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1958

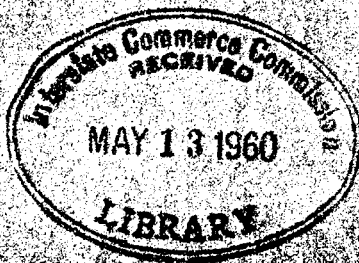
Wednesday morning session
address by Dr. Alton Ochsner

~~Page 80-87.~~ Title of address:
"Noxious Substances as a Causative
Factor in Carcinoma of the lung."

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Association of American Railroads

PROCEEDINGS
OF THE
THIRTY-EIGHTH ANNUAL MEETING
OF THE
MEDICAL AND SURGICAL SECTION



EDGEWATER PARK, MISSISSIPPI
MARCH 24-26, 1958

PROCEEDINGS
OF THE
THIRTY-EIGHTH ANNUAL MEETING
OF THE
Association of American Railroads
MEDICAL AND SURGICAL SECTION



HELD AT THE
EDGEWATER GULF HOTEL
EDGEWATER PARK, MISSISSIPPI
MARCH 24-26, 1958

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ASSOCIATION OF AMERICAN RAILROADS

(March, 1958)

Officers

Daniel P. Loomis, President.
Gregory S. Prince, Vice-President and General Counsel.
Walter J. Little, Vice-President.
William M. Moloney, General Solicitor.
R. G. May, Vice-President (Operations and Maintenance Department).
A. R. Seder, Vice President (Finance, Accounting, Taxation and Valuation Department).
W. M. Keller, Vice President (Research).
P. A. Hollar, Vice-President—Assistant to President.
J. Elmer Monroe, Vice-President and Director (Bureau of Railway Economics).
Robert S. Henry, Vice-President (Public Relations Department).
S. J. Strong, Secretary-Treasurer.
R. E. Keefer, Assistant Secretary-Treasurer.

Board of Directors

W. T. Farley, Chairman (ex-officio), Transportation Building, Washington 6, D. C.
R. L. Dearmont, President, Missouri Pacific Lines, St. Louis, Missouri.
Harry A. DeButts, President, Southern Railway System, Washington, D. C.
F. G. Gurley, Chairman of the Board and Chief Executive Officer, Atchison, Topeka & Santa Fe Railway, Chicago, Illinois.
Ben W. Heineman, Chairman, Chicago and North Western Railway, Chicago 6, Illinois.
Clark Hungerford, President, St. Louis-San Francisco Railway, St. Louis, Missouri.
D. B. Jenks, President, Chicago, Rock Island and Pacific Railroad, Chicago, Illinois.
W. A. Johnston, President, Illinois Central Railroad, Chicago, Illinois.
P. B. McGinnis, President, Boston and Maine Railroad, Boston 14, Massachusetts.
H. C. Murphy, President and Chairman, Executive Committee, Chicago, Burlington & Quincy Railroad, Chicago 6, Illinois.
A. E. Perlman, President, New York Central System, New York, New York.
W. Thomas Rice, President, Atlantic Coast Line Railroad, Wilmington, North Carolina.
D. J. Russell, President, Southern Pacific Company, San Francisco, California.
H. E. Simpson, President, Baltimore & Ohio Railroad, Baltimore, Maryland.
John W. Smith, President, Seaboard Air Line Railroad, Norfolk, Virginia.
A. E. Stoddard, President, Union Pacific Railroad, Omaha, Nebraska.
J. M. Symes, President, Pennsylvania Railroad, Philadelphia, Pennsylvania.
John E. Tilford, President, Louisville & Nashville Railroad, Louisville, Kentucky.
W. J. Tuohy, President, Chesapeake and Ohio Railway, Cleveland 1, Ohio.
H. W. Von Willer, President, Erie Railroad, Cleveland 15, Ohio.
L. L. White, Chairman of the Board, New York, Chicago & St. Louis Railroad, Cleveland 1, Ohio.

OPERATIONS AND MAINTENANCE DEPARTMENT

R. G. May, Vice-President

OPERATING-TRANSPORTATION DIVISION

W. C. Baker, Chairman
 E. M. Tolleson, Vice-Chairman
 A. I. Ciliske, Executive Vice-Chairman

**OFFICERS AND PERSONNEL OF COMMITTEES OF THE
MEDICAL AND SURGICAL SECTION FOR THE YEAR 1957-1958**

Dr. I. Goldowsky, Chairman
 Dr. M. B. Clayton, Vice-Chairman
 F. J. Parker, Secretary

Committee of Direction

Dr. I. Goldowsky, Chairman
 Dr. M. B. Clayton, Vice-Chairman

(Term expires in 1958)

- Dr. R. M. Graham, Director, Department of Medicine and Sanitation, The Pullman Company, 165 North Canal St., Chicago 6, Illinois.
 Dr. C. F. Holton, Chief Surgeon, Central of Georgia Railway, Savannah, Georgia.
 Dr. J. K. Stack, Chief Surgeon, Chicago & North Western Railway, 127 North Clinton Street, Chicago 6, Illinois.
 Dr. G. F. Cushman, Chief Surgeon, Western Pacific Railroad, 526 Mission Street, San Francisco, California.

(Term expires in 1959)

- Dr. M. B. Clayton, Chief Surgeon, Southern Railway System, 15th and K Streets, N. W., Washington, D. C.
 Dr. K. E. Dowd, Chief Medical Officer, Canadian National Railways, Montreal, Que., Canada.
 Dr. V. W. Hollo, Chief Surgeon, St. Louis-San Francisco Railway, St. Louis, Missouri.
 Dr. J. Huber Wagner, Chief Surgeon, Bessemer & Lake Erie Railroad, 525 William Penn Place, Pittsburgh, Pennsylvania.

(Term expires in 1960)

- Dr. R. J. Bennett, Chief Surgeon, Elgin, Joliet and Eastern Railway, 208 South LaSalle St., Chicago, Illinois.
 Dr. I. Goldowsky, Medical Director, Central Railroad Company of New Jersey, Jersey City, New Jersey.
 Dr. W. E. Mishler, Chief Surgeon, Erie Railroad, 608 Republic Building, Cleveland 15, Ohio.
 Dr. B. W. Stockwell, Chief Surgeon, Detroit and Toledo Shore Line Railroad, 3919 John R. Street, Detroit 1, Michigan.

Committee on Disability and Rehabilitation

- Dr. James K. Stack (Chairman), Chief Surgeon, Chicago & North Western Railway, 127 North Clinton Street, Chicago 6, Illinois.
 Dr. J. F. DePree, Chief Surgeon (Lines West), Chicago, Milwaukee, St. Paul & Pacific Railroad, 1656 Medical and Dental Bldg., Seattle 1, Washington.

Dr. S. M. English,
 B. & O. Centr
 Dr. J. W. Houk, M
 Terminal Tow
 Dr. R. S. Kieffer, C
 Missouri.
 Dr. Harvey Nelso
 Building, Min
 Dr. G. Earle Wig
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Dr. B. W. Stockwe
 Railroad, 700
 Dr. R. G. Carother
 Railway, Cinc
 Dr. Duncan Eve, C
 2001 Hayes St
 Dr. J. R. Gandy, C
 Texas.
 Dr. C. F. Holton,
 Georgia.
 Dr. Southgate Leig
 Box 1620, Ric
 Dr. W. E. Mishle
 Cleveland 15,

Committee on

Dr. W. J. Longewa
 way, 520 Metr
 Dr. J. J. Brandab
 Huntington, W
 Dr. B. I. Derauf,
 Minnesota.
 Dr. J. R. Knowle
 Massachusetts
 Dr. J. M. L. Jense
 Chicago, Illino
 Dr. R. S. Westline
 West 63rd Str
 (One Vacancy)

Committee

Dr. R. M. Graham
 tion, The Pull
 Dr. M. B. Clayton
 Streets, N.W.,
 Dr. K. E. Dowd,
 Montreal, Que.

Dr. E. C. Olson (C
 Stony Island A

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DEPARTMENT

DIVISION

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ATTENDANCE OF THE
THE YEAR 1957-1958

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& Lake Erie Railroad, 525
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and Eastern Railway, 208

Railroad Company of New
ad, 608 Republic Building,
Toledo Shore Line Railroad,

Rehabilitation

1, Chicago & North Western
, 6, Illinois.
icago, Milwaukee, St. Paul &
Bldg., Seattle 1, Washington.

- Dr. S. M. English, Medical and Surgical Director, Baltimore & Ohio Railroad, B. & O. Central Building, Room 217, Baltimore 1, Maryland.
Dr. J. W. Houk, Medical Director, New York, Chicago & St. Louis Railroad, Terminal Tower, Cleveland 1, Ohio.
Dr. R. S. Kieffer, Chief Surgeon, Missouri-Kansas-Texas Railroad, St. Louis 1, Missouri.
Dr. Harvey Nelson, Chief Surgeon, Soo Line Railroad, 1453 Medical Arts Building, Minneapolis 2, Minnesota.
Dr. G. Earle Wight, Chief of Medical Services, Canadian Pacific Railway, Windsor Station, Montreal, Que., Canada.

Committee on Trauma

- Dr. B. W. Stockwell (Chairman), Chief Surgeon, Detroit & Toledo Shore Line Railroad, 700 Doctors Building, 3919 John R. Street, Detroit, Michigan.
Dr. R. G. Carothers, Chief Surgeon, Cincinnati, New Orleans & Texas Pacific Railway, Cincinnati 2, Ohio.
Dr. Duncan Eve, Chief Surgeon, Nashville, Chattanooga & St. Louis Railway, 2001 Hayes Street, Nashville 4, Tennessee.
Dr. J. R. Gandy, Chief Surgeon, Texas & New Orleans Railroad, Houston 1, Texas.
Dr. C. F. Holton, Chief Surgeon, Central of Georgia Railway, Savannah, Georgia.
Dr. Southgate Leigh, Jr., Chief Surgeon, Seaboard Air Line Railroad, P. O. Box 1620, Richmond 13, Virginia.
Dr. W. E. Mishler, Chief Surgeon, Erie Railroad, 608 Republic Building, Cleveland 15, Ohio.

Committee on Developments Resulting from Physical Examinations

- Dr. W. J. Longeway (Chairman), Chief Surgeon, Colorado & Southern Railway, 520 Metropolitan Building, Denver, Colorado.
Dr. J. J. Brandabur, Chief Medical Examiner, Chesapeake & Ohio Railway, Huntington, West Virginia.
Dr. B. I. Derauf, Chief Surgeon, Northern Pacific Railway, St. Paul 1, Minnesota.
Dr. J. R. Knowles, Chief Surgeon, Boston & Maine Railroad, Boston, Massachusetts.
Dr. J. M. L. Jensen, Chief Surgeon, Chicago, Rock Island & Pacific Railroad, Chicago, Illinois.
Dr. R. S. Westline, Chief Surgeon, Chicago & Eastern Illinois Railroad, 334 West 63rd Street, Chicago, Illinois.
(One Vacancy)

Committee on Medical Aspects of Air Conditioning of Cars

- Dr. R. M. Graham (Chairman), Director, Department of Medicine and Sanitation, The Pullman Company, 165 North Canal Street, Chicago 6, Illinois.
Dr. M. B. Clayton, Chief Surgeon, Southern Railway System, 15th and K. Streets, N.W., Washington 13, D. C.
Dr. K. E. Dowd, Chief Medical Officer, Canadian National Railways, Montreal, Que., Canada.

Committee on First Aid

- Dr. E. C. Olson (Chairman), Chief Surgeon, Illinois Central Railroad, 5800 Stony Island Avenue, Chicago, Illinois.

Dr. V. W. Hollo, Chief Surgeon, St. Louis-San Francisco Railway, St. Louis, Missouri.

Medical Film Committee

- Dr. R. S. Kieffer (Chairman), Chief Surgeon, Missouri-Kansas-Texas Railroad, St. Louis 1, Missouri.
 Dr. G. W. Benjamin, Chief Medical Officer, Western Maryland Railway, Hillen Station, Baltimore 2, Maryland.
 Dr. G. F. Cushman, Chief Surgeon, Western Pacific Railroad, 526 Mission Street, San Francisco, California.
 Dr. A. Nygood, Chief Medical Examiner, Chicago & North Western Railway, 127 North Clinton Street, Chicago 6, Illinois.
 Dr. J. R. Winston, System Medical Director, Atchison, Topeka & Santa Fe Railway, 80 E. Jackson Boulevard, Chicago, Illinois.

Advisory Members from Committee of Direction

- Dr. R. J. Bennett, Chief Surgeon, Elgin, Joliet and Eastern Railway, 208 South LaSalle Street, Chicago, Illinois.
 Dr. R. M. Graham, Director, Department of Medicine and Sanitation, The Pullman Company, 165 North Canal Street, Chicago, Illinois.
 Dr. V. W. Hollo, Chief Surgeon, St. Louis-San Francisco Railway, St. Louis, Missouri.

Representatives of the Medical and Surgical Section on the Joint Committee on Railway Sanitation

- Dr. R. M. Graham (Chairman, Joint Committee on Railway Sanitation), Director, Department of Medicine and Sanitation, The Pullman Company, 165 North Canal Street, Chicago, Illinois.
 Dr. M. B. Clayton, Chief Surgeon, Southern Railway System, 15th and K. Streets, N.W., Washington 13, D. C.
 Dr. A. M. W. Hursh, Assistant Medical Director, Pennsylvania Railroad, 15 North 32nd Street, Philadelphia 4, Pennsylvania.

Representatives of the Medical and Surgical Section on the Special Medical-Legal Research Committee

- Dr. W. E. Mishler (Chairman), Chief Surgeon, Erie Railroad, 608 Republic Building, Cleveland 15, Ohio.
 Dr. R. J. Bennett, Chief Surgeon, Elgin, Joliet and Eastern Railway, 208 South LaSalle Street, Chicago, Illinois.
 Dr. I. Goldowsky, Medical Director, Central Railroad of New Jersey, Jersey City, New Jersey.
 Dr. Harvey Nelson, Chief Surgeon, Soo Line Railroad, 1453 Medical Arts Building, Minneapolis 2, Minnesota.

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ASSOCIATION OF AMERICAN RAILROADS

OPERATING—TRANSPORTATION DIVISION MEDICAL AND SURGICAL SECTION

RULES OF ORDER

1. **REPRESENTATION:** As provided in the Plan of Organization, the representation of Member Roads in the Medical and Surgical Section shall be Chief Surgeons or other persons engaged in a similar capacity. The Railway Express Agency, Inc., and the Pullman Company are eligible for membership in this Section.

2. **AFFILIATED MEMBERS:** A representative of an organization collaborating or cooperating with the Section may become an Affiliated Member thereof upon the approval of his application by the Committee of Direction. An Affiliated Member shall have the rights and privileges accorded a Member Road representative, except voting or the holding of office.

