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ADDRESSES.

EMPHYEMA IN CAMP GEORGE H. THOMAS.

Annual Address delivered before the Pittsburg Academy of
Medicine, Dec. 2, 1898.

BY N. SENN, M.D., PH.D., LL.D.

Professor of Surgery in Rush Medical College, in Affiliation with the
University of Chicago; Late Lieutenant-Colonel U. S. V., Chief of
the Operating Staff with the Army in the Field.
CHICAGO.

The short, decisive campaign with Spain just ended was characterized, from a medical standpoint, by the smallness of the number of those killed in the field, the prevalence of disease and the large number of deaths from this source. The brilliant victories on land and sea which forced Spain to sue for peace have cost us so far over three thousand lives—less than three hundred from the effects of bullets and over two thousand nine hundred from disease. The number of deaths from disease will be increased materially, as the different military hospitals at home and abroad still contain a large number of our sick, many of whom will succumb to the diseases contracted during the campaign. Even in case the hostilities are not renewed, it is impossible to predict the total loss of life at the present time, to say nothing of the thousands who will never recover the health they brought into the service. The unusual amount of sickness which prevailed among our troops, in our home camps and at the seat of war, can be attributed to various causes. The call to arms came at a time of the year when bronchial affections, pneumonia, pleuritis and rheumatism are prevalent. In the State camp of the Illinois troops cerebro-spinal meningitis made its appearance during the first days of their encampment. Typhoid fever had its origin in our State camps and followed our army to the National camps and to the seat of war in Cuba and Porto Rico. The accumulation of large armies and the prolonged encampments in localities which lacked a system of sewerage, could not fail in promoting the local spread of infectious disease. The invasion of Cuba occurred during the rainy season, which had a deleterious effect on the health of the unacclimated troops, rendering them more susceptible to the effects of the semitropical climate and the prevailing diseases. The transportation facilities for the unloading of the transports were utterly defective in furnishing the invading army at the proper time with the necessary supplies. The clothing of our troops was not adapted for the Cuban climate. And, lastly, the necessary precautions to protect the troops against yellow fever, which is always found on the Cuban coast, where the landing was effected, were not carried into effect. The commanding general had been fully advised by the Chief Surgeon of the Army in the Field, but the instructions were ignored in the haste and tumult of the brief campaign. A lack of a good knowledge of sanitation

on the part of many of the medical officers, and especially the inadequate policing of the camps, had their influence in promoting the local spread of disease. Amebic dysentery and malaria, the two tropical diseases to which our troops were exposed in the southern camps and in Cuba and Porto Rico,^{*} figured largely in the sick and mortality reports. The prevention of these diseases was beyond the control of the medical department. The ordinary camp diarrhea, from which almost every participant of the war suffered to a greater or lesser extent, I am satisfied, did much to increase the receptivity of our soldiers to typhoid fever infection.

Another matter of the greatest importance concerning the health of our troops was the regulation government ration. The food selected and furnished for the army in Cuba and Porto Rico was the same as that which had been used in the North. Every one who served at the front for any length of time must be convinced that the emaciated, starved condition of our soldiers who returned from Cuba, and who escaped disease, was largely due to the nature of the food upon which they had to subsist. The purchase of food at the seat of war was out of question. Investigation will undoubtedly prove that many of the canned meats did not contain the amount of nutriment claimed for them. Fresh meat and black bread furnished the continental armies are not only more palatable, but also more nutritious than the canned meats and hard-tack furnished our army. A careful inquiry into the kind of food our occupation armies should be furnished, is one of the most important duties of those who are in charge of the commissary department. Another subject of special importance is the special diet for the sick.

It is to be hoped that the medical department will be consulted concerning these matters, and that the recommendations made will receive the well-merited attention of the military authorities. During my service, I met one of our soldiers who served under General Gordon in his advance on Khartoum, who informed me that during that campaign the British troops were supplied, on the whole, with much better food than was the case in Cuba. England has benefited by long experience how to conduct a campaign in a tropical climate; we are novices in this kind of warfare, but have learned enough during the last six months to enable us to take better care of our troops, should we again be called upon to conduct a war beyond the limits of our country.

