It should be understood that the doctors are capable—more so than any one else—of managing a hospital.

The hospital need not, and should not, assume the responsibility for the results of any cases except those treated by its staff; and, to protect itself, this latter should be small in numbers and composed of the very best men within reach. The staff should not monopolize the work.

Of course, they should receive no remuneration for their official work; but for all other work either they or other physicians should be paid by such patients as are able to do so after meeting the usual hospital charges. Very many cases go to the metropolitan hospitals because they can there secure the best attendance for nothing, to the loss of doctors elsewhere. On the other hand, many cases are treated at home, to their detriment, which would go to hospitals if the attending physician did not wish to retain his fee. Let him freely use the hospital to the mutual advantage of himself and patient, their financial relations being the same as before, except that the hospital must have prior claim. The one essential point is, let no man enter the hospital as a sectarian.

So much for Utopia. Now for Massachusetts.

(To be continued.)

Original Articles.

THE COMPLICATIONS OF SCARLET FEVER AS OBSERVED IN FIFTY CASES.¹

BY HENRY JACKSON, M.D.,

Physician to Out-Patients of the Boston City Hospital.

THROUGH the kindness of Dr. Shattuck I had the opportunity of taking charge of the contagious service of the City Hospital last January. During this time 53 cases of scarlet fever were under my care for a part of their stay in the hospital, and many of them presented various complications, which offered a most interesting opportunity to study the various phases of this disease. The study of these cases was to me a source of much profit and interest; so that I feel a review of the month's work, with such conclusions as I can draw, may interest the members of this Society.

There is perhaps no disease whose course is more varied, or in which the possible complications may lead to more serious results, than scarlet fever. If the disease runs the usual course without any complications, it is mild in character, the only serious symptom being the prolonged desquamation, which demands absolute isolation of the patient on account of the danger of spreading the disease. Unlike measles, it is pretty satisfactorily demonstrated that the disease is most contagious during the stage of desquamation.

The cases under observation in January were of especial interest on account of the large number which presented serious throat lesions, as manifested by a membranous deposit in the pharynx or nose-pharynx: cases often spoken of as diphtheria complicating scarlet fever. But, as I hope to demonstrate to you, a careful clinical observation of these cases and a bacteriological examination as to their etiology proves that the membranous deposit seen in scarlet fever has no

connection with diphtheria except a close anatomical resemblance, and even here there are, in many cases, well-marked pathological differences.

During the last seven years the following cases of scarlet fever have entered the City Hospital:

	Cases.	Died.
1886	42	2
1887	75	9
1888	93	6
The contagious service was opened in February, 1888.		
1889	42	0
1890	103	4
1891 to January 31, 1892 } with diphtheria,	137	6
	20	11

I give a summary of 53 cases, which I intend to report in detail as to the occurrence of various complications. They entered the hospital during the months of December and January. Where the history was obtained the eruption followed the onset of the first symptoms, as given below:

1 day	20 cases.
2 days	1 case.
3 days	1 case.

In three cases a membranous deposit appeared on the tonsils two days before the eruption. In two cases a membranous deposit appeared on the tonsil three days before the eruption. In one case, which a bacteriological examination showed was not diphtheria, the membrane was observed on one tonsil one day before the appearance of the eruption, though at this time there was a scarlet macular eruption on the hard palate.

Age of patients.

	Cases.
7 mos. to 2 years	3
2 to 5 years	15
5 to 10 "	20
10 to 20 "	12
20 to 30 "	3
Total, 53 cases. One-half the cases between 2 and 10 years.	

Complications and Variations from usual symptoms.

	Cases.
Membrane in throat	20
Otitis media purulenta	9
Primary albuminuria (all with high temperature)	3
Nephritis later in disease	6
Abundant vesicular eruption in addition to usual scarlet rash	3
Lobar pneumonia	3
Widespread bronchitis and probably broncho-pneumonia, 3-5	
Elevation of temperature later in desquamation without any assignable cause	7

Desquamation was completed

Average (37 cases)	in 54 days.
Longest	in 70 days.
Shortest	in 32 days.

Mortality, 11 cases.

	Cases.
Septic naso-pharyngeal disease	8
Spinal caries (infant)	1
Acute nephritis (uræmia)	1
Moribund on entrance (no history)	1

If we throw out the case of spinal caries, which died many weeks after recovery from the scarlet fever, and the case moribund on entrance, we have a mortality of 9 cases in 51, in all but one of which the death was the result of intense general septicæmia, secondary to a foul naso-pharyngeal disease.

