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Book Reviews: Technical Books Section

(Page 9 b - Review by Sumer Sethi, Radiologist)

...FEATURED BOOK : MAIN PAGE VERY GOOD ...Success of the author lies in the fact that this extremely readable text requires no background of medical training to understand, yet is detailed enough to inform physicians and scientists interested in this specialty field. The book " FORENSIC RADIOLOGY " will serve as a visual guide and standard reference not only for radiologists, but also for everyone involved in the field of forensics-from anthropologists to trial lawyers!! [Main page] Reviews | [1] [2] Rating : 10.0...

Forensic Radiology, 1st Edition, by B.G. Brogdon. Hard Bound, 10.1" x 7.1" x 1".
CRC Press LLC, 6000 Broken Sound Parkway NW, Suite 300, Boca Raton, FL 33487-2742. , . Publication Date April 9, 1998. 496 pages, ISBN-10: 0849381053; ISBN-13: 978-0849381058 (alk. paper). Price: $162.95.

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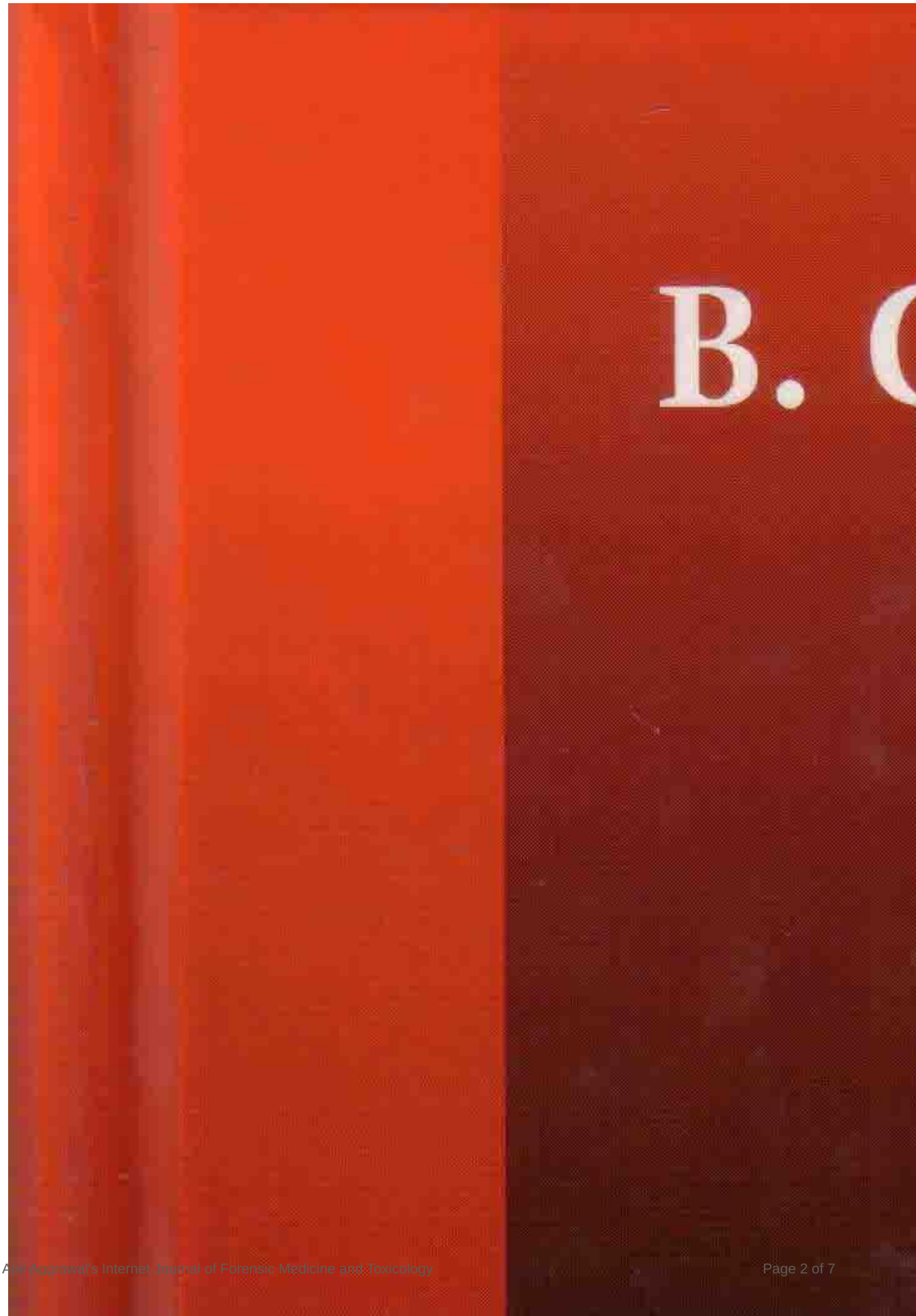
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Radiology is a special branch of medicine, which employs ionizing radiant energy in the diagnosis, and treatment of disease. Superbly described by Harry Z. Mellins as-

“The radiologist perceives a shadow, sees a lesion, and imagines a man. The bedside physician sees the man, perceives the signs and imagines the lesion. They practice from outside in and we from inside out”

Forensic radiology compromises the performance, interpretation, and reportage of those radiological procedures that have to do with the courts and/or law. Although there are many radiologists around the world engaged in the practice of Diagnostic Radiology, not many have published and taken active interest in this very fascinating field of forensic radiology. There is no set definition or standard for a “forensic radiologist”. There is no specialized training or fellowship available in that field; there is no separate society for forensic radiology, nor is there any certification for a subspecialty added qualification in forensic radiology.