I have deemed it appropriate and advisable, in accepting your kind invitation to deliver the address at this annual meeting, to discuss briefly and from the most practical standpoint, a surgical affection which I had an opportunity to study in a most satisfactory manner during my service at Chickamauga. It is my purpose to occupy my allotted time by relating my experience with empyema in Camp George.

H. Thomas. I was on duty as chief surgeon in that camp for nearly four weeks during the months of May and June. During that time the camp was occupied by nearly 40,000 men, representing nearly all of the States east of the Rocky Mountains. With the exception of one company of cavalry on guard duty, the army was composed entirely of volunteers. The days were hot, the nights cool; the midday temperature frequently reached 98 to 100 degrees F. The drouth which prevailed at that time rendered the roads dusty, the clouds of dust being only settled occasionally by showers of short duration. Camp diarrhea, dysentery, cerebro-spinal meningitis, pneumonia and typhoid fever were then the principal diseases we had to contend with.

It is one of the complications of pneumonia—empyema—as observed in Camp George H. Thomas, that I desire to discuss this evening. Empyema represents the pathologic product of suppurative pleuritis. Suppurative pleuritis is always the result of a pyogenic infection of the pleura sufficient in virulence to give rise to pus formation. In the absence of traumatic causes it appears clinically and pathologically either as an isolated inflammation of the pleura or as a more or less remote complication of pneumonia. Bacteriologically speaking, suppurative pleuritis can only result from the presence in and the specific action upon, the tissues of the pleura of pyogenic microbes in sufficient number and virulence to give rise to a suppurative inflammation.

Non-traumatic, suppurative pleuritis is a comparatively rare, isolated affection; in the great majority of cases it presents itself as a complication of pneumonia. Recent investigations tend to prove that the essential cause of pneumonia is either Fränkel's pneumococcus, Friedlander's bacillus of pneumonia (diplo-bacillus) or the streptococcus pyogenes. Streptococcus pneumonia, occurring either as a primary or secondary affection, is characterized clinically by the gravity of the disease and pathologically by the tendency to pus formation. The microbes of pneumonia discovered and described by Fränkel and Friedlander are the bacteriologic agents usually found in the inflamed tissues in croupous pneumonia. Both these microbes possess feeble intrinsic pyogenic properties, and when, during the pneumonic process, abscess formation or suppurative pleuritis sets in, the complication occurs usually as the result of a secondary or mixed infection with pus microbes. Croupous pneumonia is a self-limited disease, and when febrile symptoms persist after a sufficient time has elapsed for the disease to complete its typic cycle, it is usually an indication that mixed infection has occurred, and in this event it becomes the urgent duty of the attending physician to look for, locate and determine, if possible, the nature of the complication to enable him to institute timely, appropriate therapeutic measures.

In suppurative pleuritis complicating pneumonia, the inflamed lung tissue is seldom involved in the suppurative process. Resolution may proceed in a satisfactory manner at the time and after the suppurative pleuritis has set in, a fact which would tend to prove that the parenchyma of the lung is more resistant to the action of pyogenic microbes than the tissues of the pleura, or that these microbes find their way more readily to the pleura than into the pneumonic focus after secondary infection has occurred. The complicating secondary pleuritis manifests itself

usually about the time the crisis is expected or a few days later. It is evident that suppurative complications in cases of pneumonia would be likely to appear in cases in which the tissues are rendered susceptible to the action of pus microbes and under circumstances which would supply the bacteria for the secondary, mixed infection.

Both these conditions were present and operative in Camp George H. Thomas. The health of many of the men encamped at Chickamauga was impaired soon after reaching camp by the sudden climatic changes, change of food, malaria and camp diarrhea. Nearly all cases of pneumonia were characterized by the gravity of the symptoms and a tardiness with which resolution occurred. Camp Thomas was located on the government reservation ten miles south of Chattanooga. The ground is undulating and in part well wooded. Numerous clearings and open spaces furnished excellent facilities for the drilling and maneuvering of the troops. The National Park is traversed by a sluggish stream, the Chickamauga. Three regiments of cavalry and a number of batteries were in camp during the month of June, the time the five cases of pneumonia complicated by empyema came under my observation. The ground is intersected by numerous roads which during the season of drouth which prevailed at that time, became covered with inches of fine dust, which by driving of innumerable vehicles of all kinds, the marching of troops, the passage of cavalry and artillery would rise in dense clouds and by sudden gusts of wind would often cover the entire camp. This dust was contaminated by pathogenic microbes of all kinds, which could not fail in finding their way into the air-passages of the occupants of the camp. The dust was most abundant near the roads on which there was the most travel, that is, near headquarters.