Officers and Committees

3. The officers of the Section shall consist of a Chairman, Vice-Chairman and Secretary.

(a) As provided in the Plan of Organization, the **CHAIRMAN** and **VICE-CHAIRMAN** shall be selected by the Committee of Direction from its membership. Their terms of office shall be one year. A Chairman will not succeed himself.

(b) The **SECRETARY** will be appointed by the General Committee of the Division. His salary shall be named by that Committee, subject to the approval of the Vice-President, Operations and Maintenance Department.

(c) The **COMMITTEE OF DIRECTION** will consist of twelve members, territorially representative as far as practicable—one each from New England and Canada; four from the East; two from the South and four from the West—elected as hereinafter prescribed, each of whom shall serve for three years.

The terms of office of all elective members of the Committee of Direction shall expire at the conclusion of the Annual Meeting. Vacancies in the committee membership shall be filled by appointment of the Committee until the next election.

In addition to the above, the Surgeon-General of the United States Bureau of Public Health Service or a representative to be designated by him, and a representative to be designated by the Conference of State and Provincial Health Authorities of North America shall be honorary members of the Committee of Direction.

The Committee of Direction will select from its elective membership a Chairman and Vice-Chairman of the Section, whose terms of office shall be one year. A Chairman will not succeed himself.

(d) The Standing Committees of the Section will be as follows:

- Committee on Disability and Rehabilitation
- Committee on Trauma
- Committee on Developments Resulting from Physical Examinations
- Committee on Medical Aspects of Air Conditioning of Cars
- Committee on First Aid
- Medical Film Committee

The representation of Member Roads on these committees will be, so far as is practicable, territorially selected, in approximately the same proportions as that of the Committee of Direction, personnel to be named each year by the Committee of Direction immediately following adjournment of the Annual Meeting.

Duties of Officers

4. The **CHAIRMAN** shall have general supervision over the affairs of the Section and shall preside at meetings of the Section and at meetings of the Committee of Direction.

5. The **VICE-CHAIRMAN**, in the absence of the Chairman, shall perform the duties of the Chairman and such other duties as may be assigned.

6. (a) The **SECRETARY** shall perform the usual duties of that office and such other duties as may be assigned to him by the Chairman.

(b) He shall receive six weeks in advance of the Annual Meeting each year the report of the Committee on Nominations, as elsewhere provided for, and will submit to the membership at the Annual Meeting the nominations contained in that report, to fill the vacancies in the membership of the Committee of Direction. He shall announce the result of the election promptly to the members.

Duties of Committees

7. The **COMMITTEE OF DIRECTION** shall:

(a) Exercise general supervision over the interests and affairs of the Section.

(b) Be empowered to act on behalf of the Section in the interim between meetings and shall submit at each meeting a report covering its actions.

(c) Examine and decide what portion of communications, papers and reports shall be submitted at the meetings. It shall determine which, if any, of the subjects presented by the various committees, shall be referred to the General Committee of the Division.

(d) Appoint two months in advance of the Annual Meeting each year a Committee on Nominations, consisting of representatives of five Member Roads, who shall not be members of the Committee of Direction.

(e) Appoint additional committees as required.

(f) Submit to the Chairman, General Committee, detail of contemplated financial requirements for conducting the work of the Section as required or as called for by that official.

(g) Call Annual General Committee

(h) Call meeting to each member request, in writing

8. The **COMMITTEE** shall report to the Section at the end of each year, and place the four members of that year, and to

The duties of the

9. **COMMITTEE ON REHABILITATION** shall report on such subjects as the efficiency of railroad rehabilitation of function.

10. **COMMITTEE ON FIRST AID** and report on the (a) Diagnosis of first aid report forms, (d) 2

11. **COMMITTEE ON MEDICAL FILMS** shall report, with recommendations, the recommended forms used in

12. **COMMITTEE ON AIR CONDITIONING** in its relation to departments handling

13. **COMMITTEE ON NOMINATIONS** study and report on nominations for railroad matters involving

14. **COMMITTEE ON MEDICAL FILMS** concerned with the medical films for

15. **VOTING** viva voce, by roll call, entitled to one vote, presented shall be read otherwise ordered by the committee of Direction the ranking office at any meeting.

(g) Call Annual Meetings of the Section, subject to the approval of the General Committee of the Division, if in its judgment conditions warrant.

(h) Call meetings of the Section, upon not less than thirty days' notice to each member. It must call special meetings of the Section upon the request, in writing, of a majority of the Member Roads.

8. The **COMMITTEE ON NOMINATIONS**, appointed as above prescribed, shall report to the Secretary at least six weeks in advance of the Annual Meeting of each year, at least two nominations for each impending vacancy to replace the four members of the Committee of Direction whose terms expire that year, and to fill any vacancy.

The duties of the Standing Committees shall be as follows:

9. **COMMITTEE NO. 1—The COMMITTEE ON DISABILITY AND REHABILITATION** shall study and report, with suggestions or recommendations, on such subjects that have to do with the physical efficiency or inefficiency of railroad employees. It shall also consider ways and means for the rehabilitation of injured or incapacitated employees and the complete restoration of function.

10. **COMMITTEE NO. 2—The COMMITTEE ON TRAUMA** shall study and report on the treatment and transportation of fracture cases including (a) Diagnosis of fractures, (b) First aid and transportation splints, (c) Fracture report forms, (d) X-ray work in connection with fractures, and similar subjects.

11. **COMMITTEE NO. 3—The COMMITTEE ON DEVELOPMENTS RESULTING FROM PHYSICAL EXAMINATIONS** shall analyze and make report, with recommendations or suggestions, on data made available by periodic examinations, etc. It shall study and revise as conditions may warrant, the recommended standards covering physical examinations as well as the forms used in connection therewith.

12. **COMMITTEE NO. 4—The COMMITTEE ON MEDICAL ASPECTS OF AIR CONDITIONING OF CARS** shall study and report on this subject in its relation to the health and comfort of travelers, cooperating with other departments handling matters relating to air conditioning of equipment.

13. **COMMITTEE NO. 5—The COMMITTEE ON FIRST AID** shall study and report, with suggestions or recommendations, on first aid instructions for railroad employees, a standard first aid packet, etc., and such other matters involving first aid as relate to railroad operation.

14. **COMMITTEE NO. 6—The MEDICAL FILM COMMITTEE** shall be concerned with such study as required of matters relating to availability of medical films for railroad use.

15. **VOTING AT MEETINGS OF SECTION:** (a) Vote may be taken viva voce, by rising, by roll call or by ballot. Each Member Road shall be entitled to one vote. The vote of the majority of the Member Roads represented shall be required to decide any question, motion or resolution, unless otherwise ordered. (b) Voting for candidates for membership on the Committee of Direction shall be by ballot. (c) Unless otherwise designated by it, the ranking officer will be recognized as the Voting Representative of a road at any meeting.

16. **LETTER BALLOTS** may be taken upon any subject by order of the Committee of Direction and **must** be taken on all questions affecting physical property. The voting power of the Member Roads shall be proportionate to the ownership of miles of road.

17. **ORDER OF BUSINESS:** The order of business at meetings of the Section shall, unless otherwise directed by a majority of the members present, be as follows:

Approval of minutes of last meeting
 Reports of Standing Committees
 Reports of Special Committee
 Report of Tellers
 Unfinished Business
 New Business

18. Robert's Rules of Order shall govern the proceedings of this Section, including amendment to these Rules of Order.

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Atlanta & St. And
 Alton & Southern
 Bamberger Railroa
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 Bessemer & Lake I
 Birmingham South

Boston & Maine R.

Buffalo Creek Railv
 Canadian National
 Canadian Pacific R.

Central of Georgia
 Central Railroad of
 Chesapeake & Ohio

Chicago, Burlingtor
 road.....

Chicago, Milwaukee,
 Railroad.....

Chicago & North We
 Chicago, Rock Island
 road.....

Chicago, South Shor
 Railroad.....

Cotton Belt Railway.

ASSOCIATION OF AMERICAN RAILROADS

MEDICAL AND SURGICAL SECTION

Edgewater Gulf Hotel
Edgewater Park, Mississippi
March 24-26, 1958

The following were present:

Members	Representatives
Atchison, Topeka & Santa Fe Railway.....	Dr. J. R. Winston, Medical Director, System. Dr. G. Wendell Olson, Local Surgeon.
Atlanta & St. Andrews Bay Railway.....	Dr. John T. Ellis.
Alton & Southern Railroad.....	Dr. V. P. Siegel, Medical Director.
Bamberger Railroad.....	Dr. Spencer Wright, Surgeon, Director.
Bangor & Aroostook Railroad.....	Dr. J. H. Johnson, Chief Surgeon.
Bessemer & Lake Erie Railroad.....	Dr. J. H. Wagner, Chief Surgeon.
Birmingham Southern Railroad.....	Dr. C. L. Yelton, Chief, Orthopedic Surgery.
Boston & Maine Railroad.....	Dr. J. R. Knowles, Chief Medical Consultant.
Buffalo Creek Railway.....	Dr. W. E. Mishler, Chief Surgeon.
Canadian National Railways.....	Dr. K. E. Dowd, Chief Medical Officer.
Canadian Pacific Railway.....	Dr. G. Earle Wight, Chief of Medical Services.
Central of Georgia Railway.....	Dr. C. F. Holton, Chief Surgeon.
Central Railroad of New Jersey.....	Dr. I. Goldowsky, Medical Director.
Chesapeake & Ohio Railway.....	Mr. J. J. Smole, Special Representative.
Chicago, Burlington & Quincy Railroad.....	Dr. R. B. Kepner, Chief Medical Officer.
Chicago, Milwaukee, St. Paul & Pacific Railroad.....	Dr. R. Householder, Chief Surgeon, (Lines East).
Chicago & North Western Railway.....	Dr. J. K. Stack, Chief Surgeon.
Chicago, Rock Island & Pacific Railroad.....	Dr. J. M. L. Jensen, Chief Surgeon.
Chicago, South Shore & South Bend Railroad.....	Mr. J. M. Seabright, Claims Attorney.
Cotton Belt Railway.....	Dr. William Hibbitts, Chief Surgeon.

Members	Representatives
Delaware, Lackawanna & Western Railroad.....	Dr. J. O. MacLean, Chief Surgeon.
Detroit Terminal Railroad.....	Dr. B. W. Stockwell, Chief Surgeon.
Detroit & Toledo Shore Line Railroad.....	Dr. B. W. Stockwell, Chief Surgeon.
Elgin, Joliet & Eastern Railway.....	Dr. R. J. Bennett, Chief Surgeon. Col. V. S. Adkins, General Claims Agent. Mr. H. L. Hackbert, Attorney at Law.
Erie Railroad.....	Dr. W. E. Mishler, Chief Surgeon.
Grand Trunk Western Railway.....	Dr. K. E. Dowd, Chief Medical Officer. Dr. B. W. Stockwell, Chief Surgeon.
Illinois Central Railroad.....	Dr. E. C. Olson, Chief Surgeon.
Illinois Terminal Railroad.....	Dr. J. A. Lembeck, Medical Assistant to President.
Kansas City Terminal Railway.....	Dr. G. Owens, Chief Surgeon.
Lehigh Valley Railroad.....	Dr. J. S. Niles, Jr., Chief Surgeon.
Louisville & Nashville Railroad.....	Dr. Duncan Eve, Chief Surgeon.
Missouri-Kansas-Texas Lines.....	Dr. R. S. Kieffer, Chief Surgeon.
Missouri Pacific Railroad.....	Dr. J. A. Lembeck, Medical Assistant to President.
Monon Railroad.....	Dr. E. T. Stahl, Chief Surgeon.
New York Central System.....	Dr. R. A. Johnson, Medical Director.
Norfolk & Western Railroad.....	Dr. M. P. Moore, Medical Director.
Northern Pacific Railway.....	Dr. B. I. Derauf, Chief Surgeon.
Pullman Company.....	Dr. R. M. Graham, Director, Medicine and Sanitation.
Seaboard Air Line Railroad.....	Dr. Southgate Leigh, Jr., Chief Surgeon.
Soo Line Railroad.....	Dr. Harvey Nelson, Chief Surgeon.
Southern Pacific Company.....	Dr. V. M. Strange, Chief Surgeon.
Southern Railway.....	Dr. M. B. Clayton, Chief Surgeon.
St. Louis-San Francisco Railway.....	Dr. V. W. Hollo, Chief Surgeon.
Terminal Railroad Association of St. Louis.....	Dr. J. A. Lembeck, Medical Assistant to President.
Union Pacific Railroad.....	Dr. W. Bale, District Surgeon. Dr. J. O. Clanin. Dr. E. M. Pettis. Dr. R. O. Porter, Surgeon. Dr. Spencer Wright, Consultant.
Western Pacific Railroad.....	Dr. G. F. Cushman, Chief Surgeon.
Winston-Salem Southbound Railway.....	Dr. L. Shaffner, Chief Surgeon.

Associatio

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Also Present

Members

Representatives

Association of American Railroads.....	Mr. K. A. Carney, Executive Vice-Chairman, General Claims Division, Director, Claims Research Bureau.
	Mr. F. J. Parker, Secretary, Medical and Surgical Section.
	Mr. R. L. Rose, Assistant to Secretary.
	Mr. Bruce Smith, Secretary and Assistant Director, General Claims Division.
Baylor Medical College.....	Dr. E. Stanley Crawford, Assistant Professor of Surgery.
Central of Georgia Railway Hospital.....	Dr. J. K. Quattlebaum.
Railroad Retirement Board.....	Mr. E. E. Koch, Assistant Director of Unemployment and Sickness Insurance.

WEDNESDAY MORNING SESSION

March 26, 1958

The Wednesday Morning Session of the Thirty-Eighth Annual Meeting, Medical and Surgical Section, Association of American Railroads, convened in the Edgewater Gulf Hotel, Edgewater Park, Mississippi, at nine o'clock, A.M., Dr. I. Goldowsky, Chairman, presiding.

DR. I. GOLDOWSKY: Gentlemen, I am going to get on with the meeting because we have some additional content to our meeting this morning that is not marked in your program.

We have with us the men from the Railroad Retirement Board who are going to give us a talk later: To Keep Experience at Work which has to do with the present stabilization of employment.

So, if you will bear with us and bear with them, we will go on with the program.

Now, at this time it gives me a great deal of pleasure to kick myself out of office, and I want to induct our new Chairman into the office the first thing this morning. Will Dr. Bennett and Dr. Olson escort Dr. Stockwell up to the front. (Applause)

DR. B. W. STOCKWELL: Thank you, gentlemen.

DR. I. GOLDOWSKY: Dr. Ben, it is a pleasure for me to turn over this gavel to you to start to break you into the headaches of this job.