Before I commence with a more detailed analysis of the book, I would like to congratulate and thank the author “B.G.Brogdon” for a brilliant concept and a fascinating reading experience. Until now, to the best of my knowledge, there has been no single source of radiological knowledge to turn to when examining x-rays or other radiological images as forensic evidence. This is the first book that I have seen which covers the entire spectrum of radiological applications in forensic reference. Although the book is very comprehensive and detailed enough to inform physicians and specialists in the field, it is very readable and requires no background of medical training to understand. Reading and reviewing this book was both a pleasure and an honor.

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The book has around 477 pages and is divided into eight sections. Each section gradually unfolds this very fascinating aspect of forensic radiology. What is most impressive about the arrangement is that the author gradually starts in the first section with “introduction to forensic radiology”. This section deals with definitions in radiology and forensic, deals with the historical perspective of forensic radiology and scope of the forensic radiology. Then in the next four sections he deals with topics of interest to anybody practicing forensic radiology like “identification”, “gunshot wounds”, “radiology in non-violent crimes” and “radiology of abuse”. In the next section author discusses newest techniques and modalities in diagnostic radiology with their applications in forensic sciences. Being a radiologist I was particularly impressed with the chapter on use of post-mortem cranial MRI in evaluation of suspected child abuse. As a doctor or a scientist it is always awkward to face the courts and appropriately so author has the next section as “coping with the courts”. Finally there is a technical section on production of radiographs, including radiographic equipment, positioning and production of the image, which serves as a primer for the forensic personnel unfamiliar with these procedures. The book provides a total coverage of the field not available in any other format. It has more than 640 pictures, which present a visual understanding of how to interpret radiologic information. And finally there are over 600 references, which offer a comprehensive collection of sources from multidisciplinary literature for further reading.

Reading about various applications of forensic radiology made me feel like reading a Sherlock Holmes story unraveling the mystery of the crime by looking at small clues.

...The use of radiology in forensics is as old as radiology itself. In fact forensic was one of the first branches in which radiology was used, much before other forms of medicine could make use of it. The use of radiology in the administration of justice started within a couple of years of discovery of

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Roentgen discovered X-rays in the year 1895. He was working with cathode rays when he discovered “a new kind of rays”, which he named x-rays, as “X” was the symbol of the unknown. He worked on the rays and found almost all of their fundamental properties. He showed that “the rays propagated in straight line, were not influenced by magnetic fields, the beam could be hardened by passing through absorptive material, secondary radiation could be produced from certain targeted materials and many other basic properties. He presented his first and only paper at the physical institute, University of Wurzburg . During this presentation, he told about the properties of x-rays. Showed the first x-ray film (that of his wife bertha's hand) and also demonstrated how x-rays could be taken.

The use of radiology increased by the day since its discovery by Roentgen. The credit for its use for the first time for the detection of the cause of death goes to Professor A.W.Wright of Yale University . He found the cause of death of a rabbit that he had bought. He wrote:

"A rabbit, purchased in one of the markets of the city, after an exposure of one hour to the rays, left upon the plate a complete representation.... Particularly interesting in this photograph were several small round spots, which appeared dark on the positive print. These were surmised to be shot.... Were readily found and extracted. The mode of the death of the animal was not previously known."

...The first court case in which radiology was used for conviction occurred in America. In this case, a Mr. George Holder shot Mr.Tolson Cunning in the leg. The bullet could not be located by probing and the wound healed with the bullet remaining in place. Mr. Cunning 's leg was later x-rayed and it showed a flattened bullet lying between tibia and fibula. The bullet was removed and the x-ray plate was produced in the court. Mr. Holder was convicted and sentenced to 14 years in the penitentiary. This case showed the utility of radiology in providing justice...
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The first case in which radiology was used in England occurred in 1895. In this case a Miss Ffolliott , a burlesque and comedy actress suffered an injury while carrying out an engagement at a local theater. Hurrying to change costumes between acts, Miss Ffolliott fell on the staircase leading to her dressing room and severely injured her left foot. Even after a month of bed rest, she was unable to resume her professional activities. Finally, early in 1896 a Dr. Frankish sent her to university college hospital where both her feet were examined by X-rays. The x-rays showed a displacement of cuboid bone in Miss Ffolliott 's left foot. This case also was the first case in which comparison x-rays were taken and used to compare the findings to reach the diagnosis.

