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Medical Demonstrative Evidence

Albert Averbach

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Medical Demonstrative Evidence

By Albert Averbach

This issue of the Kentucky Law Journal is labeled “Legal Medicine Symposium.” This is a national recognition of the enormous impact in the tort field of the annual toll involved in compensating personal injury damage claimants. It has been estimated that about four billion dollars annually is expended in compensating personal injury damage claimants, and that this sum is equivalent to the amount spent for all highway construction by local, state and federal governments combined, and twice the amount received by farmers for the value of their food grain production.¹

In the year 1967, over ten billion dollars was involved in the economic cost of the motor vehicle accidents in the United States.²

Accidents now cause more injuries and deaths in a single year than all infectious and communicable diseases combined. It has been estimated that forty-nine million people will suffer non-fatal injuries and an additional ninety thousand will die as the result of accidents in a single year. Based upon surveys of the National Safety Council, it has been concluded that four hundred thousand people annually will be permanently disabled and about ten million more will be disabled for a day or more due to accidental injuries.

Put more graphically, it has been stated that the toll will be . . . "[O]ne dead every 15 minutes. One injured every 22 seconds. Every year the injured and dead equal the population of St. Louis."³

The extent of personal injury litigation annually being filed in the courts country-wide is absolutely staggering.

"No valid statistics exist as to the total annual crop of cases filed in state and federal courts across the country as a result of the annual crop of accidents that involve the nation's 90,000,000 motorists, but we know that the total is gigantic."⁴

The impact of this enormously high accident rate has made tort litigation of great current interest to lawyers, doctors and the courts.

It is imperative that a trial lawyer captures and maintains the interest and attention of the trial jurors. The most efficient method of securing the jurors' "involvement" is by holding their individual attention. As a general rule, most of us dislike hearing about someone else's troubles; thus, for the trial jurors to harken to someone else's physical ailments and injuries, the trial lawyer must arouse the jurors from a state of lethargy to one of interest and concern.

One of the most useful methods of "capturing" the attention and interest of the "twelfers" is by the utilization of available demonstrative aids.

Courts have heretofore indicated that "evidence may go beyond the oral narrative, and may be addressed to the senses . . ."⁵

What part do the different senses play in the learning and retention process? Psychological studies report the following percentages:

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<thead>
<tr>
<th>Sense</th>
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<tr>
<td>Sight</td>
<td>85%</td>
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<tr>
<td>Hearing</td>
<td>10%</td>
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<tr>
<td>Touch</td>
<td>2%</td>
</tr>
<tr>
<td>Taste</td>
<td>1½%</td>
</tr>
<tr>
<td>Smell</td>
<td>1½%</td>
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</tbody>
</table>

⁴ A. Averbach, Handling Accident Cases 4 (1958).
It is apparent that the sense of sight is by far the most important sense perception and must be utilized to the utmost in the courtroom.

A lawyer entrusted with the trial of a personal injury case on behalf of an injured plaintiff must know "merchandising" methods, for in the courtroom he becomes a salesman. In order to fulfill his assignment he must be able to utilize means, media and methods that will arouse the interest of the jurors and sustain such interest. He must resort to graphic, attention-arresting and attention-holding "visual evidence."

The modern trial advocate must be thoroughly conversant with trial techniques that utilize visual aids to translate the impact and importance of physical injuries to a jury.

There are so many worthwhile means of arousing and maintaining the interest of the jurors that it is a pity that more lawyers are not aware of the potential of visual evidence presentations or do not adequately utilize that potential. A caveat at this point is in order. The means and methods and suggestions that follow should be reserved for major injury cases. They should not be overdone, and they should not be resorted to in a trivial or minor case.

Visual evidence, of course, is equally available to the defense lawyers as well as to the plaintiff's lawyers, and to the prosecution as well as to the defense in a criminal case.

The subject of visual or demonstrative evidence has been extensively covered by textbook writers, American Law Reports annotations, law review articles, and many court adjudications.

Visual impressions to a jury can be far more dramatic and eloquent than volumes of verbal testimony.

There is no limit to the ingenious uses of visual evidence aids used to impress the minds and thoughts of the jury. Criminal courts have been extremely liberal in permitting the jury to see photographs and other evidence that have been described as inflammatory or gory. Civil courts in many of the jurisdictions are

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7 People v. Davey, 179 N.Y. 345, 350, 72 N.E. 244, 246 (1904).
now following suit. Recently a video tape of a defendant’s revelations while under the effects of sodium amobarbital was utilized in a Topeka, Kansas, courtroom murder trial to convince the court and jury that the wife had stabbed the husband before he shot her. The judge who permitted this unusual showing is quoted as having said, “I think courts have to use the best devices available.”

The experiment was conducted by a psychiatrist who was the chief of the Menninger Clinic and his comment with reference to the value of the video tape enactment was, “Never in a million years on the witness stand could I have had the eloquence and skill in testifying demonstrated by that tape.” The charge of murder was reduced to manslaughter and a new era was inaugurated in visual aids for courtroom use.

One of the newest techniques in civil cases is to photograph the activities in the day of the life of a totally paralyzed plaintiff.⁸

It is by such judiciously utilized methods that empathy of the jury for the client’s cause is established and maintained.