There are not too many headaches because I am sure that you will have the same co-operation that I have had the past year of every member of the Section and all your Committee Chairmen.

So, without making any more speeches, the job is yours.

DR. B. W. STOCKWELL: Thank you very much, Dr. Goldowsky, and members of the Medical and Surgical Section:

It is indeed an honor to be elected your Chairman, and I certainly do appreciate it.

I think, first, we should comment on the way that Dr. Goldowsky has handled things during the past year. He has been an excellent Chairman. He has done a lot of hard work, and he has accomplished many things. He should definitely be complimented on the performance of a job well done. (Applause)

This year the Committee of Direction will meet for the first time sometime in the summer, and the various standing committees will be appointed at that time. The committees, as you are all aware, do the work of the Section. As soon as the appointments are made, we will try to get a news letter out to all of the members of the Section as to who they are and what to expect.

I think it would be well, if we can, to let you know during the year what is going on instead of having that knowledge chiefly in the minds of the members of the Committee of Direction only.

As I said, it is an honor and they tell me that there is some work connected with it. I certainly hope that I can do half as good a job as Dr. Goldowsky.

If any of you during the year have any questions concerning the operation of the Section or have any suggestions concerning our program for next year, we would welcome very much hearing from any of you at any time.

Thank you very much. (Applause)

Now, Dr. Goldowsky said that he was relinquishing his job. I don't quite agree with that. This is still the meeting that was arranged by our ex-Chairman. I think that it is only fitting that he continue on until we are through here at Edgewater Park this year.

So, Dr. Goldowsky, you didn't get out of the job. I will give you your gavel back for the rest of the day. (Applause)

DR. GOLDOWSKY: Our first committee report, and our most important committee this morning, is our Medical-Legal Research Committee; and our good Chairman, Dr. Mishler, Chief Surgeon, Erie Railroad, Cleveland, Ohio, will tell you a little about what has been going on the past year.

DR. W. E. MISHLER: The Medical-Legal Committee which was appointed during the past year is made up of Drs. R. J. Bennett, Chief Surgeon, E. J. & E. Ry.; Harvey Nelson, Chief Surgeon, Soo Line, and myself; also, Messrs. Ewing, General Claims, Atchison, Topeka & Santa Fe; W. H. Kelly, General Claims Attorney of the Chicago, Northwestern Railway; and R. R. Minor, General Claims Agent of Illinois Central.

Two meetings have been held. While the Committee did not have a specific aim or purpose when it was formed, it was intended to aid and assist, if possible, the solution of some of the problems affecting railroads that are common to both departments.

As our first project, it was felt that the Impartial Medical Plan as adopted at New York and Baltimore had merit. If possible, its adoption in other centers would be advantageous.

The principal characteristics of the New York plan for those who are unfamiliar with it are: (1) The fees of the impartial medical experts were originally paid by a foundation, but later on a showing of economies effected by the Plan, these fees were and are being paid by public funds; (2) The panel of Medical Experts were set up by local medical societies with a number of doctors appointed to the various specialties that were considered appropriate. A list of these experts were kept confidential and were selected in rotation and without prior knowledge of their identity by the court or counsel. Only senior experts were selected, and usually they were men who do not make a practice of testifying for either plaintiff or defendant; (3) Cases which were to be submitted to the impartial medical experts are determined by the trial judges on his own motion or at the suggestion of either party and usually at the time of the pre-trial hearing. The judge determines which specialty or specialties are required in the particular cases before him; (4) When a case is selected for expert handling, the clerk determines from a confidential list the expert next in order and the specialty required and makes all arrangements necessary for the examination by the doctor; (5) The expert in every instance is given a free hand to make a physical examination and make all laboratory tests and take all X-rays he feels necessary. He is also furnished with the reports of the doctors employed by the parties and results of laboratory tests, X-rays and hospital records, if any; (6) After examination, the expert witness makes his report to the court and copies are furnished to both parties; (7) At the trial the expert may be called by the court or either party, and his examination is conducted in the same manner as any other expert except that the party called is usually not considered bound by the testimony; and the impartial appointment of compensation expert is made clear to the jury.

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"Pursuant to the understanding we had at the last meeting of the Medical-Legal Committee, I have gone into the situation at Pittsburgh, Allegheny County, Pennsylvania, with a view of determining whether or not there would be sufficient interest in the institution of the Impartial Medical Testimony Plan following generally the one in New York.

"First of all, I have had a meeting of the heads of the claim departments of the various railroads operating in Pittsburgh, and found an overwhelming sentiment in favor of the plan.

"In addition, I also learned two outstanding orthopedic men, Drs. Kenig and Mazoni, had already started to get a resolution through the medical society for the adoption of such a plan.

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"At the suggestion of Mr. Peter G. Edward, I talked to Drs. Kenig and Mazoni and found they were under the impression it would be necessary to go to the legislature for relief for adoption of such a plan.

"We further understood the matter had not been progressed to any appreciable degree, would probably bog down unless some stimulation is provided.

"Dr. David Cass of the Century Building, Pittsburgh, Pennsylvania, is the current President of the Medical Society and general claims agent.

"The Allegheny Bar Association would, in our judgment, respond favorably to requests from the medical society to jointly sponsor such a plan.

"The current and incoming presidents are both members of a defense law firm, however, and might be suspect, but I believe there would be enough influence brought to bear for such a plan that we would probably have no real trouble with the Bar as a whole.

"I have not proceeded beyond this point as it now appears that Pittsburgh would provide a likely place to adopt the plan, and if handled in an intelligent manner, would likely be adopted.

"All those interviewed in this matter are pledged to secrecy as it was made known to them that any knowledge that we were interested in sponsoring such a plan would do more to defeat its acceptance than any other single factor.

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"If I can be of further service to you or your committee in this matter, I trust you will advise me of your wishes."

I have a communication here to Dr. Nelson by the law department of the Soo Line:

"Dear Dr. Nelson:

"Enclosed is a copy of the resolution adopted by the American Bar Association relative to the Impartial Testimony and also a letter from the Bar Association in response to a letter of mine inquiring about what activity had been undertaken to expedite the adoption of such a plan.

"After you read the same, return the same to me."

The resolution adopted by the American Bar Association is as follows:

"RESOLVED that the American Bar Association adopt a national program to be implemented at the local level for fostering the creation of panels of impartial medical experts under court aegis in the pre-trial consideration and trial of personal injury cases, especially in those communities where there is a volume of personal-injury litigation in the court and where there is sufficient number of qualified doctors available to constitute a panel; that the panel be selected by professional bodies on the basis of professional qualifications; that the panel be employed in the pre-trial and trial stage of such cases and that the copies of this resolution together with the attached report of the Section's Committee on Impartial Medical testimony dated August, 1956, be forwarded to all state and local bar associations represented in the House of Delegates with the recommendation that this program be adopted."

The Section on Publications and Services of the American Bar Association wrote to Mr. Beckman of the Soo Line as follows:

"This acknowledges your letter of March 5th with regard to the report of the Committee of Impartial Medical Testimony. This report contained a resolution on the subject which was presented as amended upon recommendation of the Board of Governors to the House of Delegates and adopted by the House.

"We enclose the attached," which I just read.

"You will note copies of resolutions together with the report of the committee before to all state, local bar associations represented in the House of Delegates with a recommendation that this program be adopted. This has been done.

"The State Bar Associations of the States you mentioned, Illinois, Wisconsin, Michigan, Minnesota and North Dakota were included. We were unable to tell you what committees of these associations were contacted; nor, are we able to tell you whether the Section of Judicial Administration has received word from any of these organizations. This office has not.

"We are sending a copy of this letter to Justice Clark of the Supreme Court, Washington, D. C., who is Chairman of the Section."

That handles Minnesota.

Shortly before this meeting, another member of this committee has contacted the federal judges of another district other than Minnesota or Pittsburgh on the merits of this plan, and it is anticipated that a meeting of them which is to be held shortly will be fruitful in the adoption of such a plan.

At the last Committee of Direction meeting—and this is changing the subject—the Pennsylvania Railroad proposed to the A.A.R. a study of the problem of the effects of diesel fuel in locomotive cabs and in shops. The subject has been referred to this committee, also. However, nothing has been done to date.

As I mentioned before of help, and I hope he we would get very far.

However, in conclusion I want to say that this is a useful and busy one.

Thank you. (Appl)

DR. I. GOLDOWSKY:

I just wanted to bring the Doctor was talking about money, there is an Imp works have been published the basic facts about the "Impartial Medical Testimony" in New York.

I gave you the basic information which could be changed, it is only improved.

Now, if you will bear with me, say a few words on this subject, he has told you, he has told you, he has told you.

Ken, would you want

MR. K. A. CARNEY:

I think it is a very good progress. I am tickled to hold of it.

It looks good to us right now.

DR. I. GOLDOWSKY:

Dr. Mishler is our Chairman.

Are there any of you gentlemen of interest locally, your committee is going to affect us nationally; Ben

We will put it in the program. Are there any other gentlemen?

Dr. Nelson.

DR. HARVEY NELSON:

I think we are going to have a meeting in which many are willing.

The thing that I would like to say more than half, a doctor, a better type of medical testimony.

I don't agree with Kerr's letter to our group. Minnesota has functioned going on that those of us are ashamed of.

I don't know if it has been decided what this plan consists of.

As I mentioned before, Mr. Carney has given this committee a great deal of help, and I hope he will continue to do so because without him I don't think we would get very far.

However, in conclusion, in spite of the fact we have only had two meetings, I want to say that this committee in my mind is going to be a very active, useful and busy one.

Thank you. (Applause)

DR. I. GOLDBOWSKY: Thank you, Dr. Mishler.

I just wanted to bring some of the men up to date. If they didn't know what Doctor was talking about when he talked about the Impartial Medical Testimony, there is an Impartial Medical Panel in the City of New York. The works have been published, and those that are interested in getting some of the basic facts about this, I would refer to the title of the book which is: "Impartial Medical Testimony," published by McMillan and Company, New York.

I gave you the basic book. I think it is well worth reading. I think there is much which could be changed in it which would be of benefit. Like everything new, it is only improved by aging.

Now, if you will bear with me, I am going to ask Ken Carney if he wants to say a few words on this. Ken has done all the leg work. As Dr. Mishler explained to you, he has been the engine and spark plug in this.

Ken, would you want to say anything on this?

MR. K. A. CARNEY: I don't think I have anything to add, Mr. Chairman.

I think it is a very vital committee. I think they are going to make real progress. I am tickled to death with the way all of the doctors have taken hold of it.

It looks good to us right now.

DR. I. GOLDBOWSKY: The legal group has named their own chairman; and Dr. Mishler is our Chairman from this Section.

Are there any of you gentlemen who have any problems you think not only of interest locally, your own road, or some neighboring road, that you know is going to affect us nationally that needs some research, give it to the Committee of Direction; Ben Stockwell your new Chairman; or to Frank Parker. We will put it in the proper hands.

Are there any other questions on this, or is there any other discussion?

Dr. Nelson.

DR. HARVEY NELSON: Dr. Mishler mentioned Kermit Johnson's letter. I think we are going to have to contend with a certain amount of complacency in which many are willing to accept our medical situation as it is.

The thing that I would like to urge is that this is at least half, and I would say more than half, a doctor's problem, a matter of cleaning house, of getting a better type of medical testimony.

I don't agree with Kermit Johnson at all on several points as I indicated in the letter to our group. This Medical Ethics Committee that we have in Minnesota has functioned but it hasn't had any teeth. Some things have been going on that those of us who are in the practice of medicine in Minnesota are ashamed of.

I don't know if it has been quite made clear to the group here just exactly what this plan consists of. The thinking is that the state societies or the local

societies will select panels in the various specialties. These panels are to be kept secret as far as the court is concerned. The Impartial Medical Testimony expert will be selected in rotation so the court will not have jurisdiction as to whom is going to be the one that is to be selected.

Obviously, with such a plan, we are going to have much better type of testimony. We are going to have men who are going to come in as neutrals and be willing to spend their time and effort in making an examination. And, a lot of our cases are going to be settled before they ever come to court.

I would like to quote four results of the New York Plan that Mr. Ewing has mentioned. The project has improved the process of obtaining medical facts in litigation cases. It has helped to relieve court congestion. I think it has been shown that many of the cases in the pre-trial period are settled because of a neutral medical opinion. It has had a wholesome prophylactic effect upon the presentation of medical testimony in court. The modest expenditure involved has effected a large saving in court costs by reducing the number of cases coming to trial. It has pointed the way to better diagnosis in the field of traumatic medicine.

Doctors with eminent qualifications who were unwilling to testify before, willingly served on the panel of Impartial Medical Experts.

We know that this plan can be put in effect. The attorneys themselves have recognized the problem by passing a ruling which apparently they are to a large extent ignoring.

We have a very enthusiastic committee, and we may be asking for some help from some of you in different localities. We feel, and I think I am correct in this, that the Federal courts even now have the power of appointing impartial medical experts. From there on it may get into the district courts.

I am not in favor of dropping the matter in Minnesota. I think we have the same problem there as we have everywhere else. I think merely because we have some of our plaintiffs' men on certain committees is not a reason for dropping this thing at all.

DR. I. GOLDOWSKY: Carter.

DR. WHITE: Union-Pacific.

Mr. Chairman: We had in Utah a number of years ago a plan that worked very well in helping to tone down some of this testimony that was coming from doctors, you know, adverse to facts and things that we think are not right.

Under the Medical Ethics Committee of the State Medical Association, they had a very aggressive group of doctors of about six who made it their practice to attend the court sessions when medical testimony was given in liability cases based on physical or mental problems. When the doctors that were giving this testimony saw this group of six prominent doctors from the state society sitting there in the front row of the court to hear them give their testimony, it had a very salutary effect, and the vicious type of testimony which had been the practice was practically eliminated.

Now, our committee wouldn't hesitate to travel throughout the state and attend these things where major trials were being held. They had people who were willing to give their time, and people who were members of the Association such as this and in other industrial practices as members of that committee. They just sat in the front row, and the doctor then going to give the testimony toned down very much what he might have to say.

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DR. I. GOLDOWSKY: Thank you very much.

I can tell you for sure this committee and Mr. Carney have studied fully, and as part of the program not only the New York Plan, but the Baltimore Plan, and also the Utah Plan, as each has its kinks, but we are throwing a pebble into the calm lake, and hoping the ripples spread.

I am going to just make two more announcements.

(Announcements.)

DR. I. GOLDOWSKY: Now, the next is not in the nature of any apology, but Dr. Clayton has gone. I imagine you all know that he was our Vice-Chairman last year. Maybe some of you have wondered why he has not been elected Chairman for this ensuing year.

He was nominated for the position, however, Dr. Clayton because of pressing things that he knows are coming up and feeling he would not have the time for about five or six months felt that it was his duty and it was his desire to withdraw his name from nomination as Chairman. As such, the Committee of Direction had to look around for a new Chairman, and Dr. Stockwell was chosen.