It was not strange that most of the cases of pneumonia originated in localities where the dust clouds were densest, filling the tents and kitchens and covering the food supplies. The dust had undoubtedly some influence in the causation of pneumonia, and more particularly in determining the frequency with which it was attended or followed by suppurative pleuritis.

Many of the soldiers left their State camps affected by bronchial catarrh, which constituted a potent predisposing cause to pneumonia. This was particularly true of some of the regiments from Illinois. Naturally the first regiments arriving at Camp Thomas were quartered near the great thoroughfares of travel and those arriving later in more remote parts of the camp. It is a noteworthy fact that those regiments farthest away from headquarters were almost free from pneumonia, while those nearest the center of travel furnished the largest number of cases. The cool nights, the lying on the moist ground and the inadequate supply of blankets did their share in serving as potent exciting causes. Some definite information in reference to the distribution of the disease can be gained by considering the location of the division hospitals, and the number of cases of pneumonia treated in each one of them. The division hospitals were located as near the center of the respective divisions as possible.

The First Division Hospital was established on the Lafayette Road, about three-quarters of a mile from the headquarters of the corps. The Second Division Hospital was established about two miles from head-

quarters and about one-quarter of a mile from any principal thoroughfare, the Brotherton Road being the nearest one. But few of the regiments of this division were encamped on roads subject to much travel.

The Third Division Hospital was located at the junction of the Alexander's Bridge Road and the Jay's Mills Road, about two miles from headquarters. Some of the regiments of this division were quartered on roads which were used by the wagon trains hauling water, consequently frequently exposed to clouds of dust.

During the latter part of May and the month of June forty-six cases of pneumonia developed in the First Army Corps. These cases were distributed among the division hospitals as follows: Hospital at Headquarters, 4 cases; First Division Hospital, 32 cases; Third Division Hospital, 10 cases. The Second Division Hospital was not established until the middle of June, and from that time on until the end of the month not a single case of pneumonia was reported. Careful inquiry at the regimental hospitals failed in finding a case previous to the establish-

ment of the division hospital. Five of these cases were operated upon by myself: four at the St. Vincent's Hospital and one at the Leiter Hospital. The following case represents the pathologic conditions found in these cases as well as the surgical treatment which was resorted to in meeting the indications of the empyemic complication:

W. F., private, Third Ills. Vols., was taken suddenly ill while on drill, May 30. The attack was initiated by nausea, vomiting, dizziness and a sense of great prostration. On the following day severe diarrhea set in, which, in connection with persistent vomiting and intense headache, influenced his physician to transfer him to the division hospital. At that time physical examination revealed a well-marked bronchitis. In the evening he had a decided chill; temperature 103.

June 1 he complained of severe pains in his chest and back, cough dry and hacking, sputum tinged a rusty color. Diarrhea continues; slight delirium; temperature 99 in the morning, 103 in the evening.

June 2. Chest pains not relieved, sputum more deeply tinged. Temperature varies from 101.5 to 103.

June 3. Diarrhea under control; cough and expectoration unchanged; delirium and temperature about the same.

June 4. No material change in the condition of the patient; tongue dry and dark brown.

Daily examinations of the chest did not reveal any signs of

Record of variations of temperature beginning May 31, 1898, at Leiter Hospital.

ment of the division hospital. This was the division encamped almost entirely away from any of the principal roads, hence least subjected to dust-infection. It will be noticed that 32 cases, or nearly 70 per cent. of the entire number, occurred in the First Division regiments. Out of these forty-six cases six died, or a mortality of 13 per cent. The six fatal cases came from the First Division. In three of these fatal cases death was caused by the progressive extension of the septic pneumonia, and in the remaining three death was caused by complications. In one case death was attributed to a typhoid condition; in two to cerebrospinal meningitis. The septic nature of the cases of pneumonia which developed in the First Division is best shown by the frequency with which empyema attended or followed the pulmonary disease. In this division empyema complicated the pneumonia in nine out of the entire number of thirty-two cases, equal to 28 per cent. Four of these cases were treated at the Leiter Hospital and four at the St. Vincent's Hospi-

tal, Chattanooga. Five of these cases were operated upon by myself: four at the St. Vincent's Hospital and one at the Leiter Hospital. The following case represents the pathologic conditions found in these cases as well as the surgical treatment which was resorted to in meeting the indications of the empyemic complication:

June 7. Patient delirious most of the time; cough harassing, and copious expectoration of rusty sputum. Temperature rose rather suddenly to 105.