A railroad general counsel advocating wide use of demonstrative evidence by defense counsel has noted: “Actually failure to give jurors the benefit of such exhibits could well explain some of the high verdicts which have shocked so many of us.”⁹

And an Illinois Appellate Court had said:

Articles by law professors and trial attorneys in various law reviews have pointed out that the very fact people learn and understand better with the eyes than with the ears, makes it possible to abuse demonstrative evidence by giving a dramatic effect, or undue emphasis to some issue at the expense of others. There is obvious merit in these criticisms and the courts must be alert to eliminate such abuse. Apparently the enthusiasm of Wigmore, Greenleaf, and other writers for demonstrative evidence is shared by the courts, and the desirability of giving the jury the best possible understanding of

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the subject on which they are to pass seems to have out-
weighed other factors.\textsuperscript{10}

\textbf{THE HOSPITAL CHART}

One of the most effective methods of conveying to a jury the amount of pain and suffering sustained by the plaintiff is the hospital chart. Unfortunately, this excellent demonstrative tool is frequently not used effectively. The reason that it is misused and neglected is obviously due to the lawyer's unfamiliarity with the symbols used in recording events in the chart and with the make-up of the component parts of a hospital record and chart. The hospital chart is generally made up of the following units, arranged in the usual order:

1. Summary Sheet (Face Sheet)
2. Ambulance Slip
3. Emergency Room Record
4. Admission Sheet
5. Physical Examination
6. Progress Notes
7. Doctors' Order Sheet
8. X-ray Reports
9. Laboratory Reports
10. Consultation Sheets
11. Consent Sheet
12. Anesthetic Record
13. Operative Sheet
14. Transfusion Sheet
15. Pathological Report
16. Physical Therapy Sheet
17. Temperature Chart
18. Nurses' Notes
19. Clinic Record

The most graphic part of the chart, as far as jury impact is concerned, is the doctor's order sheet with reference to medications. Obviously, if the medications are narcotic drugs, the frequency of such orders and the entries by the nursing staff of

the fulfillment of the doctor’s orders are graphic entries of pain and suffering. The dosage, of course, plays an important integral part in this portion of the record. Consultation sheets, anesthetic records, operative sheets, and the day-by-day nurses’ progress notes are all vital parts in the presentation of medical proof. The nurses’ notes are particularly helpful because they are day-by-day records of the complaints of pain and discomfort and what was done to relieve such complaints. The chart is a living daily record of the patient’s ordeals.

The hospital chart is unquestionably one of the most important weapons in the plaintiff’s trial arsenal to impress a jury visually with the enormity of the client’s pain and suffering.

The impact of a hospital chart filled with entries of narcotics to alleviate pain can be graphically demonstrated by a hospital chart which we introduced in evidence in a trial involving a 16-year old girl who suffered 3rd degree burns over 70% of her body. The hospital chart contained the following dramatic entries:

“States she wants to die.”
“Delirious acting—reliving the tragedy.”
“Screaming and crying for her (dead) mother and father.”
“Can’t stand the pain any longer. Doesn’t see the sense of keeping her alive just to suffer.”

Obviously, with entries of this nature recorded by nurses in their tour of duty in the treatment of such a case, a lawyer need not resort to groping for descriptive words. They are indelibly woven in the chart as a living fabric of day-by-day travail and suffering. It is suggested that the total number of days during which narcotic drugs were given be counted and graphically referred to from the chart during the course of testimony. In a major case, it is highly advisable to subpoena and produce the nurse who made the significant recordings, particularly when there is a continuity of entries of pain with narcotic injections to alleviate distress.

In cases involving paraplegics, quadraplegics, amputees, and badly burned patients, emphasis concerning visual impressions to the jury of pain and suffering must be placed on judicious use of the hospital chart. In discussing the chart, it must be emphasized that some of the most important entries will be in the emergency room records, which will generally record the hospital
personnel's actions in the emergency treatment. Where lacerated wounds are extensive and involve underlying structures, they may very well have been sutured in the emergency room. It may be in the emergency room that blood or plasma to combat shock was administered and perhaps a splint may have been applied to the extremities. Other treatment of significance will be found recorded in the emergency room record which many times is not included in the hospital chart and record of the patient. In addition to this entry, in smaller hospitals where emergency records are not fully recorded, the log book or ledger should be consulted, which would show the activities in the emergency room. This record should be utilized at the time of trial. Portions of it may be read to the jury after proper foundation has been laid to show pain, suffering and agony.

The physical therapy department records are generally separately kept and many times these records are important to illustrate the impact of traumatic injuries. They should be consulted, subpoenaed and utilized at the time of trial. Hospital charts containing significant entries may be photographed and enlargements of the pages introduced as visual evidence aids. The hospital chart is therefore of utmost importance and may be absolutely decisive of the issues involved in the action.

The past history, present complaints, physical examination, progress record, X-ray reports, laboratory reports, order sheets, nurses' notes, and discharge record are generally admissible in evidence.\textsuperscript{11}

X-Rays

A great deal of confusion exists among the judiciary as to whether or not X-rays received in evidence may properly be taken into the jury room with other exhibits. This important subject matter is thoroughly reviewed in an annotation in 10 American Law Reports 2d 918 (1950), where cases are collated from several jurisdictions. 53 American Jurisprudence Trials §§ 924, 925 (1945), should also be consulted.