Now, for our next part of the program, it gives me a great deal of pleasure to introduce a world-famed physician, I should say surgeon.

MR. FRANK PARKER: I don't think Dr. Ochsner is here yet.

DR. GOLDOWSKY: Is Dr. Crawford here? Dr. Crawford, are you ready to go on?

While waiting for Dr. Ochsner, I am going to proceed with the program.

We have an address of "The Use of Replacement Grafts in Arterial Diseases and Traumatic Lesions," by Dr. Stanley Crawford, Assistant Professor of Surgery, Baylor University, Houston, Texas.

Dr. Crawford. (Applause)

DR. STANLEY CRAWFORD: Mr. President, Ladies and Gentlemen:

First I would like to thank you very much for the opportunity to come to this nice area for some vacation. I gather that I am not alone in that feeling because it seems to me there are some mighty good golfers in this group.

Unfortunately, my talk is made up around slides, and Dr. Ochsner had a different type of slides. They are going to have to change the projectors.

You know the disease arteriosclerosis for many years has been considered to be a diffused disease. And, with this concept, it was impossible to do anything about it, but recently it has been realized that it is a localized disease, and consequent to this, newer techniques of surgery have made it possible to approach these lesions directly.

One of the common lesions that is produced by arteriosclerosis is aneurysm. It is, perhaps, one of the oldest known lesions in medicine. It is often a challenge to physicians and has been for a good many years.

With the developments in Boston of about ten or eleven years ago, Dr. Huffnagel and Dr. Gross, in redoing some of the work that Dr. Correl did in the dog many years ago, were able to show that materials or tissues from one person could be taken, prepared, sterilized and put into another in replacing segments of the vascular system.

Coarctation of the aorta when the gap produced by this lesion was so long that an end-to-end anastomosis could not be performed, led to the development of these techniques that are being presented here today.

Many other surgeons have contributed to this field, and, of course, we are grateful to them. And, many, many physicians have referred us patients that have given us a great deal of experience, and, of course, we are extremely grateful to those people.

There are a number of locations in the vascular system in which aneurysms occur: the thoracic aorta, the abdominal aorta, the femoral artery and in the popliteal artery. As you know, the complications that these lesions produce are very serious. Perhaps the most common one is rupture, and, of course, along with that death.

Fortunately, the patients live for several days after the lesion begins to rupture or after the first rupture takes place, either located behind the pleura or behind the peritoneum or in the groin or behind the knee, there is enough tissue surrounding these lesions to tamponade the first hemorrhage that comes about. At this time, even after rupture occurs, before final exsanguination takes place, the opportunity is available in most instances to excise these lesions and replace them with a graft.

We read in the newspaper about very famous people very recently dying of these diseases, and, as you will also recall from reading your newspapers, they did live for a number of days before they did finally die.

If I may have the first slide, please, in the thorax several problems are posed by the application of excision and graft to the lesions. We have to maintain circulation during the operation.

This is an X-ray of a patient in whom a routine chest X-ray showed an enlargement in the mediastinum and by special X-ray techniques and injecting radiopaque substance into the arm vein and catching it in the aorta, we can demonstrate this aneurysm here. It also demonstrates another thing, and that is it is clotted. An aneurysm is not just a big empty sac or a big sac filled with liquid blood; it clots, laminated clot occurs in the aneurysm. The liquid part is just the size that a normal aorta would be. Of course, the wiring operations are not too good. It was intended to produce a clot, but, actually, they already had a clot.

You can see this one extends throughout the descending aorta from the origin of the subclavian artery to the diaphragm.

Now, excising this aneurysm, one would have to maintain circulation beyond the aneurysm while one is excising this in order to maintain circulation of the vital organs beyond the clamp, the spinal cord, the kidneys and so forth.

Next slide. Again, if the aneurysm is in the arch of the aorta, say it is here (indicating) in the transverse segment of the arch of the aorta, the main branches, as you see, going to the brain are involved. So, not only would we have to maintain circulation beyond to nourish the spinal cord and the kidneys and so forth, but we would have to supply blood to the innominate and carotid arteries here in order to nourish the brain in the operation. The brain can't do without blood but for about four or five minutes without some difficulties occurring.

But in this situation here (indicating), the aorta is normal both proximal and distal. There is enough aorta that is of normal size between the heart and the aneurysm that a shunt can be sutured on as you see diagrammed here.

With such a shunt in place, delivering blood beyond the aneurysm to the descending aorta and the vessels of the head, then clamps can be safely applied here, aneurysm removed, and the graft put back in its place.

Next slide.

Now, in other situations, in other aneurysms, this situation does not prevail. This slide is reversed, but in this situation here, there is not enough normal

and, of course, we are referred us patients that arise, we are extremely

in which aneurysms normal artery and in the these lesions produce rupture, and, of course,

or the lesion begins to ated behind the pleura knee, there is enough hemorrhage that comes the final exsanguination tances to excise these

very recently dying of your newspapers, they ie.

ral problems are posed We have to maintain

t X-ray showed an en- chniques and injecting it in the aorta, we can es another thing, and y sac or a big sac filled aneurysm. The liquid urse, the wiring opera- lot, but, actually, they

ending aorta from the

aintain circulation be- o maintain circulation e kidneys and so forth. he aorta, say it is here f the aorta, the main So, not only would we d cord and the kidneys nnominate and carotid on. The brain can't do thout some difficulties

normal both proximal size between the heart i see diagrammed here. l the aneurysm to the s can be safely applied place.

ation does not prevail. is not enough normal

aorta between the heart and the aneurysm to put on a by-pass shunt as previously diagrammed. In this case here we have to use the artificial heart-lung preparation. The blood is removed from the superior-inferior vena cava. It is unoxygenated blood returning to the heart. It is put into this pump by-pass oxygenator. Some of the blood is pumped back to the femoral artery to the body distal to this clamp and then through another tube into the innominate and carotid artery to supply oxygenated blood to the brain.

With that set up in operation, then one can safely clamp the aneurysm this distance to the heart and branches coming off of it. It can be excised and a graft re-inserted.

Next slide. This is an example of the descending thoracic aneurysm which has been excised and replaced by homograft.

This is the subclavian artery here. This is the descending thoracic aorta. And this is a homograft in place following the excision of a rather large aneurysm of the descending thoracic aorta.

Next slide. Now, one of the most common sites of origin of an aneurysm in the aorta is the abdominal aorta or where the patients complain of abdominal pain or pulsating mass in the abdomen. With the late publicity regarding aneurysms, the most common complaint our patients have is they can feel their heart beating in their abdomen. They, themselves, do spot it, a pulsating mass in the abdomen, or else they have pain in the stomach when they lie on the abdomen and have found it; or they have pain, and their doctor has found it, or their doctor finds it on routine examination.

To confirm the diagnosis (I don't know whether you can see it or not), we frequently see by an ordinary flat film of the abdomen a soft tissue mass in the retroperitoneal area here (indicating). As you can see here, there is a little rim of calcium; maybe the next slide will show it better. Then you can see here the lateral. This is a lateral film of the abdomen. You can see a little calcified rim on this mass, retroperitoneal mass here (indicating).

This is the abdominal aneurysm when it has been removed. You can see it corresponds quite nicely to this calcified ring in the region of the abdominal aorta.

Next slide.

This is an example of an abdominal and aortic aneurysm exposed at operation. This is a photograph taken at operation. It emphasizes one of the pathologic characteristics of this lesion.

Above the aneurysm, the aorta is reasonably normal. There is a normal segment of aorta between the renal arteries and the aneurysm, making it quite a simple affair to control hemorrhage by applying clamps both proximally and distally to the aneurysm for which it can be excised and replaced by a homograft or some plastic material.

This is, indeed, a fortunate situation, that is, in most instances the major channels in the abdomen are not involved. Occasionally they are. We have had twenty-six patients in whom the renal and superior mesenteric and colliac have been involved, but again because of the concentration of experience the patients who have been exposed elsewhere, in many instances, and sent down.

By and large, this is the setup, and occasionally they do involve the big vessels. Even so, they can be excised and replaced.

If a patient has one of these lesions here and has symptoms from it, we know enough about the condition now to be able to make certain predictions. Once the diagnosis is made and the patient has symptoms from his abdominal aortic aneurysm, we know that he will be dead within six to eighteen months, somewhere along in there. Exactly when, it is just hard to predict. It might be

the next day, twenty four hours later, three months later, it is just hard to predict. We have had some patients drop dead in the air plane station on their way to Houston or coming up from the admitting office or down in X-ray.

It is a highly unpredictable lesion except in a general way; so that once symptoms occur, they are dead within six to eighteen months.

Next slide.

As indicated, they can be excised easily and replaced by a suitable replacement. It is in contrast to the bad prognosis the patients are now being treated almost routinely at home, and the operating mortality is less than four per cent. If they are sixty-five years or younger and do not have heart disease, we have done consecutive series, sometimes a hundred and twenty without a death. If they have heart disease, of course, the mortality goes up considerably, and it is fifteen per cent. If they have ruptured already, that is about thirty per cent of those die. A third of our entire mortality has been in the ruptured group, but this condition previously had led to death in all cases. Being able to get two-thirds of those patients through operation to be discharged reflects well upon this operation.

This is an example of an aneurysm elsewhere. This man had two femoral aneurysms. You see they are quite small and will appear rather innocuous. They are in the sense when they rupture, they do not cause the patient to exsanguinate and die as one in the thorax or abdomen would.

But, because the artery is surrounded by tissues that will hold the blood clot there, when rupture occurs, hematoma forms under pressure and occlusion takes place. The other complication is thrombosis. Because of its small, lumen thrombus formation which occurs inside of it, obstruction takes place.

In summary, all the complications of the small, peripheral aneurysm is arterial insufficiency of the extremity.

In a study of the natural course of the disease of the femoral and popliteal aneurysms, sooner or later they will develop a complication that will lead to amputation in the majority of instances. Because of such complications, death can occur.

In a group at the Massachusetts General Hospital, they were treated without removal; and a quarter of them eventually died as a result of their complications.

As you can see here through two small incisions these aneurysms have been removed and vessel continuity has been re-established by the insertion of these grafts, making it quite a simple operation and preventing the development of these complications that lead to disability.

Next slide.

This is just an example of popliteal aneurysms. These, sometimes, are difficult to feel. In any routine physical examination, the pulses should be felt in the characteristic locations, in the femoral, popliteal and the feet. Not only does it give you some idea as to the adequacy of their circulation, but it also will help to pick up these lesions which may be silent at the time. This is an aneurysm behind the knee, and it has been excised and replaced by this synthetic substitute. The one that we are using routinely at the present is a knitted dacron substitute.

Next slide.

Now, the next, and perhaps the most common, arteriosclerotic and vascular that we see is an arteriosclerotic lesion that produces poor circulation, arterial insufficiency of the lower extremity.

Again, you know, up until not too long ago we thought a fellow had poor circulation in his feet, that all of his arteries down his legs and feet were shut

off with a lumbar sympathectomy. After all, the patient comes from, we get

But, all amputation it is a local in both legs; then, a contraction, there was quite

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Due to the surgical technique replaced by

And in the by-passed, a collateral circulation instance the and then they were sutured the by-pass

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In this situation occlusion, an by blood disclusion in the major, operation restored to the

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This is another lesion was excised aneurysm was side an end-to-end of the graft

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In all of the acceptable to the of the lower extremity gangrene or when normal circulation the mere demonstration for an operation

Now, in not lesion is not in the demonstrated

This is an arteriosclerotic superficial femoral column of dyes.

Patients who a set up like the

off with arteriosclerosis; there wasn't much we could do about it except a lumbar sympathectomy. Since that increased the circulation of the skin, and, after all, that is the way many of the lesions that lead to amputation originated from, we got some help from a lumbar sympathectomy.

But, all too often symptoms were not relieved; in the more advanced cases, amputation was not averted. As time went along, it was discovered even here it is a localized lesion. I think you can see here this patient with symptoms in both legs and with absent pulses in both legs and on arteriographic examination, a complete obstruction just beyond the renal arteries here, but distally there was good filling of normal iliac arteries on both sides as you can see here thus quite nicely demonstrating the localized nature of this occlusive lesion.

This shows another more advanced type of lesion with thrombosis ascending up to the renal arteries, partially obstructing the renal artery on one side.

Next slide.

Due to the localized nature of this disease, it is also treatable by the direct surgical techniques; in this instance here the diseased area was excised and replaced by a graft, thus allowing normal blood flow to go to the lower legs.

And in this situation here the obstruction was not excised. It was merely by-passed, using this new vascular replacement in an effort not to disturb the collateral circulation that he had and also to simplify the operation; in this instance the end of the graft was sutured to the side or above the occlusion and then down below the occlusion the ends of the two iliac limbs of the graft were sutured to the patient's iliac arteries beyond the occlusion, thus allowing the by-pass route around the obstruction to restore circulation.

Next slide.

In this situation here, again, the end of the graft was sutured above the occlusion, and then the two iliac limbs were brought through tunnels made by blood dissection down to the groin, thus by-passing a long, extensive occlusion in the iliac system bilaterally. In this way a rather simple, not too major, operation was performed and immediate pulsatile circulation was restored to the lower legs and the feet.

Next slide.

This is another example of the type of operation that can be performed. The lesion was excised here. This part of the lesion was excised because an aneurysm was in the process of developing as well as the obstruction. On one side an end-to-end anastomosis was made between the iliac artery and the iliac end of the graft. On the other side it was by-passed down the groin.

Next slide.

In all of the occlusions in the abdominal aorta and iliac arteries are susceptible to these techniques. And, given a patient with arterial insufficiency of the lower extremities, whether it is pain at rest or ischemic lesions, early gangrene or whatnot, if he does not have femoral pulses in every single case a normal circulation can be restored by these techniques. Consequently, just the mere demonstration is all that is necessary to say that he is a candidate for an operation.

Now, in not quite half of all of the patients with arterial insufficiency, the lesion is not in the abdominal aorta; it is out in the thigh, out in the leg, as it is demonstrated here.

This is an arteriogram of a patient with a segment of an occlusion in the superficial femoral artery. This is the femur, and you can see this gap in the column of dyes. That is a localized occlusion in the femoral artery.

Patients who have the milder forms of arterial insufficiency will have such a set up like this in ninety per cent of the cases. If they have advanced

arterial insufficiency with a lesion localized to the thigh, that is, they will have a good femoral pulsation but nothing beyond, only about half of them will have this. When they do have this, they are a candidate for operation. Those who do not have a good distal segment like this are apt to have an arteriogram like this over here. As you can see, there is no distal segment of sufficient size in which the graft can be connected. Consequently, in the thigh, all the patients are not candidates for this direct operative maneuver. But, in the majority of them they are. The only way it can be determined is by an arteriogram because some of the most severe forms of arterial insufficiency will have a nice setup like this. Yet, some of the mildest forms of arterial insufficiency will have a setup like this. We have to do an arteriogram in order to select the patient.