June 8. Cough less troublesome, sputum more scanty; subjective symptoms improved. Patient was transferred to the Leiter General Hospital, when on his arrival the temperature was found to be 102.4. The medication at this time consisted of strychnia in small doses, muriate of ammonia 5 grains every four hours, alternated with 3 drops of turpentine. Under this treatment the temperature was reduced $1\frac{1}{2}$ degrees during the first day, 2 degrees the second, and $1\frac{1}{2}$ degrees the third day, becoming normal June 11. Carbonate of ammonia was substituted for the muriate at this time.

From June 12 to 18 the temperature ranged one degree above and below normal. The pulse, which had been 118 beats per minute and feeble on his admission to the Leiter Hospital, became fuller and stronger and diminished in frequency to 80.

June 19. Temperature suddenly rose in the afternoon to 102, pulse 96.

June 20. Examination of chest showed absolute dullness on the right side, extending as high as the fourth rib. The appearance of fever after a few days of complete defervescence

and the rapid increase of the area of dulness, displacement of the apex-beat to the right, as well as a marked bulging of the lower intercostal spaces, left no doubt of the existence of empyema. The symptoms indicating the presence of this complication were so evident that it was not deemed necessary to resort to an exploratory puncture to verify the diagnosis.

In all of the cases of pneumonia complicated by empyema that came under my personal observation, the disease pursued a very similar course to the one described. The clinical symptoms were characterized by their severity. The patient's general condition left little doubt as to the septic nature of the original disease. As in the case detailed, the suppurative pleuritis commenced two to three days after the pneumonic symptoms had subsided, its onset being announced by a rise of temperature and the appearance of local and general symptoms, suggestive of the existence of a suppurative affection.

It is more than probable that in most of these cases the pyogenic microbes, which eventually attacked the pleura and caused the suppurative process, entered the lungs at the same time and in the same manner as the microbes which caused the pneumonia. The bronchitis and diarrhea which initiated the disease were plain evidences pointing in this direction. In some of the cases in which the pneumonia pursued a more typical course, the subsequent suppurative pleuritis was caused by a secondary mixed infection. All cases of empyema which were subjected to operative treatment were characterized pathologically by the presence of an abundant fibrinous exudate, which covered both the visceral and parietal pleurae, and, in the form of large fibrinous masses, mixed with the thick cream-like pus. The purulent accumulation occurred rapidly, filling the pleural cavity in a very few days. Displacement of the heart, enlargement of the chest and bulging of the intercostal spaces were the most significant local signs indicating the presence of a large quantity of pus in the cavity of the chest. The right and the left sides were affected with about the same frequency. In one case the pleuritis was limited, leading to a circumscribed empyema in the left side. The abscess occupied the lower and posterior part of the chest. In performing the radical operation in this case, a section of the tenth rib, about three inches from the spinal end, had to be excised. The location of the empyema was determined beforehand by systematic exploratory punctures, the first two punctures yielding negative evidence. As a rule, expansion of the compressed lung followed soon after the operation, showing that resolution had occurred before or after the pleuritic complication appeared.

In some of the cases suppuration was scanty after the operation; in others it was abundant. In the former event a process of repair set in promptly; in the latter case it was retarded. The final process of obliteration of the pleural cavity was accomplished by granulation, cicatrization and cicatricial contraction. Evacuation of the pus and drainage were always followed by a fall in the temperature to normal, or nearly so, accompanied by symptoms denoting rapid improvement of the patient's general condition. In two of the cases the physicians in attendance were misled in their diagnosis by the absence of fever. The pleuritis was initiated as usual by a rise in temperature and other febrile disturbances, which subsided in a few days, the patients feeling well with the exception of the complaint of embarrassment of the respi-

ration. In one case the respiration was so much interfered with by the copious pleuritic exudate that the lips were blue and the pulse almost imperceptible—conditions which necessitated the performance of the operation without an anesthetic. We relied in this case on strychnia and whiskey to counteract the immediate effects of the operation. In the absence of such contraindications ether was used as an anesthetic, aided by the administration of some heart stimulants immediately before the administration of the anesthetic.