Of the uncomplicated cases none were very sick and none died. The chief interest centres in the cases complicated by membranous deposit in the throat, 20 in number, and these I wish to give in detail.

¹ Read at the Boston Society for Medical Improvement, April 24, 1893.

CASES COMPLICATED WITH MEMBRANE IN THE THROAT.

CASE I. A boy three years of age.

Time. Entered the hospital on the third day of the disease. The tonsils were enlarged, and on each was a well-defined gray patch; several small patches on the soft palate. The throat was clear in seven days.

Rash. The eruption was faint, and soon faded.

Complications. In the fourth week there was albumen in the urine and numerous casts, with many free blood-cells.

Result. Discharged well on thirty-seventh day. No septicæmia.

CASE II. A boy fifteen years of age.

Time. Entered the hospital on the third day of the disease. The tonsils were enlarged; on each was a dirty gray patch.

Rash. Bright in color and well marked over whole body; high fever at first, with primary albuminuria.

Complications. None.

Result. Discharged well on seventieth day. No septicæmia.

CASE III. A girl of nine years.

Time. Entered the hospital on second day of the disease. Both tonsils enlarged and covered with a thin gray membrane, which extended over the posterior pillars. On the fourth day the throat was practically clear.

Rash. A marked scarlet eruption.

Complications. In the fourth week there was a trace of albumen in the urine and a few casts of the hyaline variety.

Result. Discharged well on the fifty-sixth day.

CASE IV. A woman twenty years of age.

Time. Entered the hospital on the third day of the disease. Tonsils enlarged, red, with prominent follicles; on the right tonsil there was a small gray patch.

Rash. Well marked.

Complications. None.

Result. Discharged well on forty-second day. No septicæmia.

CASE V. A man twenty-three years of age.

Time. Entered the diphtheria ward. Tonsils swollen and red; on right tonsil several white follicular plugs, on the left tonsil a small white membrane and a small white patch on the left posterior pillar. In ten days the throat was practically clear. No rash.

Rash. On the second day a scarlet macular eruption appeared, which was followed by desquamation. In this case the question must of course be raised whether the scarlet fever was not a secondary disease implanted upon a preëxisting throat affection, but the eruption appeared so quickly that I am inclined to consider that the throat affection was but a complication of the scarlet fever, the eruptive stage being delayed.

Complications. None.

Result. Discharged well on the forty-fourth day. No septicæmia.

CASE VI. A boy fifteen years of age.

Time. Entered the hospital on the third day of the disease. The tonsils were red and swollen, and on each was a patch of gray membrane. In four days the throat was practically clear.

Rash. Moderate; and on entrance, the second day of the rash, already fading.

Complications. None.

Result. Discharged well on the forty-second day. No septicæmia.

CASE VII. A boy three years of age.

Time. No history obtained. There was a purulent discharge from the nose; the whole pharyngeal cavity was covered with a thick white tenacious membrane. The breath was fœtid.

Rash. The eruption was fading and desquamation was beginning.

Result. The child failed rapidly, and died on the fourth day after entrance. There was from the first a marked septic condition; pulse rapid and feeble; temperature high.

CASE VIII. A girl seven months of age.

Time. Entered the hospital on the third day of the disease. Foul purulent nasal discharge. Both tonsils were covered with a thin, gray membrane; there were gray patches on the uvula and soft palate. Clear in seven days.

Rash. A faint macular eruption over whole body.

Complications. The purulent nasal discharge continued after the membrane disappeared from the throat. In the second week a double otitis media purulenta developed. In the fourth week there was a rapid rise of temperature, caused by a pneumonia of the left lower lung, and the child died in four days.

Result. Death from pneumonia on the twenty-fifth day.

There was a marked general septic condition from the first.

CASE IX. A girl six years of age.

Time. No history obtained. Both tonsils enlarged, and on the right tonsil was a gray patch, which extended over the posterior pillar.

Rash. On entrance there was an intense scarlet rash; for two days there was a high temperature and slight albuminuria.

Complications. None.

Result. The patient was discharged well on the fiftieth day. No septicæmia.

CASE X. A woman twenty-four years of age.

