

PROCEEDINGS

OF THE

FIFTEENTH ANNUAL MEETING

OF THE

Association of American Railroads

MEDICAL AND SURGICAL SECTION



HELD AT

CHALFONTE—HADDON HALL, ATLANTIC CITY, N. J.

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INDEX

	Page
Association of American Railroads.....	6
Board of Directors.....	6
Operations and Maintenance Department.....	6
Operating Division: officers.....	6
Officers.....	6
Ballot for officers, committee of direction and committee on nominations.....	45-46
Bartle, Harvey: introducing Dean Lewis.....	60
Suggesting vote of thanks to retiring chairman.....	114
Campoe J., F. J.: letter from.....	113
Cardiac hazard and the railroad: paper by Frederick A. Willis.....	19-28
Committee (special) on medical aspects of air conditioning of cars.....	8
Report of.....	97
Discussion.....	98-112
Committee on developments resulting from periodic physical examinations.....	8
Report of.....	62-68
Discussion on.....	69
Committee of direction.....	6
Report of.....	49-50
Discussion on.....	50-51
Committee on disability and rehabilitation.....	7
Report of.....	86-94
Discussion on.....	94-97
Committee on fractures.....	7
Report of.....	29-37
Discussion on.....	39-43
Committee on nominations.....	7
Report of.....	44-47
Crowder, T. R.: presenting report of committee on medical aspects of air conditioning of cars.....	96-112
Downes, J. R.: letter from.....	15
Election of officers; members of committee of direction and committee on nominations.....	44
Result of.....	113
Fractures: paper by Dean Lewis.....	69-80
Frost, J. G.: discussion on report of committee on fractures.....	40-41
Presenting report of committee on nominations.....	44
Discussion on report of committee on medical aspects of air conditioning of cars.....	110
Fulton, W. S.: informal talk.....	51
Garner, J. R.: discussion on report of committee on fractures.....	41-42
Remarks as incoming chairman.....	113-114
Glormley, J. W.: presenting tellers report of election.....	113
Herold, Arthur A.: remarks concerning reciprocal transportation for railroad surgeons.....	115
Huono, Arthur M.: telegram from.....	52
Lancaster, W. J.: letter from.....	112
Leigh, Southgate: presenting resolution.....	84
Lewis, Dean: paper on fractures.....	69-80
Mayo, Charles: informal remarks.....	84-85
Mayo, W. J.: informal remarks.....	80-84
McCombe, John: remarks in connection with vote of thanks to retiring chairman.....	114-115

Index—Continued

	Page
Medical and Surgical Section.....	6
Officers.....	6-8
Personnel of committees.....	9-11
Regulations.....	12-14
Representatives attending annual meeting.....	94-95
Metz, A. R.: presenting report of committee on disability and rehabilitation.....	52
Milholland, E. V.: introducing Rear Admiral P. S. Roeseiter.....	111
Discussion on report of committee on medical aspects of air conditioning of cars.....	43-44
Morse, R. C.: letter from.....	27
Neupauer, Adolph: discussion on paper on cardiac hazard and the railroad.....	15-18
Nilson, John R.: opening remarks as chairman.....	80
Introducing W. J. Mayo.....	84
Introducing Charles Mayo.....	42
Remarks on report of committee on fractures.....	110-111
Physical standards: suggested changes.....	49-50
Plummer, S. C.: discussion on report of committee on fractures.....	39-40
Introducing J. E. Pulver.....	51
Discussion on report of committee on medical aspects of air conditioning of cars.....	110
Roeseiter, Rear Admiral, P. S.: paper on similarity of surgery problems in the navy and in railway surgery.....	53-61
Similarity of surgical problems in the navy and in railway surgery: paper by Rear Admiral P. S. Roeseiter.....	53-61
Warring, F. C.: discussion on report of committee on disability and rehabilitation.....	96
Welb, Roscoe C.: presenting report of committee on fractures.....	23, 42-43, 48
Discussion on report of committee on disability and rehabilitation.....	97
Weil, G. C.: discussion on report of committee on fractures.....	41
Willius, Frederick A.: paper on cardiac hazard and the railroad.....	19-28
Woolley, R. A.: discussion on report of committee on fractures.....	51
Taylor, S. B.: discussion on report of committee on fractures.....	42

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Dr. G. G. Dowdall, Chief Surgeon, Illinois Central System, Chicago, Ill.