"In cases where no statute has been considered or referred to,

\textsuperscript{11} Annot., 44 A.L.R.2d 553 (1955); [Admissibility of hospital record relating to cause or circumstances of accident or incident in which patient sustained injury].
the courts hold that the jury may be permitted to take X-ray plates or photographs with them into the jury room.\textsuperscript{12}

In many jurisdictions, however, the jury is not permitted to take X-ray films into the jury deliberation room, as they require a shadow box to delineate the fracture and, further, are considered of too technical a nature to permit lay jurors physically to handle them. This is not so, however, if a positive print is used. This is merely a positive photographic reproduction of the X-ray negative. By using a positive print, the necessity of using a shadow box is eliminated. Thus, the jury can take the X-ray photograph into the jury room in the same manner as any other photograph. This useful procedure, unfortunately, is sadly neglected by trial lawyers.

A caveat is needed about X-ray evidence. Never resort to X-ray proof if the fracture is not graphic. For example, it would be erroneous judgment to use X-ray evidence to depict a fracture of the navicular bone of the wrist (a tiny bone); but a depressed fracture of the skull, with subsequent plating, or an extensive fracture of the femur with surgical hardware repair, would call for jury visualization of such injury and repair via X-ray plates.

\textbf{ANATOMICAL CHARTS}

Medical students and nurses are taught from anatomical charts. Properly identified, offered and received in evidence, anatomical charts are excellent visual aids in major injury cases.

There are many anatomical charts on the market. Strongly recommended are anatomical charts distributed by: Dr. C. H. Michel, Incorporated, 3808 Prospect Avenue, Cleveland 15, Ohio; Lawyers’ Aids, 1302 Ontario Street, Cleveland 13, Ohio; and also Clay-Adams Company, 141 East 25th Street, New York 10, New York, known as the “Dr. Michel Medical Charts.” The Michel Charts are a series of four:

1. Chart of the Arterial, Venous and Nervous Systems;
2. Chart of the Muscular System with its Arterial \ldots and Nervous Relation;
3. Chart of Osteology—Showing the Skeleton in the Flesh

and Internal Organs with Their Relation to the Skeleton; and


The Michel Charts are printed in color and are 32" by 44" in size, with or without chart stands, chart case or holders. Clay-Adams distributes the Schick Lithograph Charts in color and the Frohse Lithograph Charts in color. The Frohse Charts are 42" by 62" in size. Clay-Adams also distributed the Bachin Charts in color. Some are 36" by 67" in size and some 20" by 26".

The anatomical drawings published and distributed by Denoyer-Geppert Company, 5235 North Ravenswood Street, Chicago 40, Illinois, are very pictorial, as are the Frohse Anatomical Charts of Central Book Company, 850 DeKalb Avenue, Brooklyn 21, New York.

The American Map Company, Inc., 347 Madison Avenue, New York, New York, publishes a series of 14 charts in full color 30" by 37", which sell for $7.95.

Bancroft-Whitney Company, San Francisco, California 94107, and Lawyers Co-Operative Publishing Company, Rochester, New York 14603, have published an excellent ten-volume work entitled Medical Atlas for Attorneys, which contains wonderful anatomical drawings suitable for courtroom use. This work is highly regarded and unqualifiedly recommended. They have also published recently (1968) a two-volume additional set entitled Surgical Techniques with Courtroom Drawings by the famed medical illustrator, Halcyon H. Cowles. This is a remarkable surgical reference work prepared by surgeons for attorneys, with magnificent drawings and legal references. As an indication of the scope of this work, we list the drawings in the following categories:

- Amputations of the Lower Extremity
- Gallbladder Surgery
- Pulmonary Resection:
  - Pneumonectomy & Lobectomy
- Tracheostomy
- Esophageal Hiatal Hernia Repair
- Laminectomy for Herniation of Lumbar Discs
- Surgery for Abdominal Aortic Aneurysm
- Inguinal Hernia Repair
- Thyroid Gland Surgery
Vagotomy for Duodenal Ulcer
Pyloroplasty for Duodenal Ulcer
Lumbar Nephrectomy
Management of Femoral Shaft Fractures
Cataract Removal
Prostatectomy
Appendectomy
Mastectomy
Fractures of the Proximal End of the Femur
Neurological Aspects of Skull Fractures
Large Bowel Resection
Retinal Detachment
Splenectomy
Hysterectomy

Volumes 6 and 7 of *Handling Accident Cases*, written by myself, Dr. Robert Tuby and Harry A. Gair, and published by Lawyers Co-Operative Publishing Company, is lavishly illustrated. These medical drawings can be duplicated on most duplicating machines and used as courtroom anatomical charts.

Bobbs-Merrill Company, Inc., 4300 West 62nd Street, Indianapolis 6, Indiana, has published a set of charts that are very useful in the trial of a "whiplash" injury case. These drawings, six in number, show the muscular as well as bony structures of the neck in forward and backward bending positions. The doctor, by using a china marking wax lead pencil, can sketch in the area of "spasm." The markings can be erased and the charts used over and over again. They are effective tools in this type of case.

