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The term Scarlatina Puerperalis was originally applied to a form of puerperal fever which was believed to be modified and intensified by infection with the scarlatinal poison, and which was frequently confounded with an occasional puerperal affection very closely resembling scarlet fever. Hence two distinct opinions have been advanced: One that it was a puerperal fever allied to pyæmic or septic conditions to which the scarlatinous poison added virulence, and which would produce in a susceptible person scarlet fever pure and simple. The latter opinion is that it is nothing more than scarlet fever attacking a lying-in woman, and modified by the puerperal state, but in no manner connected with or caused by pyæmia or septicæmia. Each of these theories is maintained by authors of equal repute at the present time, and some claim the occasional occurrence of both forms of an acute puerperal disease characterized by the scarlatinous eruption and angina. As a contribution to the study of this rare complication of the puerperium, I present the following report of a case, the second of the kind which I have seen.

Case.—Mrs., aged 33, gave birth to a well-developed male infant at half past two o'clock A. M., Sept. 6, 1883. The labour was natural. On the day previous, about noon, I saw her in her parlour, and was informed that she had been awakened about 3 A. M. by a slight pain, followed by several very copious liquid stools. The diarrhœa had ceased, but the pains had continued at irregular intervals, and there was a slight "show." I directed her to retire to her chamber, send for the nurse, and prepare for the coming event. Late in the afternoon the pains assumed the definite character of labour-pains, and the os was dilated to about the size of a silver quarter of a dollar piece. At 11 P. M. I was summoned, and found the os dilated to the size of a silver dollar. The pains were strong and at short intervals. From this time the labour progressed without any unusual occurrence until 2 A. M., 6th. At this time the administration of ether was begun. The exit of the head was delayed by a rigid perineum, and efforts were made to delay its extrusion, but it

finally escaped at 2.30, causing a laceration of the perineum, not, however, of sufficient extent to demand immediate stitching. One hour after the completion of the labour her pulse was 76. During the 6th, 7th, and until 8 P. M. of the 8th, she was as well as the most favourable cases after parturition, excepting inability to pass her water. This was probably due to the pressure of the head against the urethra, caused by the rigid perineum and efforts to resist the expulsive force. On the evening of the 8th inst., her pulse rose to 84. The breasts were full, tense, and tender. The nipples were painful during the act of nursing. An enema of tepid water was ordered, which produced a copious stool; a saturnine lotion was applied to the breast, and the nurse was directed to secure the evacuation of the breast by gradual manual pressure, and, if that failed, by suction with her own mouth.[1]

9th. 4th day,[2] 10 A. M. Temp. 101.5°; pulse 96. Passed a more uncomfortable night than usual. Breasts firm, more painful. Milk abundant; child nursed regularly. Passed water for the first time voluntarily. No unusual abdominal tenderness or pain. Lochia as usual at this period. Continued the saturnine lotion, with directions to nurse to prevent painful accumulation of milk. At 11.30 she had a chill, characterized by a sense of slight chilliness, cold feet, and oppressed breathing, which she described as a feeling of suffocation similar to that felt when taking ether. As I entered her room at 1.30 P. M., she expressed regret that I should have been sent for, as she had recovered from her nervousness, and felt entirely relieved. Her face was flushed; skin hot and dry; temp. 103°; and pulse 112. The lochia was inoffensive; vagina hot, but not unusually tender. The perineal tear was sore. A finger was introduced as far as possible through the cervix, and when withdrawn presented no evidence of any putrescence. The abdomen was flaccid, and entirely free from any but the ordinary conditions in such cases. Ordered 10 grs. of the hydrochlorate of quinia immediately, and 5 grs. every six hours thereafter. At 8 P. M. the temperature had fallen to 101.5°; the pulse was 96. She was sweating profusely. The breasts were free from pain, less tense; milk abundant. The child nursed well and regularly every two hours. Fearing that the alimentary tract might not be entirely free, I gave a pill consisting of blue mass and extract of rhubarb, each three grains, and continued the quinine every six hours.

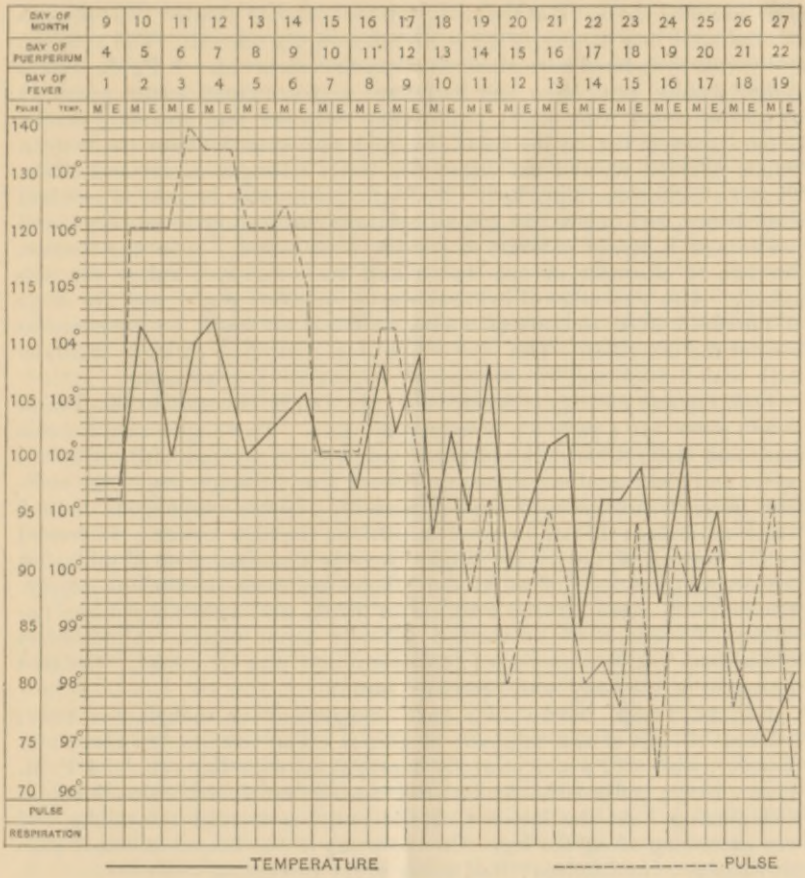
Vaginal injections of carbolized tepid water had been given daily since delivery, and several times each day the external genitalia had been cleansed with similar fluid.