Dr. R. A. Woolsey, Chief Surgeon, St. Louis-San Francisco Ry., St. Louis, Mo.

Representative from Committee of Direction

Dr. E. V. Millholland, Med. & Surg. Dir., Baltimore & Ohio R. R., Baltimore, Md.

DIVISION I—OPERATING**MEDICAL AND SURGICAL SECTION****REGULATIONS****Representatives**

1. Representatives of members or associate members shall be Chief Surgeons or other officials engaged in a similar capacity. They shall be officially designated by the members or associate members they represent.
2. Affiliated members may be appointed by the Committee of Direction.

Officers

3. The officers of the Section shall be a Chairman, a First Vice-Chairman and a Second Vice-Chairman.

Committee of Direction

4. There shall be a Committee of Direction which shall consist of 10 representatives of members or associate members within the Section, including the Chairman, the First Vice-Chairman and Second Vice-Chairman of the Section, the past Chairman last holding office and 6 other representatives of members. The Committee shall, in addition, include in its membership 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.
5. The Committee of Direction shall conduct the business of the Section, authorize, order, define duties, determine the number of and appoint members of such committees that may be necessary to properly conduct the work of the Section.

6. Regular meetings of the Committee of Direction shall be held semi-annually, the date and place to be decided by the Chairman. Special meetings of the Committee may be held at the call of the Chairman.

7. The Chairman of the Section shall, act as the Chairman of the Committee of Direction. In the absence of the Chairman his duties shall devolve upon the First Vice-Chairman. In the absence of both the Chairman and the First Vice-Chairman, the Second Vice-Chairman shall preside. Should the Chairman and both Vice-Chairmen be absent the members shall elect a Chairman pro tem.

Committee on Nominations

8. There shall be a Committee on Nominations to consist of five representatives of members or associate members not officers of the Section.
9. As candidates for the Committee on Nominations, the Committee of Direction shall select the names of ten representatives, five of whom shall be

Having a means of expressing percentage efficiency for macular perception, it is necessary to define limits of disability. For entrance into service in all classes, the applicant should present 100% C.V.P. (Central Visual Perception) in each eye, tested separately, without glasses. After acceptance in service, acuteness of vision should be tested at regular intervals. As regards employees in service, to determine defects of visual acuity and to establish rehabilitation in cases where such defects exist requires classification of various occupations and definition of the percentage limits for each. These limits are best ascertained by the Individual Chief Medical Officer. Only general limitations are recommended in this presentation. Employees in engine and train crews, eligible for promotion, should present 91.4% C.V.P., or better, in each eye, with or without glasses. For re-examination, the same group of employees only need evidence a C.V.P. of 83.6%, or better, in each eye, with or without glasses. If at any time such employee's C.V.P. tests 76.5% or lower in either eye, with or without glasses, he should be excluded from active train service and be rehabilitated in some occupation in which visual requirement is less exacting. Employees in other branches of service should show at least 58.5% C.V.P., or better, each eye tested separately, with or without glasses. Below this figure the employee should be excluded entirely from any service concerned with the active operation of trains and be assigned to an occupation where visual acuity is not an important factor. This assumes, of course, that the employee is wearing, at the time of examination, glasses that correct any refractive error he may have. If there is any doubt that his present lenses are satisfactory, he should be re-examined after having new glasses prescribed by an ophthalmologist.