Time. Entered the hospital on the third day of the disease. Both tonsils moderately enlarged, and on each there was a thick gray membrane. On the fourth day the left tonsil was covered with membrane, which extended on to the anterior pillar. On the uvula and soft palate there were small patches of membrane. In four days the throat was almost clear.

Rash. Bright-red scarlet eruption.

Complications. In the second week the pulse was weak and irregular; the heart was not enlarged, — a systolic murmur at the apex. The unfavorable condition of the heart was transitory, passing off in a few days under absolute rest and small doses of digitalis. Convalescence was somewhat prolonged.

Result. The patient was discharged well on the fiftieth day. No septicæmia.

CASE XI. A girl six years of age.

Time. No history. Membrane on both tonsils and uvula; patches of membrane on the soft palate.

Rash. Well-defined scarlet eruption. Purulent nasal discharge.

Complications. Throughout both lungs sibilant and sonorous râles, and in patches fine crackling râles, suggesting the existence of lobular pneumonia.

Result. Died in two days. Marked septic condition, with rapid and feeble pulse.

CASE XII. A boy thirteen years of age.

Time. Entered the hospital on the second day. An ulceration on the right tonsil and a small gray patch on the right side of the uvula, which had considerably swollen.

Rash. A moderate eruption.

Complications. None.

Result. Discharged well on the forty-second day. No septicæmia.

CASE XIII. A boy seven years of age.

Time. Entered the hospital on the third day. Both tonsils and both sides of the uvula covered with membrane. In seven days the membrane had disappeared.

Rash. Moderate in character, with a few vesicles.

Complications. In the fourth week otitis media left ear. A few days later acute nephritis developed, with marked diminution of the urine. Vomiting ensued, and he died in one week with uræmic convulsions.

Result. Death from nephritis, thirty days. No septicæmia.

CASE XIV. A girl three years of age.

Time. Entered the hospital in diphtheria ward. On left tonsil there was a patch about the size of a finger-nail. Three days later a scarlet rash appeared, with moderate rise of temperature. The late appearance of the rash of course suggested that the scarlet fever was a secondary disease, not associated with the primary throat lesion. Eruption slight.

Complications. In the fourth week acute nephritis with general œdema developed. Desquamation ceased on the fifty-sixth day, and she was transferred to the medical service on account of the nephritis which still existed. No septicæmia.

CASE XV. A girl two years of age.

Time. On entrance to the hospital she was desquamating. Both tonsils, uvula, pillars of the fauces and posterior pharyngeal wall were covered with a gray membrane. There was a foul purulent discharge from the mouth and nose. The edges of the nostrils and the lips were cracked, bleeding, and partially covered with scales. A bacteriological examination of the discharge showed streptococci and saprophytic organisms; no bacilli of diphtheria. The throat gradually cleared up, and her condition improved.

Complications. In first week otitis media purulenta. Fine bronchitis, probably lobular pneumonia.

Result. Discharged well on forty-second day. There was from the first a marked septic condition, as indicated by the rapid, feeble pulse, irregular temperature and the bad general condition.

CASE XVI. A girl of six years, sister of No. 15.

Time. On entrance to the hospital both tonsils, uvula and pillars of the fauces covered with membrane, which extended on to the posterior pharyngeal wall. Purulent nasal discharge.

Rash. A moderate macular eruption which faded in three days.

Complications. Dulness and fine râles in the right lower back. Coarse and fine râles through both lungs. On the sixth day double otitis media purulenta.

Result. Died on the seventh day.

There was a marked septic condition from entrance. Anatomical diagnosis from autopsy by Dr. Councilman: Acute bronchitis and broncho-pneumonia, acute splenic tumor, acute endocarditis, acute nephritis, septicæmia from general infection of streptococci.

CASE XVII. A boy of seven years, brother of Nos. 15 and 16.

Time. Entered the hospital with the history of sore throat for three days. Three days previous his two sisters had entered the hospital, one with a fully-developed scarlet fever eruption and one in the stage of desquamation. On the hard palate was a bright red macular eruption as is seen on the day before the appearance of scarlet fever. The boy was bright and said he did not feel sick. On the left tonsil was a patch of membrane, and two small spots on the pharynx above the left tonsil. On the second day the membrane had spread considerably, covering both tonsils and uvula. In the afternoon a rash appeared, and the following day there was a bright scarlet, macular eruption.