Clay-Adams, mentioned earlier, publishes the Schick Notebook Anatomical Charts in color. These are 8-1/2" by 11", pre-punched for ring binder.

One of the most educational and worthwhile publications is *The Wonderful Human Machine*, published by the American Medical Association, Chicago, Illinois (cost $1.00). Anatomical drawings in this booklet can be duplicated on any photocopying machine.

Human Anatomy 1, 2, and 3 are especially worthwhile plastic

13 Personally, I deplore the courtroom use of the word "whiplash." It is not technically an anatomical term and it has been criticized widely by the medical profession and the defense bar. I prefer to use the phrase "necklash" or "cervical spinal sprain or strain."
reference charts showing the complete muscular and skeletal systems with names and locations, the circulatory and nervous systems and the internal organs. These are sold for 79 cents each at most book stores, or can be secured from Data-Guide Incorporated, 40-07 149th Place, Flushing, New York. These charts can be useful not only in the courtroom but also for study outside of the courtroom in the trial preparation.

An extremely valuable and useful exhibit is the Anatomical Chart of the Adult Human Skeleton, published through the courtesy of Eastman Kodak Co., Rochester 4, New York, and distributed with Volume 2 of American Jurisprudence, Proof of Facts, and also with Volumes 6 and 7 of Handling Accident Cases.

Research is required in the various jurisdictions for authorities supporting the use of medical charts and anatomical drawings.

In *Dictz v. Aronson*, the trial court, over defendant's objections in a malpractice case, permitted the introduction in evidence of a page from *Gray's Anatomy* showing the representation of the inside of a mouth. On appeal, the Appellate Division said it was, “of the opinion that the court erred in refusing to permit the jury to examine the infant plaintiff's throat to determine the results of the operation by comparison with the diagram, in evidence, of a concededly normal throat.”

In *Cavallaro v. Welch*, the court said:

In connection with the testimony of the plaintiff's physician, a chart picturing the human skeleton and nervous system was admitted in evidence over the objection of the defendants. Before its admission, the doctor had testified that it would help the jury in understanding his testimony. Under such circumstances, it was within the discretion of the Court to admit such a chart. . . . There was no abuse of that discretion in the present case.

**Medical Illustrations**

Lawyers seem to be generally unaware of the graphic method of utilizing the art of medical illustrators. There are a great number of qualified medical illustrators in all sections of our

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15 Id. at 748, 279 N.Y.S. at 67.
16 138 Conn. 334, 84 A.2d 279 (1951).
17 Id. at 334, 84 A.2d at 280 (1951).
nation. They are especially trained in anatomy and can prepare rough drawings in the form of tracings from X-rays. From such rough drawings, the medical illustrators prepare life-size, three dimensional, full color illustrations which are medically correct and are especially recommended for courtroom use.

These illustrations are generally mounted on cardboard 21" by 25" in size and are plainly visible in the courtroom at a minimal distance of 25 feet.

The cost of such pictorial illustrative work is less expensive than would generally be believed. Some of the medical illustrators used by our office have charged $50 to $100 for such services. The Association of Medical Illustrators, through its corresponding secretary, Miss Rose M. Reynolds, University of Nebraska, College of Medicine, Omaha 5, Nebraska, can supply the interested attorney with a register of the active members of the organization in the various localities requested.

The use of medical illustrations is unlimited in scope. Unfortunately, this technique, so useful and worthwhile, is unknown to many of the trial lawyers in the country. Alert trial lawyers have been using medical illustrators and their illustrations, routinely with striking results. Greater use should be made of this modern courtroom technique.

**Courtroom use of Transparencies or Overlays**

With a proper foundation (as set forth hereinafter in discussing the subject of anatomical drawings, charts, etc.), it is possible, in some of our jurisdictions, to introduce in evidence the highly dramatic transparencies or overlays of the human body. These are fully colored plates printed on clear plastic in colors approximating those of the living body, except for the blood and lymphatic vessels. They illustrate the human body on successive plates from skin through viscera to skin. One of these transparency sets is entitled "The Human" and is published by Row, Peterson & Company, of Evanston, Illinois (cost $3.20). It has, with proper foundation, been used in the courtroom to illustrate injuries.

Volume I of the *Encyclopedia Britannica* has a very vivid set of 14 plates on the human anatomy, in cross-section and in natural colored drawings, showing the front and back of each
part, in perspective, and of every principal muscle, organ and bone of the male and female anatomy.

Familiarity with transparencies or overlays is important to the trial lawyer for another valid and worthwhile reason. It permits a ready understanding of the human body by visual aids and helps the trial attorney in properly presenting a major personal injury case realistically to a jury.

**Skeletons and Anatomical Models**

Clay-Adams also distributes model skeletons, skulls and various other parts of the anatomy, including the vertebral column and plastic reproductions of the pelvis, herniated disc, etc.

Parts of the anatomy are also procurable in plastic reproductions from the Medical Plastic Laboratory, Gatesville, Texas.

In an important personal injury case, the use of such skeletons or anatomical models to demonstrate vividly the injuries involved is worthwhile and effective.