OPERATION FOR EMPYEMA.

The existence of an empyema in the adult is a sufficient indication for the performance of a radical operation. Puncture and removal of the pus by aspiration may succeed occasionally in mild cases of suppurative pleuritis in the case of children; seldom, if ever in the adult. Operative treatment should be instituted as soon as a diagnosis can be made. Unless the signs and symptoms are conclusive, the diagnosis should be verified and the pus accurately located by an exploratory puncture, as was done in most of the cases operated upon in Camp Thomas. Nothing is gained and much is lost by postponing surgical treatment until the accumulated pus has increased to the extent of producing serious and often irremediable compression of the lung on the affected side. The plastic exudate, which is often copious, as in all the cases forming the basis for this address, is another source of danger in case the operation is not promptly performed, as it creates conditions unfavorable to the subsequent expansion of the compressed lung and extenuates indefinitely the infection.

In view of the pathologic anatomy presented by the cases of empyema which constitute the basis for this paper, it must be admitted that the only rational treatment consists in opening the pleural cavity freely and in establishing efficient tubular drainage. Intercostal incision and drainage do not enable the surgeon to remove the large fibrinous masses which play such an important rôle in maintaining suppuration and in preventing speedy obliteration of the pleural cavity. The fibrinous exudate contains pus microbes, and unless removed at the time the operation is performed, serves as a nutrient medium for their growth and reproduction and interferes mechanically with pulmonary expansion and speedy obliteration of the pleural cavity by granulation and cicatrization. One of the important modern indications in the surgical treatment of empyema is to remove the inflammatory product as thoroughly as possible, and this can only be done after opening the cavity sufficiently to remove by mechanic measures the infected exudate. In recent cases resection of two inches of one rib at a point where drainage will be most effectual will afford sufficient room to subject the pleural cavity to a thorough removal of the inflammatory exudate. With the exception of the case of circumscribed empyema, we opened the chest in the axillary line where the ribs are nearest the skin and usually resected the seventh rib. With one exception, aspiration was performed a day or two before the operation for the purpose of securing partial pulmonary expansion before admitting air into the pleural cavity.

Preliminary aspiration is of special value in the treatment of large empyemic cavities. The surface of the entire chest was thoroughly disinfected and every care taken to carry out full aseptic precautions

during the operation. The opening of large pus cavities is attended by great responsibility, and this is more especially true in empyema, as secondary infection is liable to occur unless the operation is performed under strictest aseptic precautions. If an anesthetic is given, the greatest watchfulness is required to guard against accidents. I always prefer to perform the operation under partial anesthesia, and I am very partial to strychnia and alcohol as valuable adjuncts in minimizing its immediate and remote dangers.

I place the patient partially on the opposite side with the chest slightly raised, and the arm on the side to be operated upon raised to the side of the head for the purpose of increasing the width of the intercostal spaces. I expose the rib to be resected by a slightly curved incision with the convexity directed downward, beginning the incision at a point corresponding with the upper border of the rib, carrying it in a gentle curve to the lower border, and terminating it at the upper border at a point about four inches from where it started. By reflecting the cutaneous shallow, oval flap in an upward direction, the muscular covering of the rib is exposed. A straight incision over the center of the rib, about three inches in length, is then made down to the bone. With an elevator the periosteal envelope with the tissues attached to it is then separated, taking care to lift out from its groove the intercostal artery with the tissues to be reflected. After laying bare the rib to the extent of at least two inches, the rib is lifted forward with the elevator and excised with a strong pair of bone-cutting forceps. If the diagnosis is positive, all that remains is to make an incision with the scalpel in the center of the periosteal trough, large enough to admit the tip of the index finger.