9th. 5th day of lying-in; 2d day of the fever;[3] 10 A. M. Temp. 104°; pulse 120. No abdominal pain or tenderness, no tympanites. Lochia as previously described. Breasts soft and entirely free from inflammation.

[1] The best breast pump I know of is the mouth of the nurse. I have often failed to make the nurse discharge this important duty, but when I have succeeded, the result has been entirely satisfactory. I knew a husband whose affection and sympathy for his suffering wife induced him to apply his mouth, and the result was equally good. Once I succeeded with a pair of puppies, between which and the patient there grew a devotion and attachment akin to those of mother and offspring. Breast pumps as often do harm as good. The suction of the breast by the nurse should be made a part of the curriculum of the training schools for nurses.

[2] The days began at 2.30 A. M.

[3] The beginning of the eruptive fever is dated from the initial chill the day previous. A rigor is the most common initial symptom.



Tongue moist and clean. Upon laying aside her gown I discovered an indistinct scarlatinous eruption covering both breasts and entire front of chest, less distinct about the neck, and not extending above the covered part. In answer to a question she replied that her throat was not sore, but felt dry. Inspection revealed nothing.[1] She was very thirsty, and complained of the unpleasant effects of the quinine. No movement from the bowels. I could not discover any local condition which would justify the suspicion of septic poisoning, but, fearing that it might be concealed, and knowing that a putrescent odour of the lochia was not always present, I determined to wash out the cavity of the womb, but, not having the necessary apparatus with me, I continued the treatment. At 12 o'clock I returned, and with the assistance of Dr. Charles E. Hagner, whom I had invited to see the case with me, proceeded to disinfect the uterine cavity. At this time the temp. was 103.8°, and pulse 112. A Chamberlain intra-uterine tube was introduced, and the womb was washed out with a one to forty solution of carbolic acid. A digital examination made immediately

[1] She said she had had scarlet fever, which statement was subsequently confirmed by her father and brother.

after disclosed the fact that the cavity was not entirely clean. The tube was reintroduced into the cavity again, and thoroughly washed. The eruption and throat symptoms were about as when first observed. 8 P. M. Temp. 103.8°; pulse 120. She had had three copious liquid stools, preceded by and attended with slight pain. The eruption was distinctly scarlatinous, covered the entire trunk, but did not extend above the margin before referred to, and not below the body. Tongue moist and clean. Throat affection more marked. Discontinued quinine because of cerebral disturbance, and ordered 10 grs. salicylate of soda every three hours, and powders of 2 grs. of chlorate of potash to be put dry upon the tongue, the two to alternate at one and a half hour interval, unless she was asleep. Also a mixture of the subnitrate of bismuth grs. x, and five drops of the deodorized tincture of opium as often as might be necessary to control the diarrhœa. The diet of beef-tea, mutton or chicken broth, or milk with lime-water, was continued. Cracked ice at pleasure.

11*th*. 6th day; 3d day of fever, 10 A. M. Dr. H. in consultation. Temp. 102°; pulse 120; passed a comfortable night. Two slight liquid stools since last visit; throat red and punctated; tongue covered with white fur; pelvic and abdominal conditions as before; if any change, less of the ordinary sense of soreness upon manual pressure. Lochia unchanged. Passed water naturally; breast in good condition; nipples tender. Is fretted by the nursing of the child; thinks there is abundant flow of milk, but the dragging of the infant at the nipples indicates insufficient supply. The eruption intensely red over entire trunk, and extending along the thighs. Cheeks flushed; marked paleness about mouth. Cinchonism diminished, nearly disappeared; treatment and diet continued. Ordered inunction of the body with benzoated lard.

1 P. M. Temp. 105°; pulse 132. Suspended the salicylate of soda; ordered 10 grs. of the sulphate of quinia. The face to be affused, at pleasure, with cold water strongly impregnated with bay rum.[1] 4 P. M. Temp. 104°; pulse 132. At both the one and four o'clock visits, the child was nursing. At the latter visit, the eruption covered the thighs, and was extending along the leg. On the trunk it was deeper in colour than previously. No delirium; food taken every two hours.