The propriety of using a model or a skeleton of the human body or a part thereof, is annotated in 58 American Law Reports Second 689 (1958), based upon the Illinois case of Smith v. Ohio Oil Company, where the court said:

... [T]he model was not used at all during the physician's testimony as to injuries he found, operations performed, methods of treatment, etc. Not until he proceeded to describe the present condition of the plaintiff was the model exhibited. This involved the pelvic area, which is probably the part of the body most difficult for the average person to visualize.

In reply to questions by the court, the witness stated the model would assist his explanation, and that it was an excellent reproduction of a normal human skeleton. Permission was given to use the model. Witness then pointed to the displacement of bones of the pelvis in a recent X-ray of plaintiff, and pointed to the model to illustrate normal alignment. The witness also explained the muscular arrangement and how the weight of the upper torso is transmitted to the lower extremities. He pointed out where excess strain would occur because of damaged ligaments and bone displacement, and how this would affect the ability to balance, or to stoop over.
This was important as an explanation of the doctor's statement that a built-up shoe would not remedy the condition.

From consideration of the testimony of the witness, this court concludes that the explanation was relevant, legitimate and helpful, and contained nothing emotional or dramatic in character. The rulings of the court thereon were correct. (Emphasis added)\(^\text{18}\)

It should be noted that in the *Smith* case a proper foundation for the use of a skeleton in propounding questions to the doctor was laid and that the doctor testified that the model was *anatomically correct*.

Other sources for the acquisition of skeletons and anatomical models are the following: Denoyer-Geppert Company, *supra*; Aetna Distributors, 4600 W. Belle Plaine Avenue, Chicago 41, Illinois; The Somso Anatomical Models, made in West Germany, of over 400 different parts of the anatomy, currently being distributed by Markham Publishing Corporation, 66 Summer Street, Stamford, Connecticut.

Cadaver bones of the entire anatomy may be utilized frequently, especially in cases where herniation of the intervertebral discs or fractures of the head of the femur are involved. Experience dictates, however, that female jurors especially will find cadaver bones grisly. This revulsion can be eliminated by using a plastic reproduction and making the jurors aware of this fact.

One of the most useful models of the human skeleton is that prepared by Leon Schlossberg and distributed through the Johns Hopkins Press, Baltimore 18, Maryland. It is an articulating, functional model, 18" high, on a standard, with diagramatic drawings of the locations of the principal bones of the body.

A unique service is supplied by Medical Plastics Laboratory, which we have previously mentioned. This organization will supply attorneys with a specially tailored, three dimensional plastic model, illustrating fractures before surgical repair, by utilizing lateral and interior-posterior X-ray negatives of the fracture with the radiologist's report being supplied. From this material, the Medical Plastics Laboratory will prepare an exact model of the fractured portion of the body, and, by another model, also show

the repair, particularly in cases where surgical hardware is utilized. This is an extremely worthwhile and authentic reproduction method and is recommended for courtroom adaptation and use.\(^{10}\)

Every schoolboy knows that the human heart has four chambers, and several valves, the latter of which can now be replaced by man-made devices in Houston and several other medical centers. And most everyone is aware that the blood is returned to the heart by the veins, and from there it goes to the lungs for renewal of its oxygen supply, to be returned to the heart for pumping to other parts of the body via the arteries. But if one is in need of a little more detailed knowledge of cardiac circulation, he is usually obliged to refer to a medical illustration, “simplified” for laymen, but confused by a number of arrows going every which way which would require Gray, himself, to interpret.

A current text aimed at the legal profession by physicians of rare endowment has a description of the circulatory system which would require a cryptographer to unravel. To top it off, the piece is illustrated by a line drawing in which names given the anatomical parts are different from those used in the text, and several items are noted on the drawing to which no reference at all is made in the text. This same text apparently changed authors midway in the cardiovascular section, for, a few pages on, there is a reversion to the alternate anatomical terms. In another text, a line drawing of the heart, probably anatomically correct in the geometric plane illustrated, shows only three chambers, a fact which can only serve to disconcert.

Every once in a while someone comes up with a chart, or an anatomical drawing, or a model, which is really worthwhile to the trial lawyer, both for self-instruction and courtroom use. Lately, more specifically after the surge of material produced in the last decade for use as “demonstrative evidence” which many attorneys in the more conservative jurisdictions found impossible to get into evidence, these items have been rather few and far between. Recently, however, a pharmaceutical house has produced one designed for use as an instructional aid for the physician, a life-sized model of the heart complete with diagrams

\(^{10}\) For authorities on use of demonstrative evidence see Annot., 83 A.L.R.2d 1097 (1962), [Propriety, in trial of criminal case, of the use of skeleton or model of human body or part].
and a “teacher’s manual.” Made of plastic, this is one of the best. You can open it up, learn what makes it tick, and put it back together again. Everything is right there with chambers and vessels in clearly distinguishable colors, so that the basics of cardiac circulation can be understood in a matter of a few minutes. This valuable adjunct to any attorney’s medical library may be obtained for four dollars and forty cents ($4.40) by addressing Heart Model; Merck, Sharp & Dohme; Rahway, New Jersey 17065.