Next slide.

The operations we prefer in the thigh will make it a simple operation. It is not much more of a cutting sort of operation than the varicose vein operation.

The arteries are exposed through two incisions, one is up in the groin, and the common femoral artery is exposed here. After controlling the vessel proximal and distal to where the incision is to be made, the incision is made, following which the end of the graft is sutured by a simple over-and-over suture to the side of the vessel, following which an instrument like a vein stripper is passed by blunt dissection to the other incision which has been made in the popliteal space over the normal distal segment.

The free end of the graft is tied to the end of that vein stripper and is pulled down to the other incision. The exposed artery then is open, and the end of that graft is sutured to the side of the normal vessel.

Thus, the operation, then, is designed merely just as to insert a collateral channel immediately of the size of the vessel that is plugged up. So, it is quite a natural sort of operation. The patients own collateral channels are not interfered with. This is the desirable feature of any operation in as much if something happens and it fails, it doesn't make the circulation worse.

Next slide.

This shows such a graft in place in such an operation. This is a plastic tube sutured to the common femoral here. It is under the skin down to here. The other end of it is sutured to the popliteal artery.

Next slide.

This is another example. You see the two smaller incisions here. In this incision, this plastic tube has been sutured to the femoral artery, to the side, above the occlusion and down here the other end has been sutured to the side of the patent vessel below.

Next slide.

Now, it isn't the leg and the abdominal aorta and iliac arteries that are attacked by this lesion. The carotid arteries are also involved. I am thinking now and speaking now of the stroke syndrome, CVA, stroke, hemiplegia, many common terms for patients, old folks, who develop strokes. The average doctor even today thinks that a patient has a lesion inside of his skull. He has just got a degenerative lesion, and that is tough. Do the best we can. Give him anticoagulants to keep him from getting worse. But since it is inside the skull and dealing with small vessels, it is felt that there is just nothing much to be done about it. Well, that is an erroneous concept because in a quarter of the cases of patients who have strokes, the lesion is not inside the skull; it is out of the skull in the carotid artery. This is the internal carotid; this is the common carotid. You will notice in this patient here there is almost complete obstruction in the internal carotid artery.

This patient was have been called "He had been coming talk. They would

You can see this Next slide.

As I say, a question accounting for the by. The reason the other side. Here is opposite side of the and this patient, also no neurologic deficit.

Next slide.

Here is another external carotid the You can see these artery. That fellow

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Unfortunately, from neurological defect; the institution of patients die.

Consequently, the the lesion is outside

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Because of the location we can perform an operation, it is susceptible operation.

In the first place, which is done under patient basis, if necessary lesion, it is done under the carotid, common are mobilized like this tion does not have to have to use hypothesis If the operation does

We cut across proximal arteries peel back from stored by an end-to-end

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It is more important get into the brain. We We do it in this way: The flow of blood compressed, and the proximal line. And, as a last the proximal clamp is external carotid artery.

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This patient was having these transient strokes, and in some quarters they have been called "chills" lately. This patient was having intermittent strokes. He had been completely paralyzed on the right side of his body and couldn't talk. They would last anywhere from five minutes to a half a day.

You can see this localized area, occlusion, here in the carotid artery.

Next slide.

As I say, a quarter of the patients with strokes have such a lesion as this accounting for their condition. Now, a quarter of those patients seem to get by. The reason they get by is because they get collateral circulation on the other side. Here is a cerebral arteriogram showing filling of the brain on the opposite side of the occlusion. It is filling through the intercranial vessels, and this patient, although he had an occlusion, had survived a stroke and had no neurologic deficit.

Next slide.

Here is another such patient. Because of good circulation through the external carotid through his eye, he had good circulation inside of his head. You can see these cerebral vessels being filled through the external carotid artery. That fellow got by.

Next slide.

Unfortunately, from this lesion only a quarter of them get by, the residual neurological defect persists in a third of the patients. And, in a third of them, the institution of care is required. Somewhere around ten per cent of the patients die.

Consequently, therefore, it is important to realize in patients with strokes the lesion is outside the skull in the neck. Even so, the prognosis is poor.

Next slide.

Because of the localized nature of this lesion to a vessel of sufficient size that we can perform an arthrotomy and close it without producing undue narrowing, it is susceptible to operation, and in most of these cases a very simple operation.

In the first place, they are selected for operation by a carotid arteriogram which is done under local anesthesia using a small amount of dye on an out-patient basis, if necessary. If they are selected for operation for the localized lesion, it is done under local anesthesia. An incision is made in the neck, and the carotid, common carotid, external carotid and internal carotid arteries are mobilized like this. They are temporarily occluded. We feel that circulation does not have to be maintained during this period of planting nor do we have to use hypothermia because patients have chronic arterial insufficiency. If the operation does not take long, it is not necessary to maintain circulation.

We cut across proximally this which we have shaded here, and the normal arteries peel back from over the atherosclerotic material. Continuity is restored by an end-to-end anastomosis.

Next slide.

It is more important, we feel, to make certain air bubbles and debris do not get into the brain. We feel it is important to make certain that does not occur. We do it in this way: The clamp next to the brain is removed first, and the back-flow of blood compresses the air and pushes it out through the suture line. Then we re-apply that clamp right near the suture line. Again the air is compressed, and the proximal one is removed, and goes out through the suture line. And, as a last gesture, the internal carotid is temporarily clamped when the proximal clamp is removed permitting air bubbles and debris to go into the external carotid artery.

Next slide.

Now, this is the limb that is anastomosed to the subclavian artery, and this is the limb that is going into the neck.

Next slide.

This is an anastomosis on the common carotid artery, this point here, restoring circulation to the arm and the head.

Next slide.

This is angio-aortogram following the operation demonstrating patency of this graft. You have a photograph here demonstrating dyes flowing through this graft carrying blood to the arm and the brain.

Next slide.

Now, this is another condition. If it isn't arteriosclerosis, it is certainly related to it. That is a localized, segmental occlusion of the renal artery. This is a renal artery here. You can see it looks like a chain of beads or something of that sort. What that is multiple, localized occlusions with dilations beyond the narrowed area. That is the phenomenon that always occurs whether it is an arteriosclerotic artery. There's a dilation beyond. That is what gives that appearance there.

This is a young woman, thirty years old. She had severe hypertension. Her doctor heard a bruit over this kidney, and prompted us to give us the chance to do this study which we did, and demonstrated this lesion. By removing that localized lesion and inserting a little graft, the kidney was saved, and her hypertension was relieved.

So, it is our feeling that any patients with unexplained hypertension actually in the young-middle-aged group should be studied by this technique. Already hundreds of patients have been demonstrated to have such a lesion, and the hypertension can be cured either by removing the kidney or by restored circulation to the kidney.

Next slide.

I am sure that anyone associated with any industry is interested in traumatic lesions. Well, the traumatic lesions are easy because we are, in most instances, dealing with normal vessels, and they sew well; they do sutures well. And, usually, the person is in good shape. He wouldn't be working if he wasn't in pretty good shape.

It is important if the person has an arterial injury to have that repaired just as soon as possible. The only thing that prevents a successful operation is undue delay of any operation. For example, if muscle tissue goes without blood for a sufficient period of time, it develops irreversible changes.

If the lower leg becomes swollen and tense and anesthetic, the chances of restoring circulation, although possible, are not too good. It is essential to have them operate upon it just as soon as possible.

Now, in most instances, a graft is not necessary because the injury is a laceration or a stab, either by some sharp instrument or by a bone, and it is just a mere debriding or cleaning of the local area and bringing the lacerated edges together.

Even in those instances where a considerable defect in the artery was produced by the injury, a graft still is not necessary, in most instances, because after the wound is properly debrided, the artery, being an elastic tube, can be mobilized and brought together under tension. It is essential that these vessels be put together under tension in contrast to the bowel. In the bowel, we are very careful to make certain there is no tension. It is the direct opposite in these vessels. They have to be under tension.

By mobilizing sufficient length proximal and distal to the cut areas, the two ends can be brought together and sutured in practically all instances. That should be done because all extremities, practically, can be saved in contrast to in olden times when ligation was the common form of therapy.

For example, in World War II, when the femoral artery was injured and ligated, half of the legs were lost. In this day and time with our city and county hospital, this injury is not uncommon. Our residents repair those, and we don't lose any legs from laceration of the femoral artery.

If the popliteal artery was lacerated and ligated, better than seventy-five per cent of those legs would drop off, where our residents repair popliteal lacerations. They don't lose any legs.

Consequently, it is a form of therapy that is associated with preservation of the extremity, and the prevention of deformity.

Next slide.

This is where we might speak, though, of some delayed traumatic lesions. This individual had a laceration of the brachial artery at this level here. It was repaired at some hospital. Not too long after discharge, he developed a mass. He noticed that it throbbed and pulsated.

Next slide.

It was for that reason that he was admitted to University Hospital in Houston. You can see at operation what had happened. Here is a blister or a mass on the artery, and it was made up of clot. What happened was the artery had pierced by a sharp instrument. It bled, and he developed a pulsating hematoma or a false aneurysm.

Next slide.

In this X-ray is demonstrated quite nicely the axillary or brachial artery here with this glob of dye in this particular area here which is in the aneurysm.

Next slide.

That was simply excised, and you can see it was several inches of excision which were required to get rid of that lesion. Having mobilized it proximally and distally, it could be brought together. It was sutured by a simple over-and-over suture.

Next slide.

This is a summary of the operations up to several months ago in our department in Houston in spite of the large number. It is presented merely to indicate that in our opinion it is a field of surgery that is safely established. We feel as though this has permitted restoration of function and prevention of loss of both life and limb.

I am going to pass around one of these new synthetic tubes that we have been using. It has a number of desirable characteristics. It is flexible. It is very tough, strong, and it lasts certainly for a long, long time. It does not fray. It can be cut with the scissors and sutured without having it frayed. You can make an incision in the side and sew another graft on the side of it without it fraying. The only unsound characteristic of this tube is like that of all synthetic materials, and that is it is porous. One has to be quite careful in the use of it as in all of them that new bleeding does not take place. But, by soaking them in the patients blood, preclotting is reduced to a safe minimum.

Thank you very much. (Applause)

DR. I. GOLDBOWSKY: Thank you very much, Dr. Crawford.

Are there any questions from the floor, any discussion?

Dr. Bennett.

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DR. R. J. BENNETT: What is the longest period of time that one of these has been in place and found satisfactory?

DR. STANLEY CRAWFORD: The longest period of time for a synthetic tube, to my knowledge, to be in place and use in human beings is approximately four years. The one that I have here of this substance, the dacron, the longest we have is about three years. Now, this particular brand and manner that we have treated this, about a year and a half.

In laboratory animals, they have been in, I think, about six years now.

DR. R. J. BENNETT: When you do an aortic, do your patients have a lot of pain? If so, how do you control that?

DR. S. CRAWFORD: What we do is give the patient a barbiturate to prevent the development of convulsions, and also give them a good shot of demerol. They have at the time of the injection the contrast material, we use fifty per cent Hyopaque, about eight ccs. which is injected in the common carotid artery.

Patients have a warm feeling in the face and the eye and the throat, in most instances. It is not too disagreeable, although they don't particularly like it.

We have followed these cases along, as I said, on an out-patient basis for a good many months following operation. I think the fact that they still come from considerable distances and permit this type examination to be done over and over as a follow-up indicates to me it is not too bad.

DR. I. GOLDOVSKY: Dr. Cushman.

DR. G. F. CUSHMAN: I would like to know if Dr. Crawford has had any success in demonstrating mesenteric insufficiency, and so, susceptible to treatment.

DR. S. CRAWFORD: We have not had a patient with chronic arterial insufficiency of the superior mesenteric artery. We have not had but one patient with acute arterial insufficiency of the superior mesenteric artery.

The latter patient was one due to dissecting aortic aneurysm; although we were successful in restoring circulation to the bowel of the patient, he did not survive his disease.

I am sure you are familiar with Dr. Robert Shaw's work in the chronic arterial insufficiency of the superior mesenteric artery, and the Massachusetts General Hospital where they have a very active gastro-intestinal clinic. They have quite a number of patients with the Sprue syndrome there. Knowing the patients have an embolus of the superior mesenteric artery or mesenteric thrombosis or what have you, frequently have diarrhea and so on. He studied some of these patients, these techniques, our ateriography and were able to demonstrate in some of them that they had occlusions of the superior mesenteric artery. As I understand, he has operated on two of those patients now and has been using these direct techniques and has been able to restore circulation and relieve them of their digestive disorders.

UNIDENTIFIED VOICE: Is there any occasion now to use the old wiring of the aneurysm?

DR. STANLEY CRAWFORD: I wouldn't. I am highly doubtful there is an occasion for the use of the wiring operation at the present time, but I certainly

would want to be very careful in making such a statement as that saying never, because I was fortunate enough to be in surgery when that operation was still being done. I can recall patients who had severe bronchial obstruction, say with collapsed lung on one side and having a great deal of trouble, and we would wire the aneurysm; something would happen right afterwards; it would permit a better airway. This bronchus would open up, and the lung would become inflated. They would just be better, although their total life didn't seem to be extended a great deal. The aneurysm went ahead and ruptured a few months later.

I have seen in some instances improved aneurysms, appear to be, by what was done; whether it was the wiring or not, I don't know.

I can visualize the possibility of a patient with a large thoracic aneurysm that was obstructing the trachea of the bronchus, and the patient's age or general condition or something would not permit the excision and graft. I would think that there would be times when one would from the local anesthesia wire such an aneurysm, possibly. I don't know, but I think it would be a possibility.

DR. I. GOLDOWSKY: Any other questions?

DR. F. S. MORRISON: Dr. Crawford, that was a very nice paper. I would like to ask when do you recommend carotid arteriogram to check for these carotid obstructions? right after the CVA or after they have recovered from them or had something to do with the extent of the original accident? In other words, if they have had a severe one, complete hemiplegic, do you recommend it at all?

DR. STANLEY CRAWFORD: In my opinion, there is no definite way of making the diagnosis—there is no way that I know of—that you can be certain of telling whether or not the lesion is inside or outside the skull. In other words, there is no way that I know of you can tell whether this patient is suitable for operation that will relieve him, short of an arteriogram. The only way you can be safe as to whether or not this patient is a candidate for an operation which in my opinion is being established. As far as I am concerned, it is established. But, more and more referring physicians are being convinced of it which is a good sign, and I think they should be routinely performed on all patients who have strokes.

Now, once the internal carotid artery occlusion becomes complete, although it is localized, the atheroma clots; a thrombus develops on top of it. There are no branches of it; there is a long segment of internal carotid outside of the skull. But, it has no branches.