8 P. M. Dr. H. present; temp. 104°; pulse 136; tongue heavily coated, and along edges and at tip papillæ enlarged, and a few showing through the coating; complains much of the quinine. Face more flushed, and the difference in colour about the mouth more marked. One liquid stool since last visit, after which a dose of the bismuth mixture was given, as had been done since the diarrhœa set in; the condition of the abdomen as before. Lochia less sanguineous, but emitting a faint, disagreeable odour. Continued bismuth mixture as might be needed. Ordered a mixture of chlorate of potash one drachm, tincture of the chloride of iron two drachms, with equal parts of water and glycerine, making a four-ounce mixture, of which one teaspoonful was to be given every four hours. The vaginal carbolized injection to be repeated, and, if delirium should occur, thirty grains of the bromide of potash. Nutriment, ice, carbonic acid, or Apollinaris water, as before, and the affusions at pleasure. Removed the child from the breast, because of tenderness of the nipples, insufficient supply of milk, and fretting of the patient. Nurse directed to empty breast.

[1] I have frequently, in cases of high temperature, especially in children, derived marked benefit from frequent bathing of the face and head with cold water, mixed with bay rum. The evaporation is very rapid, and heat is rapidly lost.

12*th*. 7th day, and 4th day of fever, 10 A. M. Dr. H. present. Temp. 104.3°; pulse 136. Tongue presented the character of a strawberry tongue; throat deeply congested, but slightly swelled. Eruption covering entire surface; sudamina over trunk densely thick. Lochia as before stated; much flatus; lacteal secretion suppressed. As I entered the room, she greeted me with the expression that she had had a very comfortable night, and was much better early in the morning, but that the inability to pass water (which had not occurred since the previous mention), and the failure of the nurse to introduce the catheter had fretted her, and brought back the fever. I drew off 16 ounces of highly coloured urine.[1] Continued the mixture of iron and chlorate of potash; cracked ice, carbonic acid, or Apollinaris water at pleasure, and the volatilized affusions and diet as before. Ordered, in addition, five grains of the sulphate of quinia and one drachm of Fothergill's solution of hydrobromic acid every two hours. Sensorium not disturbed; no delirium during night.

1 P. M. Temp. 103.6°; pulse 136, somewhat unsteady and irregular. Introduced catheter, and drew off six ounces of urine; increased the interval of the quinia mixture to three hours, and added fifteen minims of the tincture of digitalis to each dose.

4 P. M. Temp. 104.2°; pulse 132, regular, tension improved. Increased interval of quinia mixture to four hours, to which, at 8 P. M., add fifteen minims of the tincture of digitalis. This would make twenty grains of the sulphate of quinia, four drachms of the hydrobromic acid, and thirty minims of the tincture of digitalis since 11 A. M. same day. Repeated the vaginal injection and inunction; lochia emitting a more offensive odour. The patient is quite bright and cheerful, but complains of the flatus and the pain occasioned by it as it courses through the intestines. 8 P. M. Dr. H. present; temp. 103°; pulse 136. Complains of increased pain occasioned by flatus, and also of soreness of throat; but on inspection the redness and swelling appeared less; lochia more offensive. Discontinued iron and potash mixture and animal broths; continued quinia and acid mixture and digitalis every six hours. Ordered milk-punch every six hours, and milk and lime-water in the intervening hours; and, if the annoyance occasioned by the flatus did not subside, a rectal injection of tepid water and one drachm of the tincture of assafœtida.

But for the falling temperature an intra-uterine carbolized injection would have been administered. In view, however, of this fact, it was not believed to be imperative, and was postponed until the following morning.

13*th*. 8th day, and 5th day of the fever, 6.30 A. M.; temp. 102.4°; pulse 120, tension good; four stools during night. Passed a more comfortable night than the previous one; flatus and pain disappeared; drew off six ounces of urine; no change in medicine; London beef extract added to diet.

[1] This quantity was evidently due to the neglect of the nurse, and probably to deception practised in the statement that she had emptied her bladder several times the previous afternoon.

Colour, deep yellow; reaction, very acid; sp. gravity, 1026; chlorides, diminished; phosphates, diminished; urates, increased; albumen, small quantity; sugar, none; sediment, flocculent.

Microscopical Examination.—Few epithelial casts; some granular ones. Epithelium from kidney, ureter, and bladder; few leucocytes; few blood-corpuscles.

The change made in the diet the night before and the suspension of the iron mixture were made because of the suspicion that the flatulence might have been produced by them.

10 A. M. Dr. H. present. Temp. 102°; pulse 120; feeling much better; throat improved; lochia diminished, odour the same; treatment continued. The continued fall in the temperature, diminished frequency of the pulse, and improved condition of patient induced us to defer the intra-uterine injection.

1 P. M. Temp. 102.2°; pulse 120. Condition unchanged; treatment continued; drew off six ounces of urine.

4 P. M. Temp. 102.6°; pulse 120. Condition unchanged; dismissed nurse.

8 P. M. Dr. H. present. Temp. 102.4°; pulse 120. Suspended quinia and acid mixture until 6 A. M.

Punch at five hours' interval; one stool, more consistent; drew off six ounces of urine, lighter colour. In consequence of the change of nurse, some confusion. Vaginal injection and inunction not given, as ordered, in the afternoon; renewed the orders; diet continued.