The evacuation of the chest contents should always be done slowly; this can be done most effectually by interrupting the flow of pus from time to time by inserting the index finger into the pleural incision. After evacuation of the pus and loose shreds of fibrinous material, the pleural cavity should be carefully examined by direct inspection and digital exploration. Plastic exudates attached to either pleura must be removed as thoroughly as can be done with finger and a small gauze sponge held securely in the jaws of a pair of long, preferably slightly curved, forceps. The membranes should be removed by mopping and not by the use of sharp instruments. Scraping of the pleura with a sharp spoon is superfluous and occasionally detrimental. In acute cases I have often noticed quite free hemorrhage from the pleural surfaces even after gentle efforts to dislodge the adherent fibrinous exudate. Should troublesome hemorrhage follow the procedure, packing of the pleural cavity with one long strip of plain sterile gauze should at once be resorted to. The space below the drainage opening is packed first, and if the hemorrhage is not arrested, the balance of the cavity is packed from above downward.

Tubular drainage is the ideal method of draining a suppurating pleural cavity. I use for this purpose two fenestrated tubular drains, the size of the little finger, about four inches in length and securely fastened together with a large safety-pin. Drains have been repeatedly lost in the pleural cavity for want of resorting to this simple precaution. After inserting the tubular drain, the external wound is sutured in the usual manner. The curved incision, as described

above, not only exposes the ribs more freely than the straight incision, as usually practiced, but it is also much better adapted for prolonged drainage.

I never irrigate the pleural cavity the day the operation is performed. I do so later, provided suppuration continues. In case irrigation of the pleural cavity becomes necessary, care is necessary in the selection of the antiseptic solution; carbolic acid and corrosive sublimate in the usual strength are dangerous, and should never be used. I make use of either a saturated solution of the acetate of aluminium or Thiersch's solution. Both of these solutions are efficient as an antiseptic and non-toxic even when used in large quantities. The value of the double drain is made apparent when it becomes necessary to irrigate the pleural cavity. By placing the patient on the opposite side, the fluid which enters the chest through one tube escapes through the other as soon as the cavity is full, thus washing it out thoroughly. By placing the patient on the affected side the cavity is emptied, when the same procedure is repeated until the solution returns clear. The solution used should always be heated to blood temperature, as irrigation with a cold solution is fraught with danger.

The external dressing should consist of a thick cushion of sterile gauze and absorbent cotton to absorb the fluid as fast as it escapes, and to provide the wound with a filter to prevent post-operative infection. The best way of keeping the dressing in place and to prevent the entrance of unfiltered air into the cavity, is to substitute for the ordinary bandage the rubber webbing bandage. Change of dressing and antiseptic irrigation become necessary as often as the dressing becomes saturated. For the purpose of obviating frequent changes, the dressings should be ample.

As the cavity diminishes in size the drains are shortened from time to time, and sooner or later one of them can be dispensed with. Premature removal of the drain is often followed by relapse. Drainage must not be suspended until the surgeon can satisfy himself by careful examination that the pleural cavity has become obliterated.

Should the lung fail to expand sufficiently in the course of a few months to place the cavity in a condition for definitive healing, Schede's thoracoplastic operation is the operation of choice, as Estlander's multiple rib resection has not yielded the expected results in the practice of many operators, including my own. It is well for the surgeon to keep close watch of the size of the cavity during the after-treatment. It has always been my custom, at stated intervals, to place the patient on the opposite side, then fill the cavity with one of the antiseptic solutions used for irrigation, then evacuating the chest by reversing the position and measure the quantity of fluid removed. By recording the results of such measurements, we are in a position to judge with mathematic precision the size of the cavity, and determine whether or not healing is possible without further and more serious operative interference. Prompt and progressive improvement followed the operation in all of my cases of empyema operated upon in Camp Thomas. In most of the cases suppuration was soon under control, followed by speedy pulmonary expansion and permanent healing of the empyemic cavity by granulation. In two of the cases a recent examination made by Dr. A. F. Lemke showed that the patients recovered their former health.

Our limited means of making a satisfactory bacteriologic examination of the inflammatory product made it impossible to ascertain in each case the nature of the microbic cause of the suppurative complication. In two of the cases, inoculation of proper nutrient media resulted in an abundant growth of the staphylococcus pyogenes aureus. I have but little doubt that in most, if not in all cases, the suppurative pleuritis developed in consequence of a secondary infection with pus microbes, probably in most instances with the staphylococcus, as indicated by the clinical course of the disease and the nature of the inflammatory product. The etiologic relationship of dust to pneumonia, and especially the pleuritic complication, must be regarded as established by the facts related above.