A bacteriological examination on the day of entrance showed a growth of streptococci; no bacilli of diphtheria. On the sixth day the membrane still covered both tonsils and the uvula; on the tenth day the throat was practically clear.

Complications. On the eighth day pneumonia developed in the left lower back; four days later in the right lower back, and the next day, which preceded death, in the left upper front.

Result. Death on fifteenth day from pneumonia. On sixth day general condition septic with rapid, feeble pulse.

CASE XVIII. A girl, eight years of age.

Time. No history. On entrance both tonsils, pillars of the pharynx and posterior pharyngeal wall covered with thick gray membrane. Foul, purulent discharge from the nose.

Rash. Bright scarlet rash.

Complications. Râles throughout the chest.

Result. Death on day of entrance. There was a marked septic condition on entrance. Pulse very feeble and so rapid that it could not be accurately counted.

Anatomical diagnosis from autopsy by Dr. Councilman: Abscess and ulceration in pharynx; beginning croupous pneumonia; acute nephritis; acute splenic tumor; fatty degeneration of heart, liver and kidneys; general lymphatic hyperplasia; septicæmia from streptococcus infection.

CASE XIX. A girl of twenty-one months.

Time. Child had been sick four days. Membrane on tonsil, uvula and pharynx; foul discharge from the nose.

Rash. Dull red eruption on abdomen and thigh which spread rapidly.

Complications. None.

Result. Died on second day. Some retraction of thorax and voice hoarse to slight extent. Marked septic condition.

CASE XX. A girl, eighteen months old.

Time. On entrance a moderate macular eruption. Four days later a patch of membrane developed on the left tonsil and uvula; foul nasal discharge. In three days throat more clear. Rash became bright.

Complications. On the eighth day complete consolidation in the lower part of the left back, and death on second day with a gradually increasing dyspnoea. Septic condition.

RESUME OF TWENTY CASES COMPLICATED WITH MEMBRANE IN THE THROAT.

Age.	Cases.
Under 3 years	7
6 to 10 years	7
13 to 15 "	3
20 to 24 "	3

Time the membrane appeared, or was observed.

	Cases.
2d day of disease	2
3d " "	7
4th " "	1
6th " "	1
1 day before rash	1
2 days before rash	1
3 days before rash	1
Time not noted	6

In the last six cases it may be considered that in five the membrane appeared early in the disease as the following record is made as to the skin.

	Cases.
Intense rash	3
Moderate rash	1
Faint rash	1
Desquamation	1

Seat and Extent of the membrane.

	Cases.
Both tonsils, uvula and pharynx	4
Both tonsils and pillars of pharynx	2
Tonsils and uvula	3
One tonsil and pillar of pharynx	3
Both tonsils	2
One tonsil	2
Whole pharynx and nose	5

Duration of membrane in 6 cases where noted.

Average	6 days.
Longest	10 days.
Shortest	4 days.

Character of the eruption.

	Cases.
Faint, slight or moderate	9
Marked or intense	9
Fading	1
Desquamative	1

Desquamation completed, of 11 cases which recovered.

Average	54 1-2 days.
Longest	70 days.
Shortest	37 days.

Complications.

	Cases.
Slight albuminuria and casts in 4th week	2
Acute nephritis	2
Pneumonia	6
Otitis media purulenta	3
Parietal disease of the heart	1

Mortality, 9 cases.

	Cases.
Foul nasal discharge	7
Acute nephritis	1
Pneumonia	2

Marked Septicæmia, 8 cases, of which only 1 recovered.

The fatal cases were all markedly septic in general appearance from the first except one, and he died of acute nephritis with uræmia in the fourth week, long after the entire disappearance of the membrane, and apparently well-developed convalescence.

Until by the bacteriological investigations of the last few years the question was definitely settled that the bacillus of diphtheria was not found in the membranous deposit on the throat of scarlet fever, great difference of opinion existed as to whether this form of scarlet fever was to be considered as a mixed infection of scarlet fever and diphtheria. Henoch has always been the most prominent advocate of the theory that the membrane was but a local manifestation of the scarlet fever poison. An observation of the clinical phenomena presented by my cases gives a good example of the essential factors on which such an opinion is based.