14*th*. 9th day; 6th of fever. Dr. H. present. Temperature 102.6°; pulse 124. Tongue red; throat improved. One slight stool. Catheter introduced at 3 and 11 A. M.; one ounce drawn at the first, and three ounces at the last time. No lochial discharge since vaginal injection at 9 the previous evening, but little then. Passed a bad night; was restless and hot; slept but little before 3 A. M. Complains of disagreeable dryness of tongue and fauces. Some tympanites. No pelvic or abdominal pain or tenderness. The water from the vaginal injection this morning returned clear and odourless. Fearing there might be retention of the lochia[1] I washed the uterine cavity, using a double canulated elastic tube and a fountain syringe. The water returned nearly colourless, odourless, and containing a few whitish flakes, looking like inspissated pus, and fewer reddish particles. Suspended quinine and hydrobromic acid mixture, and digitalis. Ordered 10 grs. of the acetate of potash in half ounce of the spiritus Mindereri every two hours; sponging of the entire surface with warm water, and a hot flaxseed meal-poultice to the dorso-lumbar region. Diet and punch as before. Mouth to be rinsed at pleasure with a mixture of glycerine, rose and pure water. Sensorium undisturbed.

[1] Recent observation had taught me that the absence of a lochial discharge must not be accepted as conclusive against its presence, when a puerperal woman is seized with a chill followed by fever. The case was as follows: A lady was up and about her chamber, feeling quite well. During the night of the twelfth day after her confinement, she had two chills, followed by free sweating. On the morning of the 13th day, her temperature was 101.5°. There was no vaginal discharge nor any unhealthy condition discovered by a careful digital examination, not even by the introduction of the finger far into the cervix. Ordered 5 grs. of the sulphate of quinia every six hours, rest in bed, and a fluid diet. On the next morning, at the same hour of the day, her temperature was 103.5°. She had taken 24 grains of quinine, but the temperature had risen one-and-a-half degree. A careful digital examination and inspection through a speculum were negative. I introduced a double canulated elastic intra-uterine tube, and with a Davidson's syringe threw in carbolized water, washing out a small quantity of a sanguineo-purulent and stinking fluid. The temperature fell to nearly normal in the afternoon, and was normal the next morning. I again washed out the cavity. Nothing more was needed. The patient was up in two days, and has enjoyed good health since.

1 P. M. Temp. 102.8°; pulse 114. Patient expressed herself as feeling entirely comfortable, having derived more pleasure from the sponging than from anything which had been done for her since her illness. She desired sleep and rest. Deafness caused by the quinine nearly entirely gone. I drew off seven and one quarter ounces of highly coloured urine, the analysis of which, by Dr. Acker, was as follows :—

Colour yellow; reaction acid; sp. grav. 1015; chlorides diminished; phosphates diminished; urates increased; albumen very small quantity; sugar none; sediment flocculent.

Microscopical Examination.—Several epithelial casts. Epithelium from kidney, ureter, and bladder; leucocytes.

Suspended the milk-punch, which was to have been taken at this hour. Continued the beef extract, milk and lime-water, and the acetate of potash mixture.

The quantity of urine seems large to have been secreted since 10 A. M., at which time the nurse obtained only three ounces. She is a trained nurse, accustomed to the use of the catheter, and very reliable. I was surprised; but she insisted that there could be no mistake, either then or at the 3 A. M. attempt. At this visit I attended to it myself, with the result above stated. This, with the quantity drawn at different times during the earlier part of the twenty-four hours, made forty ounces for the day ending at 1 P. M. This is less than it had been for any day since the initial chill. Only eleven ounces could have been secreted since 9 o'clock the night before.

4 P. M. Temp. 103°; pulse 120. One very slight dark liquid stool. Patient said she was feeling much better, was gaining strength, breathed better, had turned herself over on her side and slept. Intellect perfectly clear. At her request, a weak mint julep was ordered. The sponging and vaginal injection were ordered to be repeated. Medicine and diet continued as at last visit.

8 P. M. Dr. H. present. Temp. 103°; pulse 114. Two very slight stools. Nurse drew off sixteen ounces of urine, less coloured. Tympanites diminished. No return of lochia. No discharge from os. Epidermis peeling off buttocks in large flakes, leaving a moist and intensely red surface. Had slept some since 4 P. M. Continued potash mixture, and ordered the sponging to be repeated every three or four hours, and a pledget of absorbent cotton saturated with Listerine to be applied between pudendal labia and surfaces of the perineal tear. Diet continued.

15th. 10th day; 7th day of fever; 10 A. M. Dr. H. present. Temp. 102°; pulse 100. A good night. Throat well; tongue improved; one stool; urine drawn by nurse, twenty-five ounces at 2, and twenty ounces at 8 A. M., making in all sixty-eight ounces since 10 A. M. 14th. Feels much improved. Desquamation free on face, chest, and abdomen. Eruption about buttocks losing colour. Tympanites less. No lochia. Patient bright and cheerful. Treatment, as last ordered, continued.

1 P. M. Temp. 102.2°; pulse 102. One stool, slight, more consistent, black. Treatment continued.

4 P. M. Temp 101.8°; pulse 102. Twenty-four ounces of urine drawn by nurse at 2 P. M. One stool. Feeling improved. Suspended potash mixture.