Color perception can be examined by any of the devices marketed by reliable supply houses. Of these the Ishihara test for color blindness, based on the principle of figures traced in dots on contrasting colors, permits a quick, easy and satisfactory test of color vision. Even illiterates can trace the figures, and malingering is next to impossible in this method. Color blindness is of two types—Complete and Partial (Red, Green and Blue). Either type constitutes a disability that necessitates removal of the employee from active train service, or any other occupation where color perception must be unimpaired. It should be borne in mind that color blindness can be acquired as well as congenital and for this reason it is just as important in re-examinations to test the color sense as to test the visual acuity.

There are two other defects for which we must constantly be on the alert, which may be overlooked in examining only for acuity and color perception. These are (1) limitation of extraocular movements, and (2) reduction of the size of the field of vision. Gross tests, using the fingers, give hint to any impairment and this can be confirmed by an experienced ophthalmologist. His recommendation should be considered in those instances where there is a question as to the fitness of an employee for his occupation.

Eye Changes in Diabetes

Visual disturbances are rarely found in diabetes insipidus and in most instances are associated with the cerebral complications of this disease, although

several cases of cataract, retinitis, paralysis of the external rectus muscle have been reported.

In diabetes mellitus inflammation of the cornea, iritis, cataract, retinitis, optic neuritis and optic atrophy, especially retinitis, are not uncommon. Accommodative and refractive changes are of frequent occurrence. Retro-bulbar optic neuritis is often noted in those having diabetes who also use much alcohol and tobacco. In diabetic coma, the eyeball may be soft and if so is usually a sign of a bad prognosis.

Pneumoconiosis

Bernardo Romazzini in 1717 published a classical book on Occupational Diseases and brought out in detail, that pulmonary disorders were especially prevalent in employees engaged in dusty occupations. These conditions are present or being brought more and more to the attention of the industrial surgeon for systematic studies.

Pneumoconiosis (pneumon—lung; konis—dust) is a condition that may be caused by any kind of dust entering the lung; but we as railroad surgeons are undoubtedly more interested in silicosis and asbestosis than in the other types. Silicosis is caused by breathing free silica into the lungs, asbestosis is caused by breathing fine fibres of asbestos which consists of magnesium calcium silicate. Asbestosis is not a common condition but it causes extensive pulmonary fibrosis and takes on a more rapid course than does silicosis. Anthracosis, which is due to coal dust, and siderosis, due to iron dust, are not as serious in causing complications as the other two just mentioned. These fine dust particles which produce these irritative lung conditions are very minute and microscopic in size.

Silicosis, the most common dust disease and which is brought to the attention of the railroad surgeon the most frequently, in general develops very slowly. However, this disease takes from ten to twelve years before the changes in the lung are sufficient to produce clinical findings. The most severe types are found in cases after exposure of from 32 to 42 years. There are, however, cases called "Acute Silicosis" that have been known to develop after exposure of from four months to two years. The acute cases are found in individuals that are exposed to air containing silica which is mixed with free alkali as is found in powder plants where scouring powder is manufactured.

It should be understood that silica is found in the normal lung, but excessive amounts of silica produce connective tissue and this predisposes the individual to tuberculosis. There are many cases of tuberculosis that are not associated with silicosis but are diagnosed as silicosis. This is the milky type of tuberculosis.

According to McNally, the silicon dioxide content of the normal dried lung tissue averages 1.13 mg. per gm. Any lung containing over 2 mgs. of silicon dioxide per gm. of dried lung tissue indicates undue exposure to a dusty atmosphere. Assuming that these findings are true, the decision of whether silicosis is present or not must be made by the pathologist and not left to the

chemist since the anatomical changes of silicosis are characteristic of the disease and only the anatomical changes determine disability and death.

The clinical picture of the patient, with shortness of breath, must always be considered seriously. The X-ray findings, although very difficult to diagnose accurately, are of great benefit. The history of the patient is probably of the most importance in making an early diagnosis. In dealing with employees on entrance to service our suggestions would be:

- (1) For the physician to take a complete history and make a careful physical examination.
- (2) To take an X-ray film of the chest for lung tissue for diagnosis and future record.

In old employees with a history of working in dust and having the classical clinical symptoms we suggest:

- (1) To make a change in his occupation.
- (2) To take an X-ray of his chest for lung tissue.