A deposit of membrane on the tonsils or pharynx is by no means a rare complication. In most cases this membrane shows but little tendency to spread, and especially does not invade the larynx and trachea. The existence of this membrane, with the ex-

ception of the intensely septic cases, does not exert any material effect upon the course or prognosis of the disease. Paralyzes are not observed. Eleven of my cases remained in the hospital an average of fifty-four days, and paralysis was not noted in a single case. The mortality of my cases was large, nine out of twenty cases, but a closer inspection of the cases shows that in seven there was a foul nasal secretion; the secretion was abundant, sero-purulent, somewhat bloody and excessively irritating as shown by the abundant excoriation about the edges of the nostrils; of seven such cases only one recovered. The other eleven cases in which the membrane in six was widely spread over the tonsils and uvula or pillars of the pharynx, showed no evidence of a septic condition, and the scarlet fever ran the usual course of a mild disease without complications. Otitis media was noted only in the fatal cases.

There is no marked anatomical difference between the pathological lesions as observed in diphtheria and the membranous deposit seen in scarlet fever; in special cases there may be no difference, and at best no factor is of sufficient importance or occurs with sufficient regularity to make a differential diagnosis possible. In the membrane of scarlet fever, the deposit is less firm, it tends to be rather pulsatous and cannot be stripped off in large pieces or strips as in diphtheria. Secondly, destruction of tissue by ulcerative or suppurative processes are more common in scarlet fever than in diphtheria.

In Loeffler's first article on the bacillus of diphtheria he describes the organisms found in five cases of membranous inflammation complicating scarlet fever; in four the bacillus of diphtheria was not found; it was present in the fifth case, but this was one in which the membrane appeared on the eighteenth day and invaded the larynx. Since this work of Loeffler many have sought for the diphtheria bacillus in the membrane of scarlet fever, but in vain. In almost all cases a streptococcus is found, which most observers describe as identical with or very similar to the streptococcus of erysipelas.

Booker has recently published² a report of the examination of pseudo-diphtheritic angina in scarlet-fever. In none of the cases where there was membrane did he find the Loeffler bacillus. In all he obtained a streptococcus which differed from the streptococcus of erysipelas essentially in that its vitality in culture media was short. In one of Booker's cases (Case 3) there was a membranous deposit on the tonsils on the second day of the disease and two days before the eruption of the scarlatinal rash. The organism found was similar to those found in the other cases. This case is comparable to two of mine, namely, Nos. 5 and 14, in which the membrane preceded the rash two and three days respectively.

In my cases bacteriological examination was made in four instances. In two I made cultures from the throat during life and in two Dr. Councilman made cultures from the throat and internal organs post-mortem. In the first case (No. 15) there was a marked septic condition, a foul nasal discharge, and the whole posterior pharyngeal region was filled with a soft pulsatous membrane. I found streptococci in the cultures but no bacilli of diphtheria.

In the second case there was a membrane on one tonsil and no rash. The result was the same as in

² Bulletin Johns Hopkins Hospital for October and November, 1902.

Case No. 1. In this case the rash developed in twenty-four hours. He gave a history of a sickness of three days, the chief symptom having been sore throat. The membrane was not due to diphtheria, it was not tonsillitis, and I think it fair to assume that in this case, and in Cases Nos. 5 and 14, the scarlet fever poison was the cause of the membrane while the eruption of the rash was deferred to a remarkably late period, the fourth day after the initial symptoms.

In the two cases examined after death by Dr. Councilman pure cultures of streptococci were found in the glands about the neck and in most of the internal organs. It is interesting to note that in one of the cases cultures from the kidney were sterile and no organisms were found in the kidney, though there was an acute nephritis, the acute inflammation having been set up by the toxins produced by the bacteria.

Pneumonia, lobar or lobular, was the immediate cause of death in six of the septic cases. Acute nephritis developed in two of the cases with membrane; one of the cases terminated fatally.

Otitis media was developed in three cases, all of which had a foul nasal discharge. But apparently the existence of the membrane was not an especially predisposing cause of otitis as it developed in six cases of 33 in which there was no membrane.

Pneumonia, lobar or lobular, was present in six cases: the same prevalence of this disease in septic throat cases of scarlet fever is noted by other observers. It is to be considered as the direct result of the general septicæmia which results from the streptococcus infection. In three of the cases the disease was lobar. Only one of these cases recovered, and that was one in which the essential disease was bronchitis though the existence of a few patches of lobular pneumonia seemed to me probable.