Even though this little short thing blocks off that, blood doesn't stay liquid in that big long segment; it clots. And, the lesion then does extend inside of the head. Under those circumstances it does become an impossible situation from a surgical point of view unless they operated upon him very early. Of the completely obstructed arteries of the internal carotid group that success was obtained was in one operation upon a patient right away. We were able not only to take out the atheroma but pull the clot out like pulling an angleworm out of a hole. Since this patient did not have a severe stroke and consequently had not had irreversible changes in his brain, he recovered.

Now, there is no question but what the best group of those in which the occlusion is incomplete because it is still discrete and localized, and it is in that group that the syndrome is more apt to be the small stroke, the transient one. The longer it takes to recover from it temporarily.

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The fact that they have had this little thing and they have recovered, they think they might not have it again. But, the majority of them will have them over and over whether they are given anticoagulants or not. It will eventually become complete and what I said would happen to them on that slide.

I think that you have to appraise all these cases with an arteriogram, every single one of them.

A fellow comes in with a bad leg, there isn't a doctor, certainly in Texas, that has a patient with a bad-looking leg that doesn't jump on his white charger and have something done about it because he thinks his leg can be saved. I think the same thing about the strokes.

I think it is a bad thing about the old CVA in a stroke patient. All the hospitals I have ever worked in, it has been a fight as to who is going to be saddled with those patients, the medical service trying to get the neurologic service to take them. Now they are very happy that the surgery service would like to take some of them. It is condemning to doctors to attend to patients who ordinarily are not too agreeable.

It reminds me a little bit of one of my chemistry professors during the war was assigned to making booby traps for the army in North Africa. He looked around, and he made a very effective one. As you know, there are a lot of donkeys in North Africa. At that particular time it was covered with donkey droplet. Well, my buddy devised a booby trap that looked just like a donkey droplet. He said that the greatest thing he got out of this war was that he condemned the Germans to contemplating and inspecting every horse droplet in North Africa.

I think these patients with the CVA's and what not are sometimes disagreeable, and perhaps we are condemned to taking care of the type of patients that have not been very popular in the past.

I think since something can be done about these to relieve them, it is no longer an incurable disease, and in many instances they will not be disagreeable.

DR. I. GOLDSKY: No more questions.

I want to thank you very much Dr. Crawford for a very fine presentation. (Applause)

Has Dr. Ochsner arrived?

I have one little item I want to talk about. We have had quite a bit of off-the-record discussion here. I want you to know that all these proceedings are very carefully edited before they go into final print. We have made arrangements for Mrs. Gore to make a separate typing or transcription. It will not be put in the proceedings at all, but it will be available from Mr. Parker's office in Chicago for reference only.

If anyone is in disagreement with that, please say so. If you do have something that was said off the record that you want to refer back to, you will be able to get it from Mr. Parker.

Dr. Ochsner is still delayed, so I am going to go on. At this time I am going to call on our Railroad Retirement Board, Mr. Eugene E. Koch and Mr. Walter R. Knolle. Will they come up here? I think they have a machine to be put in order.

While they are marching up here and getting ready, we will take a short recess.

(Short recess.)

DR. I. GOLDOWSKY: Gentlemen, will you kindly be seated so we can proceed with our program?

At this time I want to introduce Mr. Eugene E. Koch of the Railroad Retirement Board.

MR. EUGENE E. KOCH (Assistant Director of Unemployment and Sickness Insurance, Railroad Retirement Board, Chicago, Illinois): We are going to show you an audio-visual presentation about unemployment insurance.

This presentation has been developed by the Railroad Retirement Board and has been approved by the Association of American Railroads.

As you know, the Railroad Retirement Board pays unemployment insurance benefits. These benefits are financed entirely by contributions made by the railroads.

The management of the railroads have been increasingly concerned over the cost of unemployment benefits and measures that can be taken to keep experienced people working.

This presentation which we are about to show you indicates the accomplishments that have been achieved by the railroads, by the Railroad Retirement Board, working together. It gives some indication of what we might hope for in the future.

We are ready to show now.

(Presentation "Keep Experience at Work.")

DR. I. GOLDOWSKY: I believe Mr. Walter Knolle has a few words.

MR. W. KNOLLE (Railroad Retirement Board, Chicago, Illinois): I will let Mr. Koch speak for me.

MR. EUGENE E. KOCH: Gentlemen, I really have nothing more to say. The film and soundtrack speak for themselves, but Mr. Knolle and I will be glad to answer any questions that you might have. That takes care of that part of the program.

DR. I. GOLDOWSKY: Any questions from the floor? Does anyone desire to ask Mr. Koch any questions?

If not, that is it. I would like to assure the Railroad Retirement Board the Medical and Surgical Section will do all it can to help keep the men on the job and off the job in other jobs.

MR. EUGENE KOCH: Thank you very much, Dr. Goldowsky. (Applause) Thank you all.

DR. I. GOLDOWSKY: Now, at this time I want to proceed with our meeting, and we will have our address on "Noxious Substances as a Causative Factor in Carcinoma of the Lungs," by Dr. Alton Ochsner, Professor of Surgery, School of Medicine, Tulane University; Director of Surgery, Ochsner Clinic and Foundation Hospital; Dean of Visiting Surgeons, Charity Hospital; Consulting, Illinois Central Hospital, and Southern Pacific Railway.

I can assure you, Dr. Ochsner, you may not have spoken to such a small group, but you probably have never spoken to such a select group.

DR. ALTON OCHSNER (Ochsner Foundation, New Orleans, Louisiana): Thank you, Mr. Chairman:

It is indeed a pleasure for me to be here. When Dr. Olson called me and asked me if I would talk, of course, I was very happy to because I am extremely

grateful to tell you I have much to say on this Central and Eastern years.

As many of you know, the incidence of carcinoma of the lungs 10 years ago, as seen and operated on, was very low. The only real cause of thoracic surge

We know the matter of fact carcinogen was Schneeberg and the caricature

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grateful to the two railroads with which I am affiliated. I don't know that I have much to do with them, but I have enjoyed my affiliation with the Illinois Central and the Southern Pacific. I have been with them for a number of years.

As many of you know, I have been very interested in the question of carcinoma of the lung for a long time. My interest was started about twenty-five years ago, and I have had the rather unique experience of probably having seen and operated upon more patients with carcinoma than any other person. The only reason for that is I started my surgical career just at the time when thoracic surgery was being developed.

We know that radioactive substances produce carcinoma of the lung. As a matter of fact, the first evidence of carcinoma of the lung was produced by a carcinogen was shown in the mines in Schelesia and Czechoslovakia where the Schneeberg and the Joachimsthal miners were found to have a high incidence of the carcinoma of the lung.

This is due to radio-active substances, particularly uranium and cobalt.

Chromates are also known to produce carcinoma of the lung, particularly the monochromates. In the United States chromates are accepted as a cause of carcinoma of the lung, although it is not compensable by law. It is in Germany.

There is very good proof that asbestos is a cause of carcinoma. This is seen in individuals working with asbestos, particularly miners. It is also seen among plumbers who work with asbestos, seamfitters, particularly.

Probably the most important carcinogenic agent in lung cancer is cigarette smoke. It is a known carcinogen, although there are some people who still doubt that there is a causal relationship between smoking and cancer.

The above mentioned factors are proven carcinogen agents, I would like, now, to consider factors in which there is a suggested relationship in that lung cancer occurs with slightly greater frequency among these workers than the general population.

Exposure to certain metals (welders, for instance), Boiler Scalers, grain dockers (have a higher incidence, particularly in England).

And beryllium workers, there is a suggestion of a higher incidence of lung cancer than the general population.

Blast furnacemen, and particularly steel furnacemen, have been shown by the Japanese to have a greater incidence of lung cancer. And, steps have been taken to prevent it.

Other occupations are painters and varnishers, lubricating oil workers, arsenic workers, nickel workers, tobacco manufacturers, lithographic and process engravers, tailors' clothing workers, drapers, bartenders, butchers, university staffs, office staffs, commercial travellers, porters, and diamond cutters.

All of the above mentioned occupations have been mentioned as having a higher incidence of brouchogenic cancer than the general population. It is obvious that few if any of them have anything in common as far as their occupations are concerned. There is only one thing, I think, that they probably have in common, cigarette smoking.

Aside from the first group I gave in which there is a very definite relationship between the occupation and lung cancer, there is no occupation in which there is apparently a relationship.

I attempted because I was talking to railroad surgeons to find out if there was any study in which the railroads might be incriminated because I am sure that is the thing you people want to know about.

There is only one study that I could find; that was by Heuber who, as you know, is a member of our National Health Laboratories and who has done a great deal of work on occupational cancer.

Heuber did a study in which he showed there was a higher incidence of cancer among the operating staffs of the railroads than among the non-operating staffs. But, this was very incomplete because there was nothing in this study said concerning their smoking habits. Obviously, among the operating staffs of the railroads, there are very few women; most of them are men. The women are mostly in the offices. I think that that is probably the reason why the incidence of cancer of the lung was higher among the operating staff than among the non-operating staffs.

I think if the smoking habits were known, it would be shown that the individuals who have the cancer of the lung are smokers. I am convinced that whenever you see cancer of the lung aside from those working with radioactive substances or those working with chromates, or asbestos, that the individual who develops cancer of the lung is probably a very heavy smoker, and that his smoking habit is the thing that is responsible for his cancer and not his occupation.

Now, just a word about the incidence of cancer of the lung. It is something about which you and I must be concerned. In Massachusetts cancer of the lung is the most frequent cancer—superseding since 1950 even cancer of the breast.

It increased from 3.08 per 100,000 in 1930 to 42.16 in 1955!

Cancer of the lung is now the most frequent visceral cancer in both sexes. It has outstripped everything else.

In 1930 twenty-five hundred people died of cancer of the lung; in 1956 twenty-nine thousand died of cancer of the lung. That isn't coincidental.

We know that cancer of the lung is much more frequent among men than among women. It is thought to be due or said to be due to a sexual relationship. It isn't at all. Until the mid '30's the incidence of cancer of the lung was the same in both sexes. About 1934 there was a tremendous increase in cancer of the lung of men, and there has been a slight increase in the incidence of cancer of the lung in women.

Why is this? In 1914 at the start of the First World War, men began smoking cigarettes heavily. The twenty-year-long period from the First World War until the mid '30's is just about the length of time for the cancer-producing affects of cigarette smoking to produce its effects.

In New York State where the vital statistics are also valid, from 1931 to 1950 there has been a 385 per cent increase in the incidence of cancer of the lung in men. And, during this same period of time, all other cancers increased only two per cent.

In women the increase in cancer of the lung was sixty-eight per cent during which time all other cancers decreased fifteen per cent.

Cancer of the lung is the only cancer that is increasing in both sexes.

This has been true not only in our own country, but it has been true in other civilized countries where people smoke. In Holland from 1924 to 1951 there has been a tenfold increase in the incidence of cancer of the lung in women, and a twenty-four-fold increase in the incidence of cancer of the lung in men.

In England from 1920 to 1954 there was a thirty-eight-fold increase in the incidence of cancer of the lung in men. In fact, in England, 1953, of all the men who died from all causes between the ages of forty-five and fifty-five, the most productive years of a man's life, ten per cent died of cancer of the lung.

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The statement is frequently made: There can be no causal relationship between smoking and cancer because, if there were, we should have a higher incidence of cancer of the lung in the U. S. than in England because we smoke more than the English. This is a truth, but it is only a half truth. It is true that the incidence in cancer of the lung is higher in England than here in the United States, and it is true that we smoke more than the British do. But, we have smoked more than the British only for the past nine years. Prior to nine years ago, they smoked much more than we; and they are now paying the terrific price for their tremendous smoking for the past twenty-five and thirty years. It is frightening to me to think what is going to happen to us in another ten or fifteen years when our smoking habits catch up with us. It is going to be almost a catastrophe.

Cancer is a disease of older age; of all the persons ninety years of age, a greater percentage will have cancer than those eighty. Of those eighty, a greater percentage will have cancer than those seventy, and so on.

This is true of every cancer except one. The one exception is cancer of the lung. Cancer of the lung increases very sharply to reach a peak at the age of fifty-five following which with advancing age, there is a decrease. Cancer of the lung is the only cancer that doesn't follow the pattern of all other cancers.

Why does it behave differently? It behaves differently for one reason, and one reason only: The individuals who have smoked heavily and subjected their heart and blood vessels to the deleterious affects of tobacco, develop coronary thrombosis, die and don't live long enough to develop cancer of the lung.

A dubious advantage of smoking, therefore, is that one can spare himself a cancer-of-the-lung death by smoking heavily and dying early of coronary disease. One might carry analogy a little further and say that one might spare himself a death from both these causes by shooting himself at forty which no one would suggest, of course.

It is a slow form of suicide, but it is just as certain as shooting ones self.

There have been several statistical studies made, which Dr. Little who is the Chairman of the Tobacco Committee outwages because they are statistical. The basis of all our knowledge is statistics and everything in medicine, I don't have to tell you, is based upon statistics, ultimately. I am sure that the railroads are run by statistical analyses. To poo-poo statistics as not being worthwhile, is simply abating the question.

There are two types of statistical studies in a problem such as this: One is retrospective, which consists of the determination of the number of smokers among a group of patients with cancer.

There is some criticism to this method because it is a selected group.

Prospective studies consist of determining the smoking habits of a large number of individuals and following them for a number of years and determining what happens to them. There is no selection here.

There are two studies which have been reported so far. A third one, I understand, is to be reported very soon. That is being carried out by the Veterans' Service.

But the two that I want to speak about today, one was done by the American Cancer Society here in the United States, and the other done in England by two physicians, Doll and Hill.

The British study was concerned with the medical profession. It was done by having the physicians fill out a questionnaire concerning their smoking habits and then following them. And, this is the result of that study.

The incidence of cancer of the lung per hundred thousand population, in the non-smokers was seven; in the pipe smokers, thirty-eight; in the pipe and

cigarette smokers, sixty-eight; and the cigarette smokers, a pack or more a day, 125.

This study shows that there is a relationship between smoking and cancer. It further shows that not only was there a relationship, but the relationship varied according to the amount smoked; the non-smokers seven; up to fourteen cigarettes a day, forty-seven; from fifteen to twenty-four cigarettes a day, eighty-six; and more than twenty-five cigarettes a day, 166.

It is almost like a mileage figure. One can determine how soon one wants to develop cancer of the lung by the amount that he smokes. If he doesn't want to develop it at all, don't smoke as I don't. If he wants to develop it soon, smoke heavily, because he is going to develop it soon.