8 P. M. Temp. 102°; pulse 100. One very small stool. Some tympanites. Sixteen ounces of urine drawn by nurse at 6.30 P. M. Treatment as last directed continued.

16*th*. 11th day; 8th day of fever; 10 A. M. Dr. H. present. Temp. 101°; pulse 100. Two quite consistent stools. Slept well. Urine drawn by nurse at 11 P. M. 15th, twenty-one ounces; at 4 A. M. 16th, seventeen ounces, and at 9.30 A. M. twenty-four ounces, making in last twenty-four hours one hundred and two ounces. Sponging, vaginal injections, and diet had been continued as usual. In addition to the diet, allowed milk toast; and at request of patient a weak julep.

1 P. M. Temp. 102.2°; pulse 106. One stool, consistent and partially formed. Desquamation progressing. The temperature is precisely the same as at the same hour yesterday, but the excursion is one degree greater. The julep had been taken, but not the toast. No cause could be discovered for the difference. It will be observed that a somewhat similar rise took place on Friday, following a lower range on the day before, but it was less rapid and not so great. Then it was believed to have been caused by the renal congestion.

4 P. M. Visit unavoidably omitted.

8 P. M. Dr. H. present. Temp. 103.6°; pulse 112. One stool at 6.30; character similar to the last described. Urine drawn by nurse at 2.30 seventeen ounces, and at 6.30 sixteen ounces. Thirst intense; tongue dry; skin hot and dry. Had passed a very uncomfortable afternoon; very restless; complains of the heat of the room (day very hot). Tympanitis not increased. No pain; no abdominal or pelvic tenderness; no lochia; no chill; no swelling of any superficial glands; no pain or tenderness upon deep inspiration. Breast flabby and painless. Very talkative; dreams and talks during sleep. Says people talk to her while asleep; she answers them, and is awakened by her own words. Perineal tear perfectly healthy. All directions have been strictly complied with. The spongings had been given every four hours, and the usual afternoon carbolized injection. Washed out womb with a one to forty carbolized solution. A very small quantity, less than one drachm, of bloody fluid at first, but afterwards the water returned perfectly clear; no odour but that of the injected fluid could be distinguished. Ordered ten grains of the hydrochlorate of quinia immediately, and five grains every two hours until twenty grains are taken, and then the same dose every six hours; sponging every two hours; diet as before.

17*th*. 12th day; 9th day of fever, 10 A. M. Dr. H. present. Temp. 102.4°; pulse 112. Two stools, copious and liquid; some pain in rectum during act of defecation. Was very restless and talkative until midnight; after that time quiet and slept much. Urine drawn by nurse at 12.10 A. M. fourteen ounces, and at 5 fifteen, and by me at 10 nineteen, making eighty-three ounces in last twenty-four hours. At last vaginal injection nurse noticed much flocculent matter in water. Patient was lying on right side and comfortable, but complained of discomfort in right iliac fossa when upon left side. Middle hypogastric region tender on pressure; some tenderness in right iliac fossa, and apparently a sense of firmness. By bi-manual examination this firmness was more distinct and very tender. The vaginal roof was nowhere tender, but the posterior wall along lower part of rectum slightly so. Washed out womb; two or more drachms of colourless pus. Ordered hot vaginal injections every four hours, and hot flaxseed-meal poultices to hypogastrium. Sponging continued. Diet same. Quinine suspended, owing to cerebral disturbance.

1 P. M. Temp. 102.6°; pulse 112. Slight rectal pain caused by escape of flatus, preceded always by abdominal pain and borborygmus; pain in

right iliac fossa on deep inspiration. In dorsal or right lateral decubitus no pain is felt, except as above stated. Ordered eight drops of the deodorized tincture of opium if the pain recurred, otherwise no change.

4 P. M. Temp. 102.8°; pulse 104. No pain since taking the opiate. Drowsy. Urine drawn by nurse at 2 P. M., eighteen ounces; colour very light, as it has been for several days.

8 P. M. Dr. H. present. Temp. 103.6°; pulse 100. Thinks she is better. No pain except upon full inspiration, but less and confined to one point far to the right in the iliac fossa. Urine drawn, thirteen ounces, very clear; no stool; no pain in rectum. Tongue less dry; thirst less. Washed out womb; more pus than in the morning, more colour, and some flakes. Ordered hot vaginal injection and sponging to be repeated at 9, and then both to be suspended until to-morrow. Liquid diet and poultices continued, and the opiate sufficiently often to secure freedom from pain and quiet. Examination of pelvic organs and palpation of abdomen omitted. Sensorium undisturbed.

18*th*. 13th day; 10th of fever, 10 A.M. Dr. H. present. Temp. 100.6°; pulse 96. Passed best night since fever began. Feels much better. Tongue pale. Skin pleasant. One very small stool. Less tympanites. No complaint of pain or soreness. Improved appetite. Urine drawn by nurse at 3 A. M., eighteen, and at 9 A. M. fifteen ounces, making in last twenty-four hours sixty-four ounces. Washed out womb; less pus; less colour. Continued treatment of yesterday. Did not see the patient again until 25th, in consequence of absence from the city at the meeting of the American Gynæcological Society. The following notes were taken by my colleague, Dr. C. E. Hagner, who had charge of the case during my absence.