In summing up, we can say the presence of membrane in the throat exerted no material effect upon the course of the disease, except in the cases that presented a marked septic condition from the onset, and in these there was an extension of the disease into the nasopharynx. The deposit of membrane in the throat may precede the eruption of the rash.

The membrane is not due to the bacillus of diphtheria. If the name diphtheria is retained as descriptive of the pathological condition it is practically important to remember that the throat lesion is but a local manifestation of the scarlet fever poison, and does not entail the danger of infecting another individual with the specific disease, diphtheria.

The six cases of otitis media in cases where there was no membrane, occurred in cases which offered no symptoms suggestive of such a serious complication until the onset of the primary fever due to the inflammation of the ear. In all the cases there was a sharp attack of fever, marking the beginning of the attack. In all the cases the discharge ceased before the patients were discharged.

Seven cases were of considerable interest to me in that during convalescence there was a considerable rise of temperature and pulse, without constitutional symptoms, in which repeated careful examination failed to elicit any sufficient cause for the fever. A boy who had an eruptive stage of marked mildness during desquamation, had for two months a temperature of 100° to 101° and frequent examination failed to elicit a single abnormal physical sign.

As two cases had for a varying but short period an

irregularity of the action of the heart in rate and rhythm, it seemed to me possible that the mild fever might be due to granular degeneration of the heart. All the cases were kept in bed during the fever so that no strain was brought upon the heart. All the cases with elevated temperature which I speak of finally recovered without untoward symptoms.

NOTE.—Since I wrote this paper an investigation of a considerable number of cases of membranous inflammation of the throat in scarlet fever by Drs. Councilman and Williams, has demonstrated the presence of the Löffler bacillus. In the light of this work I am wrong in saying that the membranous affection of the throat in scarlet fever is absolutely distinct from the very similar pathological process in diphtheria.—H. J.

A CONSIDERATION OF ERYSIPELAS OCCURRING DURING THE PUERPERIUM.¹

BY CHARLES W. GALLOUPE, M.D., OF BOSTON.

THE complication of erysipelas with the puerperal state presents many points of medical interest, but perhaps the most important of all, at the present time, is the question of infection. The contagiousness of erysipelas has for many years been hotly argued from the clinical standpoint, but no conclusion could be reached until the development of bacteriology made proofs of another and more definite sort possible. The discovery of specific bacteria in anthrax, gonorrhœa, and other contagious diseases, led to the study of erysipelas by similar methods of inoculation with cultures from known cases. The first important contribution to this subject was a record of experiments on eleven cases, published by Fehleisen in 1883.² In each case he found a micrococcus of uniform character, especially abundant in the lymph spaces of the tissues actively affected. This was cultivated successfully and inoculated into the ear of a rabbit, where, in eight cases out of nine, the characteristic signs of erysipelas appeared, and the tissues were found to contain a chain-like coccus to which he gave the name of "streptococcus erysipelatis." Later experiments have proved beyond doubt the bacterial origin of the disease in every instance. Before this fact was demonstrated, and while the evidence was wholly clinical, the non-contagiousness of the disease was claimed by many observers, from the absence in their own experience of instances of transmission and from the failure to trace out in every case the source and method of contagion. This difficulty suggested the theory of an "idiopathic" erysipelas, and also of a special non-contagious form of the disease,³ while the presence of a gross wound served to distinguish "surgical" from "medical" erysipelas. All forms of the disease are now known, however, to have a single infective cause in the shape of a micrococcus, which enters the system through a wound of the skin or mucous membrane, not necessarily large enough to be visible, perhaps even microscopic, but sufficient to expose the lymph spaces to absorption. In 1884, before this fact was established, D. B. St. John Roosa⁴ announced his opinion that erysipelas was always traumatic in its origin. He did not believe that it could be generated in a sound skin, and explained the cases ascribed to cold, to the "trauma-

¹ Read before the Massachusetts Medical Society, June 14, 1893, and recommended for publication by the Society.

² Fehleisen: "Ätiologie des Erysipels," Berlin, 1883.

³ Goodridge, of Bath Royal Infirmary, quoted in Medical and Surgical Journal, vol. cx., January, 1884.

⁴ D. B. St. John Roosa, reported in Medical and Surgical Journal, December, 1884.