). In a short time it was sold out and in the meantime has become outdated.

Only after the long period of 18 years was a new initiative launched by the Chair of radiology and general clinical oncology of the Faculty of Medicine Zagreb; it was aimed at the three teaching bases (KBC Zagreb, KB »Sisters of Mercy (Sestre milosrdnice)« and KB »Merkur«), on the grounds that,in line with their teaching obligations as faculty members, they needed to prepare and publish an up-to-date radiology textbook, especially because radiology had substantially advanced as far as technological development is concerned. After some years of hard work the first edition of that textbook was eventually published (1994), entitled Radiology. It was edited by M. Agbaba and M. Lovrenčić[7]. It was conceived as complete teaching material for the whole of Croatia. Seventeen authors and co-authors contributed, all being faculty members at the Faculties of Medicine in Zagreb, Split and Osijek. The textbook contained 319 pages, was divided into 18 chapters and was illustrated by 119 figure contributions and seven tables. All improvements to previous technologies as well as new technologies and X-ray machines and diagnostic and treatment interventions were covered.

The imperative of time, the ongoing development of technology and various methodologies, the obligations of the faculty and their teaching needs soon led to publication of the revised and expanded second edition of Radiology[8] which was edited by A. Hebrang and M. Lovrenčić. A specific feature of this edition is that it was sponsored by a number of companies: Pliva d.d.-Farmaceutika, Zagreb; Medika d.d., Zagreb; Sonimed, Zagreb; Johnson & Johnson, Zagreb; Medielectronik, Zagreb; Nycomed Amersham, Zagreb; Belupo d.d., Koprivnica; Siemens, Zagreb and Shimadzu, Zagreb. Such support and cooperation enabled sale at a price acceptable to students, a fact that is commendable and could serve as an example to others. The book was written by 18 authors/co-authors, faculty members from all the four Faculties of Medicine in Croatia (Zagreb, Rijeka, Split, Osijek) and is a complete textbook for the whole of Croatia. The textbook contains 370 pages, it is divided into 22 chapters, is equipped with 196

figures, 6 tables, 19 drawings and charts and for the first time 66 references. The list of authors/co-authors shows that due to the »succession of generations«, in the period of 7 years which elapsed between the two editions half of the authors were replaced by new names.

In the meantime another teaching resource had been published – SEMINARS FROM CLINICAL RADIOLOGY edited by S. Janković[9] with contributions of 44 authors/co-authors, again from the four Faculties of Medicine in Croatia and also from the Faculty of Medicine in Mostar. The work contains 818 pages, is divided into 12 chapters, deals with 452 cases, is enriched with 1702 figures and has a list of 207 references. Regardless of the large number of authors it is written in a uniform didactic and is well laid out way, making it easily comprehensible. The textbook has been accepted and authorised as teaching material by all competent Chairs and Universities in Croatia and Bosnia and Herzegovina.

The sold out second edition and substantial technological and methodological innovations called for the preparation and publication of the revised and expanded third edition of the textbook Radiology[10], which was edited by A. Hebrang and R. Klarić-Čustović. This edition was also sponsored by a number of companies, specifically: Pliva d.d.-Farmaceutika Zagreb; Croatia zdravstveno osiguranje d.d. Zagreb; Medical Intertrade d.d. Sveta Nedelja Zagreb; Sonimed Zagreb; Shimadzu Zagreb; Belupo d.d. Koprivnica; Končar-Elektroindustrija d.d. Zagreb and Končar-Inženjering za energetiku i transport d.d. Zagreb.

The book includes 400 pages; it is divided into 22 chapters, its texts were written by 20 authors/co-authors, faculty members from all the Faculties of Medicine in Croatia (Zagreb, Split, Osijek, Rijeka), and it has 353 figures, three tables and a list of 116 references. Figures are of high quality and partly coloured. The content is expanded by technological and methodological innovations. This edition relative to the previous one has also seen the replacement of up to 50% of authors/co-authors due to the »succession of generations«. This only confirms the fact that nobody is irreplaceable and that nothing has begun with us or will disappear after we are gone.

This is also an occasion to recall some of the numerous earlier publications which enabled students and medical doctors to become familiar with radiology: Radojević S., Nikolić S.[11] Smokvina M.[12], Petrovčić F.[13], Hebrang A. and Petrovčić F.[14], Plavšić B.[15], Škarica R. and Potočki K.[16], Hebrang A.[17], Frković M.[18], Pavić L. and Radoš M.[19], Pichler E.[20], Brkljačić B.[21], Gotovac N.[22].

Let us also mention some radiological texts/chapters in works devoted to other branches of medicine, such as Bilić A.[23,24], Rosandić-Pilaš M.[25], Malčić I.[26] and also quite a number of contributions relating to radiology in the Medical encyclopaedia published by Leksikografski zavod »Miroslav Krleža« Zagreb[27–29] and elsewhere.

One can write or talk a lot about radiology as one can about any other field in science; however, radiology is special as it requires that one also displays its aspects visually. Therefore there can never be too many figures, but to be useful they must be carefully selected and be of high quality. This unfortunately increases publication costs and the sale price of a publication. However this is *condicio sine qua non* to achieve the intended purpose. That is why the sponsors' support was also this time so praiseworthy as it enabled the book to be available to most of the students due to its low price.

Any public publication of popular or professional and scientific texts is a challenging and responsible task; however, publishing teaching materials is particularly demanding. For such an undertaking enormous knowledge, commitment and experience in teaching and testing is required. The Roman philosopher Lucius Annaeus Seneca said: »By teaching others, we ourselves learn«.

The writer of teaching material must bring his knowledge to the level of students which is actually at a low level and try in an adequately comprehensive way to raise their knowledge to a level that will enable them to acquire practical experience and one day to be able to function in their profession in a quality way. The author's skill of writing, his experience, his understanding of how students reason and the determination of the minimum degree of practical/routine knowledge of radiology needed for their everyday hard and human work, play an important role, and as L.A. Seneca says: »It is better to learn the unnecessary than nothing«.

By preparing this third revised and expanded edition of the textbook Radiology, the editors and faculty members of all the four Faculties of Medicine in Croatia have performed one of their basic tasks. They have offered a complete textbook using state of the art standards; however, they as well as future generations will be soon faced with a new task – the preparation of the fourth edition which will integrate new insights in radiology, science, teaching, technologies and methods relating to radiological diagnostics and intervention treatment.

All three of the new editions of the textbook RADIOLOGY over the past 12 years, because of new insights, resulted in an increase in the number of pages, figures and references as well as other improvements. The publication dynamics of new editions in the past guarantees that future radiology chairs and generations of faculty members will continue to assure the provision of high quality teaching material.

The book has been authorised as a textbook by all competent institutions: the Zagreb University Senate, the Commission for Publishing of the Rijeka University, the Senate of the Osijek J.J. Strossmayer University and the Chair for Medical Diagnostics of the Faculty of Medicine of the Split University.

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