3 P. M. No action on bowels since 2 A. M. P. 96; temp. 102.8°.

8 P. M. Uterine injection used. P. 96; temp. 102.4°.

19*th*. 9.45 A. M. Uterine injection used. Pulse 88; temp. 101°.

6.45 P. M. Cool at 2 P. M. Ten drops tinct. opii deod. Action at 6 P. M. Uterine injection. P. 96; temp. 103.6°.

20*th*. 10 A. M. P. 80; temp. 100°. Ten grains of quinia given at 6 A. M. Urine greenish. I thought it best not to give injection.

1.15 P. M. P. 86; T. 101.5°.

6.45 P. M. P. 88; T. 101°. Pain in iliac fossa. No injection given. Urine decidedly green.

21*st*. 9.55 A. M. P. 96; T. 102.2°. Has taken ten grains of quinia. Urine of natural colour, so used injection as the temperature was high.

1.50 P. M. P. 88; T. 103.6°. At 11.30 feet cold. Gave two grains of calomel and sugar.

6.45 P. M. P. 90; T. 102.4°. Injection not used. A large operation at 4.30.

22*d*. 10 A. M. P. 80; T. 99°. Ten grains quinia taken. Urine at 11.30 last night, dark green. No acid used since 10.30 A. M. yesterday. Clear again at 6 A. M. Dark specimen analyzed by Dr. Acker.[1]

Two operations during the night. Bismuth; no more acid used.

[1] Colour, reddish-brown. Reaction, acid. Sp. grav. 1011. Chlorides, normal. Phosphates, diminished. Urea, normal. Albumen, trace. Sugar, none. Odour, none. Sulphates, normal or but slightly diminished. Sediment, small quantity, flocculent.

Microscopical Examination.—Few granular and epithelial casts. Few blood corpuscles. Epithelium from kidney, bladder, and vagina. Some leucocytes.

6.20 P. M. P. 82; T. 101.2°.

23*d*. 10 A. M. P. 78; T. 101.2°. Action at 8 A. M.

6.30 P. M. P. 94; T. 101.8°. Cool at 11 A. M. One action. Bismuth in it.

24*th*. 10.15 A. M. P. 72; T. 99.5°. Has had 15 grains quinia. Small action at 7.

2.30 P. M. P. 90; T. 102.8°. Restless and chilly.

6.30 P. M. P. 92; T. 102°. More quiet; feels better; pain over induration, none in womb or by vaginal touch. Has complained of hot flushes, and sweats slightly.

Here end Dr. Hagner's memoranda, taken during my absence.

25*th*. 20th day; 17th of fever, 10 A. M. P. 88; T. 99.6°. Desquamation not complete. Urine has to be drawn, quantity varying daily from forty to fifty ounces. Tongue clean; appetite good. Patient thinks she is improving, and expects to be up soon. She desires to see the baby, which has since its removal from the breast been kept in an adjoining room. She complains of nothing except pain upon pressing in the region of the induration before referred to. Vaginal examination discloses nothing wrong except a slight muco-purulent discharge from the os. No tenderness. The induration cannot be reached, nor can any pelvic tenderness be detected in its vicinity by the examining finger. The induration measures five inches in length and one-and-a-half inch transversely. It extends from one inch below the right superior spinous process of the ilium backward following the direction of the crest, is slightly movable, very tender, especially along the upper posterior part. It seems to begin in the region of the ilio-cœcal valve and extends upwards and backwards, and appears to be a perityphlitis. Fluctuation cannot be detected. The poultices were continued. No medicine, unless pain.

7.30 P. M. P. 92; T. 101°. Had passed a perfectly quiet day, entirely free from pain. A natural movement from bowels during afternoon.

26*th*. 21st day; 18th of fever, 10 A. M. P. 78; T. 98.4°.

27*th*. 22d day; 19th of fever, 10 A. M. P. 96; T. 97°.

8 P. M. P. 72; T. 98.2°. Induration diminished and very much less tender. Occasional twinges of pain in region of induration, occasioned by passage of flatus. The temperature at no time during the day reached the norm. Appetite good. No opiate necessary. Ordered one tablespoonful of the elixir of Calisaya three times a day.

30*th*. 25th day; 22d of fever, 10 A. M. Since last report patient has continued to improve. The induration has rapidly diminished, tenderness entirely gone, except upon firm pressure, and then very slight. Passes flatus frequently, but painlessly. The temperature has varied from 97.8° to 98.2°, and the pulse from 72 to 78. No stool; some distension. Appetite excellent. Strength improving. Ordered an enema to be given early next morning consisting of one ounce of olive oil and six ounces of tepid water.

Oct. 1*st*. Condition as noted yesterday. The enema was retained; no stool; ordered its repetition at night; and if no movement from the bowels, a dose of the following mixture to be given at an early hour the next morning, before taking any food: Sulphate of magnesia 4 drachms, aromatic sulphuric acid q. s., and water two ounces. Dose, one tablespoonful.

2*d*. A free evacuation of the bowels this morning. Patient feeling much better, and anxious to be allowed to sit up. In addition to usual diet, allowed corn-meal mush and milk.

11*th.* The patient has continued to gain strength. The bowels have acted regularly and painlessly. Bladder evacuated voluntarily for a week past. The desquamation continues. Patient sitting up. The diet has been liberal since 2d inst., consisting mainly of solids, meats, game, oysters, and eggs.