**Medical Photography in the Courtroom**

It has been truly said that, “One picture is worth a thousand words.” Thus, courtrooms all over the country are seeing wider and more extensive use of medical photography. This includes the entire spectrum of medical photographic techniques of which there are presently, at least, forty-four separate and distinct types. Colored motion pictures, 3-D photography with Kodaslide stereo viewers, and gait abnormality motion pictures are being offered in evidence.

Pictures taken routinely at hospitals which maintain medical photography departments are generally graphic, dramatic and authentic, and serve as excellent media of demonstrative evidence. In teaching hospitals, especially, orthopedic surgeons, plastic surgeons, and other specialists attached to the staffs, are requisitioning extensive medical photographic coverage of their traumatic cases. Inquiry at the medical photography department of such hospitals often will reveal extremely useful medical photography evidence.

The use of medical photography is especially recommended through the media of black and white glossy prints, as well as colored slides. Many of the medical photography departments in hospitals routinely supply the attorney, familiar with such facilities, with complete medical coverage of trauma cases which are part and parcel of the hospital record of the patient, but separate and distinct from the records maintained on the patient by the record room librarian. This fact is especially overlooked by most trial attorneys when they issue a subpoena *duces tecum* to the medical records librarian for the hospital chart, record and X-rays.
This will generally not secure the delivery to the courtroom of the medical photographic file of the patient.

Motion pictures have been utilized to show the activities in a typical day of paralyzed patients. Such a procedure was utilized in a recent case brought against a manufacturer of polio vaccine. The motion pictures of the young male plaintiff, who was paralyzed from the neck down by live virus polio vaccination, ran 31 minutes and showed a complete day's care of the boy. It was admitted in evidence in lieu of taking the jury to the boy's home to show exactly the care and attention he required. In a recent malpractice case, motion picture films of the dramatic events in a delivery room were utilized as demonstrative evidence by the defense. There is no limit to the imagination of trial attorneys in the proper utilization of photographic evidence.

Most courts have ruled that the fact that the proffered photographic evidence may be gruesome is not a valid reason for keeping it from the jury.20

I frequently use 3-D colored photographs in cases involving scarring or burns, or depressed fractures of the skull. I use two Kodaslide Stereo-Viewers manufactured by Eastman Kodak Company. I feel that this is a more effective way of using 3-D colored pictures than by projecting the same upon a screen and supplying glasses for the jurors, the court and opposing counsel.

A superb set of slides is part of A Stereoscopic Atlas of Human Anatomy, by Dr. David L. Bassett, distributed by the Williams & Wilkins Company, Baltimore 2, Maryland. These slides cover the central nervous system, head and neck, upper and lower extremities, thorax, abdomen, pelvis and back. They can be demonstrated in a courtroom through the media of a Stereo-Matic 500 3-dimension projector on a 40″ by 40″ stereo projection screen or

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20 Annot., 159 A.L.R. 1413 (1945) [Admissibility of photograph of corpse in prosecution for homicide or civil action for causing death]. See illustrations of medical photography in each of the seven volumes of A. Averbach, Handling Accident Cases (1958), but especially Volume 2, Chapter 13, Use of Demonstrative Evidence and Volumes 6 and 7 of Handling Accident Cases, Courtroom Projection of Trauma, with full illustrations of each category of demonstrative evidence.

The use of medical photographers presents a new vista for demonstrative evidence in personal injury cases. Especially is this true when colored 3-D photographs are used in burn cases or to portray scars. There are about 1500 medical photographers in the country. Many of them are attached to the medical departments of some 350 of the large hospitals in the United States. See Averbach, Medical Photography as an Aid to Trial Lawyers, 26 N.Y.S. B. Bull. 378 (1954).
through lighted viewers. This set is extremely educational and useful for the trial lawyer.

**COURTROOM USE OF COLORED SLIDES**

Over 1000 medical slides of medical illustrations, 2" by 2" in size and mounted on cardboard, can be purchased individually or in complete sets at cost from Ciba Pharmaceutical Products, Incorporated, Summit, New Jersey, at a cost of sixty-five cents ($0.65) per slide, shipped postpaid. Write to the Publications Department of Ciba for a catalogue listing films and medical slides with code numbers for each slide.

We use these medical slides in the courtroom through a 35 mm. projector. They greatly help the jury to understand the significance of the injury involved. The slides are reproductions of the prints by the famous medical illustrator, Dr. Frank H. Netter, and are contained in the Ciba collection of medical illustrations. Volume 1 of this set covers the Nervous System including the supplement on the Hypothalamus; Volume 2, the Reproductive System; Volume 3, the Digestive System. The text and explanation in the bound volumes, which are also sold at cost by Ciba, are worthwhile and may be consulted before ordering the slides.