In the way of prevention it becomes necessary

- (1) To educate all concerned.
- (2) Get rid of dust.
- (3) Sprinkle the working area with water.
- (4) Have employees wear inhalers.
- (5) Have frequent analyses made of the dust content of the air at different times during the working hours.

Amoebic Dysentery

The subject of Amoebic Dysentery has been previously covered quite thoroughly by this Section. We still recommend the maintenance of meticulous care in the preparations of all foods and strict adherence of the previous instructions to dining car employees. We further recommend in the treatment the use of Chipparo Amargosa (bitter root), a preparation that can be taken both by mouth and by enema. This preparation is non-toxic and can be given in large doses without any toxic effects. Further, this preparation is very efficacious in any type of dysentery. The fluid extract can be obtained from Eli Lilly and Company or Sharpe & Dohme. In some instances the infusion made by boiling the actual Chipparo Amargosa (bitter roots) have given by far the best results.

If results are not satisfactorily obtained by the administration of the fluid extract we advise the use of the infusion. The actual Chipparo Amargosa (bitter roots) can be obtained usually through any large drug concern.

By using either the fluid extract or infusion we overcome the extreme hazard of probably producing a permanent neuritis that so often follows the administration of arsenical preparations. When this does happen many times the neuritis proves to be worse than the amoebic dysentery.

Pain in the Back

"Pain in the back" in its various anatomical locations not associated with recent trauma or vertebral fracture or dislocation is one of the "worries" that has become a classic to the industrial surgeon. Under so many conditions, the exact cause is so difficult to determine and discouragement is so often encountered that untiring effort must be put forth to arrive at a correct diagnosis, when possible. Although all our diagnostic means, as laboratory tests, X-rays and physical findings, be carried out we must still admit we are at a loss to account for this pain in a vast number of cases.

Probably the most difficult and most frequent of the many pathological conditions or anatomical anomalies causing this pain is arthritis, especially of the proliferative type. The foci of infection are so hard to find and many not be found until great permanent damage has already been done. The small embedded tonsil with the scarlet red line on the margin of the anterior pillar is very characteristic of a diseased tonsil which, in many cases, is the cause of severe arthritis. The tonsil is usually so small in these types of cases that their importance is easily overlooked and unappreciated as the direct cause of this condition. It is advisable to remove the tonsils in all forms of arthritis.

Influenza is also another type of infection that on many occasions leaves its bad after effects in the back, especially in the sacro-iliac region. These different types of infection many times produce osteophytes in the vertebral articular cartilages that cannot be determined by means of X-ray of other means but are present, causing aggravating symptoms. Low grade meningitis and tuberculous are also types of infection producing back pain. In all cases of pain in the back, the teeth, tonsils, sinuses, chest and gastro-intestinal examinations and studies must be carefully made.

Spondylolisthesis (or sub-luxation) is a much more common condition than was formerly suspected. The weight bearing direction of the body being thrown out of its proper alignment, stretching the ligament attachment of the bodies of the vertebrae, causing severe back pain.

Curvature of the spine due either to postural or by absorption as in tuberculosis also causes pain in the back.

In spondylolisthesis there occurs the depression over the area of the fifth lumbar vertebra, the shortened torso and broadened pelvis. Flexion of the spine is limited, especially in the forward excursion. A lateral Roentgenogram with the ilium slightly angled is essential to make the diagnosis. Care must be taken to throw the ilium out of the direct line or the shadow made by the heavy crest may be so great that the X-ray film may be wrongly interpreted and the Roentgenologist thereby confused in making a correct diagnosis in spondylolisthesis.

Lumbo-sacral neuritis, lumbar muscular spasm, are also quite common conditions one might encounter. Anomalies are quite prone to cause pain, as cervical rib, sixth lumbar vertebrae, thereby increasing the distance between the thorax and pelvis, making a natural weakness. Spinous processes of the lumbar vertebrae being too short for proper muscular attachment of the