There has been no return of the lacteal secretion. The breasts are shrunken. This is an unusual result.

13*th.* Since last visit the baby had been fretful; to-day it was discovered that its body and limbs were covered with a scarlatinous eruption, not intense, but sufficiently distinct to be easily recognized. The throat was reddened.

The attack ran a mild course, without any apparent subjective symptoms other than those above stated. Desquamation began on the fifth day, and was very slight. Recovery was complete.

29*th.* Mother and child perfectly well. There is partial return of the secretion of milk. It was discovered by the mother yesterday.

Diagnosis and Symptomatology.—The case was a typical one. The patient was a primipara. The onset occurred within the first seven days after delivery, and began with a chill near the close of the first half of the fourth day, during the day on which, in a large majority of cases, the initial chill occurs. The rapid elevation of the temperature and increased frequency of the pulse, quickly followed by the eruption of an intense exanthem with sudamina; the slight anginose affection, peculiar appearance of the tongue, quick succession of diarrhœa, and prompt commencement of desquamation are the special characteristics of the development and progress of scarlet fever in a puerperal woman. The suppression of the lacteal secretion and offensiveness of the lochia are not usual, though not exceptional. The acute suppression of urine during the night of the fifth day of the fever, escape of albumen, formation of epithelial casts, and desquamation of the epithelium of the pelvis and tubules of the kidneys are phenomena not previously observed. They may be attributed to the continuous high temperature, and increased functional activity of those organs, produced by the intensity and extent of the cutaneous inflammation. The ordinary physiological transudation must be seriously disturbed, if not wholly arrested, by a condition of heat, congestion, and inflammation which would destroy and separate the epidermis as if it had been scalded. That such congestion of the kidneys did take place seems to be demonstrated by the facts that up to the night of the fifth an excessive quantity of urine had been daily secreted, and that during the greater part of the twenty-four hours beginning at 1 P. M. of that day, that is, from 8 P. M. 13th to 10 A. M. 14th (14 hours), only eleven ounces were obtained, whereas the ten hours, including seven before and three after the period of suppression, yielded thirty-three ounces; and that after relief was obtained the secretory activity was resumed in excess. The clinical history and circumstances of the night corroborate this conclusion. The night was passed in sleeplessness, restlessness, and tossing of arms to and fro. Then also speedy restoration followed measures promptly executed, upon the earliest

recognition of the dangerous complication. Total suppression of the lacteal secretion and lochial discharge, the albuminuria and urinary casts were undoubtedly due to the continuous elevated temperature. These conditions are not enumerated in the analysis of the cases cited by Olshausen. On the contrary, he states that the secretion of milk and urine, and the lochia remain undisturbed. Offensiveness but not suppression of the lochia has been occasionally observed.

At no time could septic poisoning be proved, nor was there any symptom after the appearance of the eruption which definitely indicated such absorption, though constant anxiety was felt that such a dangerous complication might be added to a condition already perilous. Septicæmia is not enumerated by Olshausen, but in a very small proportion of the reported cases other puerperal affections have occurred. In twenty-one of the one hundred and forty cases cited and analyzed by Olshausen some such malady was present; the most frequent being "a slight and usually evanescent tenderness of the uterus." Inflammatory affections of the pelvic organs are of the greatest rarity, and must be regarded as casual complications. The simultaneous total suppression of the lochia and occurrence of tympanites during the latter part of the fifth day of the exanthematous fever were suspicious symptoms. In two of McClintock's cases peritonitis appeared on the tenth and eleventh days respectively, and in one of Martin's on the eighth day. The eruption of the exanthem did not follow the ordinary rule. Most frequently it begins instantaneously with the onset and rapidly extends over the entire surface, characterized by intense redness, and soon assuming a purplish hue. In this case the difference consisted in the delay of twenty hours and gradual extension, not having covered the surface completely until the expiration of forty hours. It seemed, however, more intense, because of the destruction and peeling off of the epidermis. The diarrhœa set in early. This is always an alarming symptom. Of Olshausen's collection of cases, fifteen of the twenty-one attacked with diarrhœa died. In this case it was obstinate, but not severe. Desquamation, as is most usual in the cases of recovery, began on the seventh day. Its occurrence on the sixth or seventh day may be regarded as a favourable sign, indicating that the danger of puerperal complications has passed. With the single exception of peritonitis, and that only in three of the reported cases, no complication has appeared during and after this period.

Cause and Pathology.—No one can doubt the correctness of the diagnosis in this case, but where, when, and how she contracted the disease cannot be ascertained. I could not have communicated it, for I had not seen a case for four months, nor could I learn of any case in the city. The discharged nurse had been, by the advice of injudicious friends, brought from the neighbouring city of Alexandria, but she assured me positively that she had not seen, and did not know of a case. Sundry presents and

articles of clothing for the baby had been sent to the house, some from a distance, but the poison could not be connected with them. The patient was an active woman, attended personally to her domestic affairs, and was out the day before her confinement. The analysis of the cases reported by Olshausen shows conclusively that the period of incubation may be greatly prolonged; that is, that a pregnant woman may become infected, that the poison will remain latent until labour has terminated, and that the possibility of an outbreak lessens with the lapse of time after delivery, and ceases after the seventh day. He advances the theory that the condition of pregnancy is antagonistic to the evolution of scarlet fever, though the woman may have been infected weeks, and even months, before the day of confinement, and that the puerperal state invites, intensifies, and accelerates its evolution. In support of this hypothesis he cites the fact that only seven cases of scarlet fever in pregnant women could be found reported prior to 1876, whereas one hundred and thirty-four cases of so-called scarlatina puerperalis had been reported. These theories are based upon the conclusion that the disease is genuine scarlet fever, modified somewhat by the conditions of puerperium, but not in any manner allied to or dependent upon either pyæmia or septicæmia.