It is possible to prepare black and white slides for use in the courtroom via an opaque projector, through utilization of office machines distributed by the Minnesota Mining and Manufacturing Company. This can also be used in the courtroom by projecting the same upon a screen or wall.21

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21 In Slow Development Co. v. Colter, 88 Ariz. 122, 853 P.2d 890 (1960), the court said:

The doctor testified Exhibit O is an accurate reproduction of the X-rays taken of the plaintiff's injured area and there is no evidence tending to show otherwise; further, the doctor stated he could better illustrate his testimony to the jury by the use of the exhibit. The trial court admitted the colored, reproduced picture into evidence as it was relevant to the issue in dispute and served a useful purpose in assisting the doctor in describing the injuries of the plaintiff and as an appropriate aid to the jury in understanding and determining the facts. We see no error in allowing witnesses to use colored drawings where they accurately portray anything which is competent for such witness to describe in words or where they are helpful as an aid to a verbal description of objects and conditions provided they are relevant to some material issue and there is preliminary proof that it is a correct presentation of its subject . . . . We believe that the practice of admitting colored drawings such as involved in the instant case where a proper foundation has been made, is to be encouraged as an aid to the better understanding of the

(Continued on next page)
A frequently cited case has sanctioned demonstrative evidence consisting of the exhibition to the jury of a replica of a metal plate used by an orthopedic surgeon in reducing a fracture of the femur. A jury award of $65,650 for the plaintiff was affirmed. The orthopedist was permitted to testify in detail concerning some of the major operations performed upon the plaintiff within the period of twenty months. He was permitted, over objection, to describe the manner in which he affixed the metal plate, and was permitted to describe the use of screws, hammer and screwdriver. In affirming, the court said:

The disputed evidence was in part, to be sure, unalloyed realism but the injuries to the plaintiff in this case were generally of such gravity that by their very nature and even when less graphically described they would have been capable of shocking lay sensibilities. The plaintiff was warranted in proving his case by the clearest evidence, subject only to the duty of the presiding justice to prevent abuse. The case may be close but we are not satisfied of a demonstrated misuse of judicial discrimination. (Emphasis added).

It is recommended that whenever a fractured femur becomes necrotic and the head of the femur is replaced with an Austin-Moore prosthesis that a replica be secured and referred to in evidence. The same procedure can be followed in cases where intermedullary nails are used or where a McLaughlin or Blount plate and screws are used by the orthopedist. Such surgical hardware is obtainable from surgical appliance houses, such as: Powers Surgical Instrument Company, 227 West York Street, Norfolk, Virginia; Codman & Shurtleff, Incorporated, 130 Auckland Street, Boston, Massachusetts; or from the orthopedist in the case.

Trial lawyers generally seem to neglect the third dimension in trials of personal injury cases. Sight is often neglected while

(Footnote continued from preceding page)

facts by the jury and such graphic exhibits in most instances give the jury a clearer picture of the facts than can be obtained from the testimony of witnesses. (Emphasis added) Id. at–, 353 P.2d at 894-95.

22 McMann v. Reliable Furniture Co., 140 A.2d 736, 745 (Me. 1958); Annot., 83 A.L.R.2d 1271 (1962) [Admissibility in evidence of braces, crutches, or other prosthetic or orthopedic devices used by injured party].
sound is unduly emphasized. Demonstrative evidence has been described as the "surgery of the lawsuit." I prefer to refer to demonstrative evidence as the "anatomy of a trial." For lay jurors to understand adequately the impact of surgery, particularly in the orthopedic field or in the neurosurgical field, recourse must be made to the media of sight communication of the surgical means of repair. This means visually showing the jury the surgical hardware involved. Reliance on X-rays alone is not sufficient, and oral testimony by the orthopedist or neurosurgeon is grossly inadequate.

The proper foundation for the use of demonstrative evidence, properly depicting traumatic injuries, can be in the following form:

Q. Doctor, are you able to adequately describe, without the use of medical charts or illustrations, the injuries suffered by your patient, or the operative procedure performed upon him (where you have operative procedure)?

A. No.

Q. I show you a Dr. Michel medical chart marked Exhibit No. — for identification. Have I previously showed you this chart?

A. Yes.

Q. Is that chart anatomically correct?

A. Yes.

Q. Would the use of such a chart aid you in describing the injuries?

A. Yes.

The medical chart or illustration is then offered into evidence as an aid to a fuller understanding of the injuries involved. Research is required in the various jurisdictions for authorities supporting the use of medical charts, anatomical drawings, transparencies, surgical hardware, etc. There are many such authorities. Such demonstrative evidence, however, should be reserved
for use in major trauma cases, and not to illustrate trivial injuries. It is important, of course, that the doctor be prepared for these preliminary substantial questions by a discussion prior to trial.

USE OF DEMONSTRATIVE EVIDENCE

The general rule is that the object of all evidence is to enlighten and advise the trial court and jury as to material facts which are relevant as bearing on the issues in order that the truth may be elicited and a just determination of the controversy reached.23

It is not objectionable that the evidence go beyond oral testimony and it may be addressed to the senses, provided that it is kept within reasonable limits by the exercise of judicial discretion. It should be of a nature to help the jurors to understand a situation or an act, or to comprehend objective symptoms resulting from an injury. In other words, when a fact at issue in a lawsuit may be explained by the production of demonstrative evidence, it is usually considered proper to bring it into court and exhibit it to the jury.24 It is on this theory that skeletons, models of body parts, diagrams, models, X-rays, hospital records, photographs, slides, and hundreds of other articles are now regularly employed in personal injury lawsuits by plaintiffs and defendants alike, fully sanctioned by the appellate courts.