The first case of murder in which radiology was used was a murder committed on 23 rd April 1896 (note the date on which roentgen presented his paper). In this case a Hargreaves Hartley fired four shots from a pistol into the head of his wife, Elizabeth Ann and then killed himself by drowning himself in the Leeds-Liverpool Canal . Mrs. Hartley survived the attack. Her x-rays were taken on 29 th April. They showed three of the four bullets. Another x-ray, taken on 2 nd May, showed the fourth bullet. Since all the bullets were out of the reach of the probe and condition of the patient was bad, she was not operated upon and she expired on 9 th May. This can be regarded as first case in which radiology probably replaced autopsy.

As the use of x-rays was increasing, it did not take long for the cases of malpractice to come against x-rays. The first of such cases came up in 1895-96. A Mr. Frank Bolling, was thrown from his buggy in Chicago and suffered a fracture of his right ankle on September 2, 1895. By May1896 he was able to return to work but still had symptoms. On September 10, 1896 three x-ray photographs were made using exposure times of 35 to 40 minutes with the tube only 6inches from the ankle. This high exposure led to radiation damage that culminated in amputation of the foot and ankle. The jury awarded $10,000 in damages to Mr. Bolling.

…The success of the author lies in the fact that he builds up the tempo of the book gradually and step-by-step takes the reader into the intriguing world of forensic radiology. Not only does the author describes the medico-legal roles of radiology especially in civil and criminal cases, he also describes some other uses as the article of Dr T.Bordas in which he mentioned about the use of radiology not only for identification through the visualization of old fractures, bullets, or other known peculiarities, but also recommended its use on suspicious packages suggestive of being infernal machines…
The first criminal case in the U.S. involving x-rays was in October 1897 (the case described occurred in Britain). In this case a certain Mr. Haynes was shot in the jaw with a .32 caliber bullet in Watertown, N.Y. X-rays showed the presence of foreign object lodged in the back of the head, in addition to the bullet. Was this a second bullet or a fragment from the first? Dr Gilbert Cannon gave the testimony on the findings of the roentgenogram and said it was not a second bullet. His testimony was subsequently accepted as evidence in the court.

All these cases form fascinating reading!! The success of the author lies in the fact that he builds up the tempo of the book gradually and step-by-step takes the reader into the intriguing world of forensic radiology. Not only does the author describes the medico-legal roles of radiology especially in civil and criminal cases, he also describes some other uses as the article of Dr T.Bordas in which he mentioned about the use of radiology not only for identification through the visualization of old fractures, bullets, or other known peculiarities, but also recommended its use on suspicious packages suggestive of being infernal machines. He also briefly deals with role of radiology in dactylography.

Radiology has been one of the rare discoveries in which almost all the utilities were recognized within a couple of years of its discovery. Author also describes a few high profile cases, which have gone a long way in popularizing the science and also in its development. Cases about Theodore Roosevelt and Adolph Hitler make very interesting reading.

Not only does the author create the interest of the reader in the subject he also provides him with a lot of know-how about the field. The three chapters in Section VIII will serve as a practical primer

devoted to simplification and solution of technical problems which may mystify or bedevil the relatively untrained person who is forced to undertake unfamiliar tasks.

…As technical advances have appeared in radiology they have been embraced and modified by forensic community, author brilliantly devotes a section to “research and new modalities'. He talks about the role of CT scanning, Vanezi's contrast techniques for cadaver vertebral artery systems, the use of solidifying silicone rubber with lead oxide in autopsy studies of vascular structures, and similar applications for the demonstration of esophageal, tracheal, and aortic fistulae…
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This book by Brogdon is a brilliant attempt to illustrate the applicability of diagnostic radiology to the broad range of the forensic sciences. It successfully assists as well as stimulates physicians to take up this very challenging field. I agree with the author that there is always an element of risk involved in such a text that it can be too difficult for some and too simple for others. However, this book by author successfully covers all the aspects of forensic radiology with relative ease and makes reading the book a pleasurable as well as knowledge gaining experience. The book covers the entire scope of radiological applications in forensic sciences including both the current and anticipated uses of the exciting new modalities and techniques.

Success of the author lies in the fact that this extremely readable text requires no background of medical training to understand, yet is detailed enough to inform physicians and scientists interested in this specialty field. The book “ **FORENSIC RADIOLOGY** ” will serve as a visual guide and standard reference not only for radiologists, but also for everyone involved in the field of forensics-from anthropologists to trial lawyers!!

-Sumer Sethi



Dr. Sumer Kumar Sethi (Gold Medallist), is a leading radiologist practicing in New Delhi. He holds an MD degree in Radiodiagnosis from Delhi University, one of the premier universities in India. He received his MD in 2003. He has had an exceptional career for his age. He has published many papers in various national and international Journals and has presented a few papers and posters in various conferences. He has also written a handbook for undergraduate medical students "Review of Radiology" which is a favourite amongst students. He has received many awards in school and university level and has won many national and international radiology quizes. He has been an all India topper on numerous occasions including secondary and senior secondary school, premedical tests and various postgraduate entrance tests. Dr. Sethi can be contacted at sumerdoc@gmail.com

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