I am frequently told: Well, it won't do me any good because I have smoked too long, and the die has been cast. Dr. Graham said this several years ago and he used to chide me about my belief concerning the relationship of smoking to cancer. But then he became convinced that there was, and he became quite intolerant of the people who smoked. The tragic fact is that Dr. Graham who did the first successful pneumonectomy for cancer of the lung died of cancer of the lung himself.

It is not necessarily true that the heavy smoker is doomed and that he can't be benefited if he stops because the pre-cancerous changes are reversible we know now. And the studies by Doll and Hill show it. They show that in those that continued smoking, the incidence of cancer of the lung was 103; in those that discontinued smoking, but had discontinued less than ten years, it was fifty-nine; in those who had discontinued over ten years, it was thirty-three; as contrasted with seven in which the group had never smoked.

The American Cancer Society study consisted of twenty-two thousand voluntary workers, young workers in the United States, interviewing two hundred thousand men between the ages of fifty and seventy. These are the ages of which cancer of the lung are found.

These young ladies had each of the men fill out an elaborate questionnaire concerning their smoking habits: whether they smoked at all, what they smoked, how long they had smoked, how much they had smoked, and if they have ever stopped.

These questionnaires were filed at the Cancer Society Headquarters, and each year each of the young ladies reinterviewed each of the men whom she had interviewed the year before. There was almost a ninety-nine per cent follow-up.

After a six-year period of time, a little over twelve thousand men had died. In those that died, she got a photostat of the death certificate and sent it to the Cancer Society Headquarters. If they had died of cancer and had an autopsy or biopsy, she got a piece of the tissue and sent that in to the Cancer Society.

The results of this study showed that the overall death rate was 105% higher among cigarette smokers than non-smokers; the death rate from heart disease was 115% higher among cigarette smokers than among non-smokers; and, the death rate from lung cancer was 800% higher among cigarette smokers than among non-smokers.

I have yet to see the physician who doubts that there is a relationship except two individuals: One is an individual who is an employee of the tobacco companies, and the other individual is the individual who is addicted to tobacco himself. Naturally, I am going to try to excuse that which I do. I am not willing to admit that anything I do is harmful to me.

Several years of the American can be no cause were, why do we

Of course, no talked to Dr. I about it. He then started on the name of C membrane of the smokers—they leading to cancer

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Several years ago while attending a Cancer of the Lung Committee meeting of the American Cancer Society, I was distressed because someone said, "There can be no causal relationship between smoking and cancer because, if there were, why do we not see pre-cancerous lesions?"

Of course, not being a pathologist, I couldn't answer this. I came home and talked to Dr. Dunlap, our Professor of Pathology at Tulane, and asked him about it. He thought for a moment. He said, "We don't look for it." They then started one of our senior students on a piece of investigation, a man by the name of Costello. This work demonstrated that although the mucous membrane of the tubes was normal in non-smokers, definite changes occurred in smokers—they were most marked in heavy smokers with precancerous changes leading to cancer.

We have become a cigarette-smoking nation. In 1880 the per capita consumption in all persons fifteen years of age and over, annual, was sixteen; whereas, in 1953, it was 3,556. The only solace one gets is that in 1956 it had dropped down to 3,193.

There is a parallelism between the incidence of cancer of the lung and the consumption of cigarettes.

Many more men smoke than women. Among the non-smokers in the United States, only twenty-three per cent of them are men, and sixty-seven per cent are women.

Smoking is common among teenagers. Of the teenagers from thirteen to fifteen, inclusive, thirty-seven per cent smoke at the present time. Of those from sixteen to nineteen, inclusive, sixty-seven per cent smoke.

Dr. Graham who originally thought there was no causal relationship between smoking and cancer finally with Dr. Wingner did the most conclusive work showing that there was a carcinogen in the smoking of cigarettes.

They used a smoking machine which looks like a giant candelabra. It smoked sixty cigarettes at a time, just as a human would. Every sixty seconds a drag for two seconds was taken. The smoke was collected, cooled and a tar residue was obtained. The tarred residue was added to a solvent acetone and this combination of the tar and acetone was applied to the skin of animals three times a week.

At the end of eight months, one non-cancerous tumor developed at the site of application of the tar. At the end of a year, one real cancer developed at the site of the application of the tar. At the end of two years, forty-four per cent of the animals developed at the site of application of the tar a cancer which was indistinguishable from human cancer in that it metastasized and killed the animals.

In the control group to which only the solvent was applied, not one animal at the end of two years developed either a non-cancerous or cancerous tumor.

I emphasize this latter part because the statement is frequently made that Dr. Graham's work is of no value because he used cancer susceptible animals. He did not, because in the control group, not one animal developed cancer.

The statement is also frequently made that one cannot compare animal cancer with human cancer. No attempt is made to do so in this experimentation. It simply shows there is, without any question of a doubt, a cancer-producing agent in the smoke from cigarettes.

Since we know that cancer of the lung is increasing more than any other cancer, that it is the most frequent visceral cancer today, and since we know there is a cancer producing agent in the smoke from cigarettes, and since we know there is a parallelism between the consumption of cigarettes and the

incidence of cancer of the lung, the only logical conclusion is there is a causal relationship.

I am frequently asked if filters help. I always answer in the affirmative. They help sell more cigarettes. That is all they do.

In 1954 we spent per capita in the United States eight cents for the control of heart disease, and we spent fourteen cents for the control of cancer. We spent twenty-two cents per capita to control the two principal killers. During the same time we spent thirty dollars per capita for cigarettes. In other words, we spent 136 times as much to cause or aggravate the two principal killers as we did to prevent them.

The British are more courageous than we. The following is the inscription via large yellow posters—displayed in all public places in England.

"To all smokers:

"There are now the strongest reasons to believe that smokers, particularly of cigarettes, run a greater risk of lung cancer than non-smokers; the more cigarettes consumed, the greater the risk."

I mention this simply to show the courage that the British Government has in posting in all public places this poster. It shows that they have assumed the obligation which I think government should.

I am sure what I have said to you isn't going to make any difference in your smoking habits, but I hope that when and if anybody makes a claim against any of your railroads because of cancer of the lung, they have gotten on the job, that you go and find out what their smoking habits are. If they have an adenocarcinoma, it has not been produced by smoking because it is not related to smoking. I believe that smoking is the most valuable diagnostic criteria we have as far as carcinoma of the lung is concerned.

Six years ago I made the statement that any person who has a lesion of the lung that might be cancer, if they do not smoke, it is either not cancer or it is an adenocarcinoma.

In the six years, I have been wrong only twice. There is no other diagnostic criteria that is that accurate.

Whenever a claim is made against the railroad because a patient has developed carcinoma of the lung, inquire into his smoking habits. And, I can assure you that man, if he has an epidermoid or undifferentiated carcinoma, which he is most likely to have because adenocarcinoma is rare (only about twelve per cent of all carcinomas among adenocarcinoma), has been a heavy smoker. He may not be a smoker at that time. But, he will have been a heavy smoker, and I can assure you that his cancer of the lung has been produced by his smoking and not by his occupation.

I would urge those of you who treat patients and those of you who smoke to have a chest plate done at least every six months so when you do develop cancer, it can be detected at a time while it is still operable. Because I am just as convinced as I am standing here, if you don't die of something else first, you are going to develop cancer of the lung. The only thing that will save you is that you might die of something else.

Thank you very much. (Applause)

DR. I. GOLDOWSKY: Thank you very much, Dr. Ochsner. I think it is a pleasure for our group to hear that there is one illness not blamed on the railroad industry. I think we have been blamed for most everything else and have suits and claims against us.

I think it is a comp your audience, and I talk.

Are there any quest Harlan Hackbert.

MR. HACKBERT: I chromates and carcinc Chromates are used form as it is used in m the other as the chrom Can you tell us some of the lung?

DR. ALTON OCHSNER: carcinoma of the lungs p I have gotten from m As far as I can dete high atmosphere of ch It is not extremely and in the factories; tl

MR. HACKBERT:

DR. ALTON OCHSNER: I have never found monochromate that is

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DR. ALTON OCHSNER: lung. He knows not seen a case.

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DR. ALTON OCHSNER: the tobacco people.

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I think it is a compliment to your crusading spirit that I cast my eye over your audience, and I didn't see a cigarette being lighted during your whole talk.

Are there any questions from the floor?

Harlan Hackbert.

MR. HACKBERT: I would like to ask the Doctor about the incidence of chromates and carcinoma of the lung.

Chromates are used in the railroad industry in two forms; one in a powdered form as it is used in mixing cooling solution used in the diesel locomotives; and the other as the chromate is found in the cooling solution.

Can you tell us something about the manner in which chromates affect cancer of the lung?

DR. ALTON OCHSNER: I have had no experience with chromates or carcinoma of the lungs produced by chromates at all. I can only give you what I have gotten from my reading.

As far as I can determine, it is found only in individuals working with a very high atmosphere of chromates, and then only monochromates.

It is not extremely common, but I think it is found only in where it is mined and in the factories; that is as far as I have been able to determine.

MR. HACKBERT: In the production rather than the use?

DR. ALTON OCHSNER: In the production of it.

I have never found anyone calling attention to the fact in its use. It is a monochromate that is responsible; I think everyone is agreed to that.

UNIDENTIFIED VOICE: Am I right in that Dr. Little of Bar Harbor is being discredited at this time; he is not a clinician. He is only a laboratory man. He lost his first mice in the fire up there, but his work was based wholly on laboratory and not on clinical findings?

DR. ALTON OCHSNER: Dr. Little has done no work at all on cancer of the lung. He knows nothing about cancer of the lung. I doubt that he has ever seen a case.

As you said, he is not a physician. He is a Ph. D. He is a geneticist. Dr. Little is talking about something he knows nothing about. He is the front man. He is paid a salary of twenty-five thousand dollars, and, of course, I suppose persons will do a lot for twenty-five thousand dollars.

UNIDENTIFIED VOICE: Dr. Ochsner, what possibility exists for removing the carcinogenic factor from tobacco? What is being done along that line?

DR. ALTON OCHSNER: Of course, that is the thing that distresses me about the tobacco people.

I feel that something can be done.

There are two factors in tobacco which are harmful: One is nicotine. Nicotine produces heart disease. There isn't any question about that. There are available today nicotine-free tobaccos. Those are not the so-called denicotinized cigarettes. Because, the denicotinized cigarettes have almost as much nicotine as do the other cigarettes.

The denicotinized cigarettes advertise they have less than one per cent nicotine, implying they have removed ninety-nine per cent of the nicotine.

The average cigarette has only about one per cent. They have removed so little, it actually makes no difference.

But, there are available today, which can be grown, tobaccos which have no nicotine at all.

The thing that causes cancer is not nicotine; it is tar. Whether this carcinogen can be removed or not, I don't know. I think it possibly can. But, there has been no attempt to do so; that is the thing that distresses me. There has been no attempt to do it. They haven't assumed any obligation at all.

The industry and their Research Committee have spent their money trying to confuse the issue.

For instance, they are trying to blame it on smog. One might accept smog. For instance, they say the reason for the high incidence in London is because of smog. There is a terrific smog in London, as everyone knows. But, immediately across the English Channel in Denmark about thirty miles away where the people smoke the same as they do in England and where the incidence of cancer is the same as it is in England (as a matter of fact, it has assumed epidemic proportions in Denmark), there is no smog whatsoever. The incidence of cancer of the lung is higher in New Orleans than it is in any other city. New Orleans is first; Pittsburgh, eighth.

Now, you might ask me why. The reason is in New Orleans for years people have smoked these Picayune cigarettes. For those of you who don't know what a Picayune cigarette is, it is a very strong cigarette.

The final reason why smog has nothing to do with it is that if smog had something to do with it, women ought to have the same incidence. We always admit that their minds are purer than ours, but they breathe the same putrid air we do.

The reason is the man-made smog that he himself takes in; and I believe that this thing can be solved. I think they ought to be spending their money, a part of that hundred million dollars that they are spending, for advertising, trying to find out what this thing is and giving those of you who have the infantile urge, the suckling reflex, a cigarette that is safe.

That is all it is.

UNIDENTIFIED VOICE: Why the difference between cigar smoking and cigarettes?

DR. ALTON OCHSNER: There are several reasons: One is that the cigar smoker doesn't smoke as much. The cigar smoker does not inhale. One must get the carcinogen in contact with the tissue to produce cancer. There is a third reason which the tobacco people have not made use of. I suppose they won't because of the cost. The third reason is that there is less of the noxious alkaloids in cigars than the other tobaccos because of the way in which it is cured.

You people who come from the tobacco areas know more about this than I.

The tobaccos for cigars are what they call "shed cured." The leaf is picked, and it is kept in a shed for many years. I happen to know the man who makes the King Edward Cigar, which you know is a cheap cigar. They keep the tobacco for the King Edward Cigar for three years. This is kept at room temperature.

As a result, there is an enzymatic process which occurs in the leaf which tends to break down nicotine and other alkaloids.

All the other tobaccos are picked, put in the shed and heated to 140 degrees. That immediately stops the enzymatic process. That is the reason why the

cigar tobacco acts differently from other types.

UNIDENTIFIED VOICE: Why not smoke?

DR. ALTON OCHSNER: Undifferentiating cigarette smokers.

MR. HACKBERT: It means much to me. Here.

In what other sense? In other words, what is the possible cause of inhibition?

DR. ALTON OCHSNER: To bring out this matter. I gave you a causal relationship. There had been a suppression of them.

MR. HACKBERT:

DR. ALTON OCHSNER: The first carcinogen. Percival Pott described. Some of the textile workers' clothes became it is a lack of cleanliness.

There are many cases. I didn't go into this extracted from tar.

I think what the industry should do is to remove them, which

DR. J. R. KNOWLES: It would have absolutely

DR. ALTON OCHSNER: Carcinogen in tobacco itself.

I am sure some of the number of people that are affected at all. It is put in the cigarette. If one finds a very small amount of pure tobacco. It is

I think the carcinogen is the product of combustion.

UNIDENTIFIED VOICE:

DR. ALTON OCHSNER:

They have removed so
tobaccos which have no
tar. Whether this can-
nk it possibly can. But,
hat distresses me. There
any obligation at all.
spent their money trying

One might accept smog.
ce in London is because
ryone knows. But, im-
about thirty miles away
and where the incidence
r of fact, it has assumed
; whatsoever. The inci-
an it is in any other city.

Orleans for years people
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te.
h it is that if smog had
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breathe the same putrid

kes in; and I believe that
spending their money, a
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ed." The leaf is picked,
now the man who makes
cigar. They keep the
This is kept at room

occurs in the leaf which

and heated to 140 degrees.
it is the reason why the

cigar tobacco actually has fewer of the noxious substances than do all the other types.

UNIDENTIFIED VOICE: What percentage have you operated on that did not smoke?

DR. ALTON OCHSNER: Those of the persons that had an epidermoid or undifferentiating carcinoma, ninety-eight and a half per cent were cigarette smokers.