The injured plaintiff in the courtroom is the simplest form of demonstrative evidence. That a person may appear and testify at his own trial, without regard to how revolting he may appear, how incapacitated he may be, or what difficulty he may have in communicating, has rarely been litigated. But in one widely cited case27 the plaintiff was permitted to appear before the jury on a stretcher "in a weak, sickened and stupefied condition," attended by a nurse and hospital attendant. The Court said:

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25 See Antel v. Poll, 100 Conn. 64, 123 A. 272 (1923).
26 Calder v. Levi, 168 Md. 260, 177 A. 392 (1935), in which, over a strong dissent, it was held error to deny to a plaintiff the right to describe the accident and her injuries although there was expert testimony that her mental condition was such that she would probably become hysterical on the stand.
27 Florida Greyhound Lines v. Jones, 60 So. 2d 396 (Fla. 1952).
One who institutes an action is entitled to be present when it is tried. That, we think should not be tempered by the physical condition of the litigant. It would be strange, indeed, to promulgate a rule that a person's right to appear at his own trial would depend on his personal attractiveness, or that he could be excluded from the courtroom if he happened to be unsightly from injuries which he was trying to prove the defendant negligently caused.... If the use of stretcher and attendants was affected there would be occasion for the court to regulate the appearance to prevent the opposite party from being victimized and the jury from being deceived by the subterfuge, but no such deceit is claimed to have been practiced in this trial. ...28

EXHIBITION OF PERSON

A plaintiff ordinarily has the right to exhibit his person as real, or demonstrative evidence. The fact that the injury may be gruesome, or the exhibition of it indecent, is not ordinarily sufficient to exclude it from evidence, but there is a decision to be made as to whether to offer it.29 In certain cases I have had I have been of the opinion that the sensibilities of jurors as to possible gruesomeness or indecency of an exhibition of the body might be less outraged if colored photographs of the injury were offered rather than the exhibition of the person. There is no harm in shocking a jury into an appreciation of the nature and extent of an injury, but if it can be done in a manner less offensive to some, I think it wise to do so. That such photographs are admissible into evidence is clear.30

Do not let such photographs be excluded merely because

28 Id. at 397.
29 In 6 Defense L.J. 161, 162 (1959), there is vividly described an exhibition of burns so horrible that most of the jurors found it impossible to look at the plaintiff. After an initial glance, the trial judge turned away and would not look back. One of the physicians in the case stated, "He looked like a walking zombie."
30 See, e.g., Breeding's Dania Drug Co. v. Runyon, 2 So. 2d 376 (Fla. 1941); Daugherty v. Erie R.R. Co. 169 A.2d 549 (Pa. 1961); West v. Morgan, 27 A.2d 46 (Pa. 1942); although in Allen v. Stokes, 260 App. Div. 600, 23 N.Y.S.2d 443 (1940), a wrongful death action, it was held error to receive a photograph of a dead boy lying in his coffin, for obvious reasons. In Udell v. Peterson, 133 N.W.2d 119 (Iowa 1965), colored photographs of an infant plaintiff who had been struck by an automobile were admissible to show that the child had been dragged, despite the fact that they were revolting and might arouse jury sympathy.
they are in color and more graphic. Life also is in color, not in black and white.

If your exhibits can conceivably be denominated as squeamish or grisly, offer the worst one first. I know of an instance where an attorney offered his most innocuous photograph first and saw it admitted into evidence, then saw his other exhibits shut out as cumulative.

As a general, but not inflexible, rule, I have asked a plaintiff to exhibit his body where the injury was to an extremity, except where a limb was amputated. There are few demonstrations, for example, which can equal the jolt produced when a sleeve is rolled back to exhibit a withered arm.

I have used photographs of injuries in the following cases: where a woman's breasts were shockingly mutilated in surgery (mammoplasty); where a breast was repulsively chewed by a dog bite; in most amputee cases; where hot liquids spilled on the lap produced frightful scars, even after split-skin grafting of the groin and genital organs; where the flesh was gouged from a woman's upper thigh leaving an ugly crater defect; where an abdomen was horribly scarred from surgery or burns, and in many other cases.

**Conclusion**

Proper preparation of a personal injury case, and proper presentation of the issues of damages, pain and suffering, and losses sustained, are absolutely essential to success as a trial lawyer. The use of some, or all, of the methods suggested should prove rewarding instrumentalities for the effective development of a personal injury case, as well as aids to successful advocacy in such cases.

"Demonstrative Evidence," which of course is equally available to plaintiffs' and defense lawyers, is an aid to clearly establishing facts in issue only when intelligently used in a proper manner and under proper circumstances. I am compelled to admit that demonstrative evidence has been misused by some, and has sometimes been used by novices in cases which never warranted its use.

The views herein expressed are my own personal observations,
many of which were tried and tested in the crucible of courtroom experiences. They are the thoughts of a plaintiff’s trial lawyer, but I think they have just as much validity for the practitioner on the defendant’s side of the table. They are offered as suggestions, and without any intent of pontificating upon the best method of trying a lawsuit or the best method of introducing evidence of the effects of devastating injuries upon the human body.

It is my firm conviction that it is a disservice to an important cause and an important client in a personal injury case with major injuries to fail to awaken, sustain and maintain the jury’s interest. Only by the judicious and proper use of visual demonstrative aids and evidence can a jury’s interest in the case be captured, held and utilized.