The influence of dust in the causation of pneumonia and suppurative pleuritis acts in two ways in the causation of these diseases: 1. The mechanical irritation of the bronchial mucous membrane resulting from the presence of ordinary dust renders the epithelial layer of the bronchial mucous membrane more permeable to the entrance of pathogenic microbes. 2. Pathogenic microbes, and in this case pus microbes, are suspended in the dust and find with it entrance into the air-passages.

The importance of early radical operative intervention in the treatment of empyema can not be overestimated. The only efficient treatment in such cases consists in opening the cavity of the chest freely by rib resection, removal of inflammatory product and establishing free tubular drainage, followed by safe and efficient irrigation, should subsequent suppuration demand it.

CHAIRMAN'S ADDRESS.

Presented to the Section on Stomatology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY G. V. I. BROWN, M.D.
MILWAUKEE, WIS.

It is my pleasure, as your chairman, to give the first greeting to the Section of Stomatology of this ASSOCIATION, and also to our confrères in joint session, the Colorado dentists, among whom I trust it may be the inaugural of long and beneficial intercourse. Stomatologists in fact we have long been, I am sure, but to be so recognized by title is a long step forward in the direction toward which, from year to year, those who have carried the burden of the vast amount of work necessary to this Section have labored, and is certainly worthy of general congratulation. We no longer serve under the somewhat limited, almost ambiguous term of "oral surgeons," but are hereafter to be recognized as those having understanding of the science of the mouth, a tribute complimentary to the scientific character of papers which, published side by side in the journal of this ASSOCIATION with the essays of the most learned medical and surgical lights of the day, have gained the respect of the other branches, having given those who treat diseases of the mouth their only opportunity to exchange ideas directly with the medical world, the influence of which, in discovering to it the possibilities of applying the technique of the skilful dentist, in conjunction with a knowledge also of surgical procedure and medical science, can not be overestimated.

The address of your chairman, Dr. Andrews, last

year, in following out the idea of an anniversary celebration, has told the story of the earnest few, the authors of our being, so completely that reference to the history of the Section is unnecessary. It seems, however, that his suggestion as to the necessity for united efforts being made in the interest of sanitation, in having the mouths of school children regularly examined by regular practitioners of dentistry and, in a general way, instruction given as to the care they ought to receive, is worthy of reiteration in order that the idea may not escape entirely. An effort made in my own home during the past year to carry out the plan has not proven thus far of any practical value, but constant agitation and repeated effort will undoubtedly accomplish much that is at first apparently impossible.

There is another line of duty to which I would respectfully call your attention, which also calls for united effort in order that our objects may be furthered. As we all understand, the essential idea of this Section is that dentists shall also be graduates in medicine, therefore properly entitled to the benefits accruing from association and consultation with physicians. There is a difference of opinion as to the advisability of having the student take the medical degree first and the special degree in dental surgery afterward, or vice versa, but there can be no question of the importance and little, if any, of the necessity of having both. Unfortunately for this desideratum, the difficulty of accomplishment is most unfavorable, owing to lengthening of the required course of instruction for recognition by the National Association of Medical College Faculties and the National Association of Dental Faculties; while with each it is a mark of progress toward higher education, and the probable effect, so far as the Section of Stomatology is concerned, and the advance of both professions into that interlying field, fast becoming of value to each, bids fair to completely abort, or at least inhibit a promising growth in future usefulness. The number of years of study required is becoming, not only quite beyond the possibility of the average student to attend, but more extensive than the benefits to be derived from the practice of our special branch will warrant, in comparison with other departments of medical science. Therefore, the natural result will be that the student of the near future must decide either to be a dentist, pure and simple, without a degree in general medicine, or be obliged to become an oculist, an aurist, a rhinologist or a practitioner, limited to some one or more of the other special fields of medicine for which he can equip himself with one year, or perhaps a little more, of study after graduating at some medical college, and even if he takes a short postgraduate course abroad, as so many do, will yet have perhaps expended less time and money than would be required to complete his attendance at a reputable dental school.

When this Section was first organized and recognized by the AMERICAN MEDICAL ASSOCIATION it was possible to complete the required course for the degree of D.D.S. in two years, then get an advanced standing in the medical college and receive the degree of M.D. in one year afterward. Today the National Association of Medical Colleges requires four years for graduation, and the dental faculty association three years, with the prospect of an additional year in the near future—now under consideration. It has already become a matter of some difficulty for a graduate of