MR. HACKBERT: You speak of tars carcinogenic factor; that term doesn't mean much to me. I happen to be a lawyer, not a doctor like the rest of you here.

In what other substances are we going to find that same tar element? In other words, what other causal factors may the railroad look to as being a possible cause of inhalation causing lung cancers?

DR. ALTON OCHSNER: Well, I suppose there are other areas; but as I tried to bring out this morning, I explored all these areas, and could find none of them. I gave you here those occupations in which it was admitted there was a causal relationship, those factors. Then I gave you twenty-odd of where there had been a supposed increase. There is not a thing in common between them.

MR. HACKBERT: What other substances have the tar in them?

DR. ALTON OCHSNER: There are many carcinogens.

The first carcinogen we knew was coal tar. The chimney-sweep type which Percival Pott described two or three hundred years ago is a type of tar cancer.

Some of the textile workers developed carcinoma of the genitalia because their clothes became impregnated with oil if they didn't keep clean. But, that is a lack of cleanliness, and so it is with chimney-sweep cancer.

There are many cancer-producing agents.

I didn't go into this, but there are a number of carcinogens that have been extracted from tar.

I think what the industry ought to do is to find out what these factors are and remove them, which they are not doing now.

DR. J. R. KNOWLES: The lead put in the paper to produce slow burning would have absolutely nothing to do with it at all; would it?

DR. ALTON OCHSNER: I don't think so. I am convinced there is a carcinogen in tobacco itself.

I am sure some of you, as we do here in New Orleans, see a rather large number of people that have a snuff cancer. Now, snuff, of course, isn't burnt at all. It is put in the mouth. The most vicious type of cancer we can get. If one finds a very small lesion, we have to do a very wide excision. That is just pure tobacco. It is not burned at all.

I think the carcinogen is in the tobacco. I don't think it is just a product of combustion.

UNIDENTIFIED VOICE: Snuff cancer is seen in the nose, as well; isn't it?

DR. ALTON OCHSNER: That is right.

DR. I. GOLDOWSKY: Thank you again. (Applause)

I am going to take the liberty at this time to take a minute or two of Dr. Ochsner's time to maybe expound a little more on the chromates as a cause of cancer of the lung.

Twenty-five years ago I was associated with the chrome industry in Jersey City, and the Mutual Chemical Company of America and its manufacturers. I wasn't long with the company when it was my unfortunate experience to run into a small epidemic of carcinoma of the lung. I started delving into the literature. About that time, about the only thing I came up with, as Dr. Ochsner has told you, was in Germany it was compensable.

We had three problems which I had to face as a physician with the chromates, that was the chrome sores that hit these men. The amount of chromates they used in the glass industry, they developed real chrome holes that used to look like a collar button hole. It was a fine hole, and then it would branch out into a collar button. You really had to scrape them out, dig them out, to get them cleaned up.

But, in my years with them, we never ran into any carcinoma of the skin as a result of the chrome sores. Again, we had the chrome holes in the nasal septums. It didn't take more than about four months of a man's known employment with our company before he had no septum left. That stuff is better than any ear, nose and throat man can do. It really tore a hole through them.

As far as the carcinoma of the lungs, I think to expound further, in Germany it was compensable. They found that this type of cancer produced by the monochromates was a slow-forming cancer. I think it was recognized only in the compensation cases that a man had to be employed in the Schneeberg mines at least twenty years. If they were employed two or three years, it wasn't recognized as an early form of cancer.

I don't know if that will help you in your problem. I know it is a dichromate in the chrome you are concerned with the compounds that were used. We merely have trouble as far as claims, but we are going to leave it to you lawyers to defend them.

Now, if you will just bear with me a few minutes, we are going to finish this three-day session.

Dr. Graham had to leave, but he left me a report that he had that he would like to have read:

"Mr. Chairman and Members of the Section:

"Several changes in the organizational setup of the Joint Committee on Railway Sanitation have occurred in the past year, which are reported to you as a matter of interest.

"The Joint Committee's brief summary report for the year 1957 was included as a paragraph in the Medical and Surgical Section Annual Report for the Association.

"As many of you know the Sanitation Research Committee of the A.A.R. Research Laboratory in Chicago was started in 1951 on the recommendation of the Joint Committee and placed under its jurisdiction. In December, 1957, by action of the A.A.R. Board of Directors, Mr. W. M. Keller, formerly Director of Research in the Mechanical Division of the A.A.R. was appointed to be Vice-President of Research in the Operations and Maintenance Department of the A.A.R. and to have supervision of research in that department, including the office of Sanitation, Research and Development.

"The Joint Committee and be called on sanitation research

"It is contemplated to exhibit an international and work jointly with

"R. M. Graham Sanitation."

I don't have a quorum ing.

Do we have any unfinished

DR. C. F. HOLTON: et cetera.

... The motion was

DR. I. GOLDOWSKY: the hotel that helped us

Is there any motion for

... The motion was adjourned. ...

DR. I. GOLDOWSKY: Eighth Annual Meeting adjourned.

While I have a little to 'til we meet next year."

... Whereupon, the meeting

"The Joint Committee will continue to report to Vice-President May and be called on to offer suggestions to Mr. Keller on the problems of sanitation research.

"It is contemplated that the Medical and Surgical Section will continue to exhibit an interest in matters relating to railroad sanitation problems and work jointly with the United States Public Health Service."

"R. M. Graham, Chairman, A.A.R. Joint Committee on Railway Sanitation."

I don't have a quorum present. I don't even know if I can close this meeting.

Do we have any unfinished business? Is there any new business?

DR. C. F. HOLTON: I move the necessary thanks be extended to the hotel, et cetera.

... The motion was duly seconded. ...

DR. I. GOLDOWSKY: Moved and seconded everybody be thanked around the hotel that helped us.

Is there any motion for adjournment?

... The motion was made and duly seconded that the meeting be adjourned. ...

DR. I. GOLDOWSKY: It has been moved and seconded that the Thirty-Eighth Annual Meeting of the Medical-Surgical Section of the A.A.R. be adjourned.

While I have a little speaking voice left, I hereby say "goodbye, God speed 'til we meet next year."

... Whereupon, the meeting was then adjourned. ...

**OFFICERS AND PERSONNEL OF COMMITTEES OF THE
MEDICAL AND SURGICAL SECTION FOR THE YEAR 1958-1959**

Dr. B. W. Stockwell, Chairman
Dr. J. K. Stack, Vice-Chairman
F. J. Parker, Secretary

Committee of Direction

Dr. B. W. Stockwell, Chairman
Dr. J. K. Stack, Vice-Chairman

(Term expires in 1959)

- Dr. M. B. Clayton, Chief Surgeon, Southern Railway System, 15th and K Streets, N. W., Washington, D. C.
- Dr. K. E. Dowd, Chief Medical Officer, Canadian National Railways, Montreal, Que., Canada.
- Dr. V. W. Hollo, Chief Surgeon, St. Louis-San Francisco Railway, St. Louis, Missouri.
- Dr. J. Huber Wagner, Chief Surgeon, Bessemer & Lake Erie Railroad, 525 William Penn Place, Pittsburgh, Pennsylvania.

(Term expires in 1960)

- Dr. R. J. Bennett, Chief Surgeon, Elgin, Joliet and Eastern Railway, 208 South LaSalle St., Chicago, Illinois.
- Dr. I. Goldowsky, Medical Director, Central Railroad Company of New Jersey, Jersey City, New Jersey.
- Dr. W. E. Mishler, Chief Surgeon, Erie Railroad, 608 Republic Building, Cleveland 15, Ohio.
- Dr. B. W. Stockwell, Chief Surgeon, Detroit and Toledo Shore Line Railroad, 3919 John R. Street, Detroit 1, Michigan.

(Term expires in 1961)

- Dr. R. M. Graham, Director, Department of Medicine and Sanitation, The Pullman Company, 165 North Canal Street, Chicago 6, Illinois.
- Dr. Southgate Leigh, Jr., Chief Surgeon, Seaboard Air Line Railroad, P. O. Box 1620, Richmond 13, Virginia.
- Dr. Harvey Nelson, Chief Surgeon, Soo Line Railroad, 1453 Medical Arts Building, Minneapolis 2, Minnesota.
- Dr. J. K. Stack, Chief Surgeon, Chicago and North Western Railway, 127 North Clinton Street, Chicago 6, Illinois.

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- Dr. R. A. Johnson, Medical Director, New York Central System, Michigan Central Depot, Detroit 16, Michigan.

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- Dr. Harvey Nelson, Chief Surgeon, Building, Minneapolis 2, Minnesota.
- Dr. G. Earle Wight, Chief Surgeon, Windsor Station, Windsor, Ontario, Canada.

- Dr. Southgate Leigh, Chief Surgeon, Railroad, P. O. Box 1620, Richmond 13, Virginia.
- Dr. R. G. Carothers, Chief Surgeon, Railway, Cincinnati, Ohio.
- Dr. Duncan Eve, Chief Surgeon, 2001 Hayes Street, Chicago 15, Illinois.
- Dr. J. R. Gandy, Chief Surgeon, Texas.
- Dr. C. F. Holton, Chief Surgeon, Georgia.
- Dr. R. Householder, Chief Surgeon, Railroad, Union Station, Cleveland 15, Ohio.
- Dr. W. E. Mishler, Chief Surgeon, Cleveland 15, Ohio.

Committee on De

- Dr. W. J. Longeway, Chief Surgeon, way, 520 Metropolitan Building, Huntington, West Virginia.
- Dr. J. J. Brandabur, Chief Surgeon, Huntington, West Virginia.
- Dr. B. I. Derauf, Chief Surgeon, Minnesota.
- Dr. J. R. Knowles, Chief Surgeon, Massachusetts.
- Dr. J. M. L. Jensen, Chief Surgeon, Chicago, Illinois.
- Dr. R. S. Westline, Chief Surgeon, West 63rd Street, Chicago 15, Illinois.

Committee on

- Dr. R. M. Graham (Chairman), The Pullman Company, 165 North Canal Street, Chicago 6, Illinois.
- Dr. M. B. Clayton, Chief Surgeon, 15th and K Streets, N. W., Washington, D. C.
- Dr. K. E. Dowd, Chief Surgeon, Montreal, Quebec, Canada.
- Dr. E. C. Olson (Chairman), Stony Island Avenue, Chicago 15, Illinois.
- Dr. K. E. Dowd, Chief Surgeon, Montreal, Quebec, Canada.
- Dr. V. W. Hollo, Chief Surgeon, Missouri.

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YEAR 1958-1959

- Dr. R. S. Kieffer, Chief Surgeon, Missouri-Kansas-Texas Railroad, St. Louis 1, Missouri.
Dr. Harvey Nelson, Chief Surgeon, Soo Line Railroad, 1453 Medical Arts Building, Minneapolis 2, Minnesota.
Dr. G. Earle Wight, Chief of Medical Services, Canadian Pacific Railway, Windsor Station, Montreal, Que., Canada.

Committee on Trauma

- Dr. Southgate Leigh, Jr. (Chairman), Chief Surgeon, Seaboard Air Line Railroad, P. O. Box 1620, Richmond 13, Virginia.
Dr. R. G. Carothers, Chief Suregon, Cincinnati, New Orleans & Texas Pacific Railway, Cincinnati 2, Ohio.
Dr. Duncan Eve, Chief Surgeon, Nashville, Chattanooga & St. Louis Railway, 2001 Hayes Street, Nashville 4, Tennessee.
Dr. J. R. Gandy, Chief Surgeon, Texas & New Orleans Railroad, Houston 1, Texas.
Dr. C. F. Holton, Chief Surgeon, Central of Georgia Railway, Savannah, Georgia.
Dr. R. Householder, Chief Surgeon, Chicago, Milwaukee, St. Paul & Pacific Railroad, Union Station, Chicago 6, Illinois.
Dr. W. E. Mishler, Chief Surgeon, Erie Railroad, 608 Republic Building, Cleveland 15, Ohio.

Committee on Developments Resulting from Physical Examinations

- Dr. W. J. Longeway (Chairman), Chief Surgeon, Colorado & Southern Railway, 520 Metropolitan Building, Denver, Colorado.
Dr. J. J. Brandabur, Chief Medical Examiner, Chesapeake & Ohio Railway, Huntington, West Virginia.
Dr. B. I. Derauf, Chief Surgeon, Northern Pacific Railway, St. Paul 1, Minnesota.
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Dr. J. M. L. Jensen, Chief Surgeon, Chicago, Rock Island & Pacific Railroad, Chicago, Illinois.
Dr. R. S. Westline, Chief Surgeon, Chicago & Eastern Illinois Railroad, 334 West 63rd Street, Chicago, Illinois.

Committee on Medical Aspects of Air Conditioning of Cars

- Dr. R. M. Graham (Chairman), Director, Department of Medicine and Sanitation, The Pullman Company, 165 North Canal Street, Chicago 6, Illinois.
Dr. M. B. Clayton, Chief Surgeon, Southern Railway System, 15th and K. Streets, N. W., Washington 13, D. C.
Dr. K. E. Dowd, Chief Medical Officer, Canadian National Railways, Montreal, Que., Canada.

Committee on First Aid

- Dr. E. C. Olson (Chairman), Chief Surgeon, Illinois Central Railroad, 5800 Stony Island Avenue, Chicago, Illinois.
Dr. K. E. Dowd, Chief Medical Officer, Canadian National Railways, Montreal, Que., Canada.
Dr. V. W. Hollo, Chief Surgeon, St. Louis-San Francisco Railway, St. Louis, Missouri.

**Representatives of the Medical and Surgical Section
on the Joint Committee on Railway Sanitation**

- Dr. R. M. Graham (Chairman, Joint Committee on Railway Sanitation),
Director, Department of Medicine and Sanitation, The Pullman Com-
pany, 165 North Canal Street, Chicago, Illinois.
- Dr. M. B. Clayton, Chief Surgeon, Southern Railway System, 15th and K.
Streets, N. W., Washington 13, D. C.
- Dr. A. M. W. Hursh, Medical Director, Pennsylvania Railroad, 15 North
32nd Street, Philadelphia 4, Pennsylvania.

**Representatives of the Medical and Surgical Section
on the Special Medical-Legal Research Committee**

- Dr. W. E. Mishler (Chairman), Chief Surgeon, Erie Railroad, 608 Republic
Building, Cleveland 15, Ohio.
- Dr. R. J. Bennett, Chief Surgeon, Elgin, Joliet and Eastern Railway, 208
South LaSalle Street, Chicago, Illinois.
- Dr. I. Goldowsky, Medical Director, Central Railroad of New Jersey,
Jersey City, New Jersey.
- Dr. Harvey Nelson, Chief Surgeon, Soo Line Railroad, 1453 Medical Arts
Building, Minneapolis 2, Minnesota.