Malfatti, as early as 1780, enunciated the doctrine which Olshausen seems to have established; but Braxton Hicks[1] and others of the English school continue to maintain the view that it is a form of puerperal fever deriving its special characteristics from the scarlatinous infection. They rely upon the impossibility of tracing, in some cases, the source of the infection, the absence of severe angina, the appearance of the disease within the first few days after delivery, and the extraordinary mortality in support of the doctrine of a special form of puerperal fever. But such facts, and they must be admitted to be facts, cannot be accepted as arguments in support of such a conclusion. For the history of the many epidemics of scarlet fever, even those in which cases of scarlatina puerperalis have occurred, with the varying grades of intensity, numerous irregularities of form and type, and different percentages of mortality, and the constant occurrence of sporadic cases, in which it is impossible to ascertain the source of infection, all contradict such an hypothesis. The very fact, cited by its advocates, that the disease will reproduce in a susceptible person, whether pregnant or not, genuine scarlet fever, seems conclusive against the deduction that a lying-in woman infected with the scarlatina poison has puerperal fever. The prolongation of the stage of incubation has its analogies in the frequent continued latency of the malarial, typhoid, and typhus fever poisons. It is true that cellulitis, endometritis, peritonitis, and lymphangitis have occasionally complicated such cases, but those circumstances do not prove that scarlet fever is dependent upon such

[1] On the Relation of Puerperal Fever to the Infectious Diseases and Pyæmia. Obst. Trans. London, vol. xvii. pp. 90–174.

local lesions. On the contrary, cellulitis, peritonitis, and lymphangitis are not uncommon sequences of the ordinary and genuine fever as we are accustomed to see it in non-pregnant women and children. In many of the cases (Olshausen) the source of infection has been positively demonstrated. Such was the case in a number of Hicks's, some of McClintock's and Halahan's, one of Olshausen's and Clemen's, and three of Schneider's cases, and in many other instances, epidemics of scarlet fever prevailing at the time.

The clinical history of the case reported presents a typical picture of a case of scarlet fever. Nevertheless, the suppression of the lochia and lacteal secretion must be regarded as symptoms of either septicæmia or other puerperal complication.

Mortality.—This is very high. Forty-eight per cent. of all the reported cases died. The earlier the advent of the disease after delivery the higher the death-rate, being as high as seventy-five per cent. of those seized immediately after the labour. The character of the prevailing epidemic also exercises considerable influence.

Treatment.— Antipyresis, support and stimulation, and avoidance of purgatives, constitute the important principles of the treatment. It will be seen by reference to the clinical notes that the treatment in our case was constantly varied, but the general principles referred to were never neglected. In fact from the beginning antipyresis and support were sedulously adhered to. The patient was carefully watched, and frequently it was as important to ascertain what not to do as to know what to do. The patient did not bear quinine very well, but better when administered in solution with hydrobromic acid. Even then the deafness and buzzing noises were very annoying. It several times seemed to lower the temperature very decidedly, but it quickly rose again. The salicylate of soda exhibited a more marked, though more evanescent influence. The effect of the combination of quinine, acid, and digitalis was more durable. More positive gain was obtained from the spongings with lukewarm water, but these were administered at a late stage of the disease, when defervescence might probably have taken place. To what height the body heat would have risen if the antipyretic measures had been omitted can only be conjectured. It is not improbable it would have passed the minimum of hyperpyrexia and added greatly to the gravity of the case. The daily excursions, except on two occasions, when antipyresis had been pushed, were very short—a significant indication of danger.

Flatulence was at one time very troublesome, but was relieved either by the enema administered, the occurrence of four stools during the night of the fourth day of the fever, or by the changes in medicine and diet.

The diarrhœa was controlled by the bismuth mixture, a dose of which was given after every stool from its beginning until the consistent and partially formed stool at 1 P. M. the eighth day of the fever. Then it

was suspended to be resumed either on the return of liquid, or frequently repeated movements of the bowels.

The diuresis[1] was extraordinary, especially during the seventh, eighth, and ninth days of fever. It must certainly have been due, in a measure, to the amount of liquid consumed. Thirst was considerable, and the patient frequently complained of the limited supply of fluid, notwithstanding the large quantity taken. On a former occasion I witnessed a similar instance of excessive secretion of urine, even exceeding this, occurring in a case of scarlet fever in a child aged ten years, which was followed by total suppression and alarming uræmic phenomena. The child passed through numerous sequelæ, and finally recovered after a protracted convalescence.

The apprehension of septic infection could not be dismissed after the initial chill, and several times during the progress of the exanthematic fever antiseptic intra-uterine injections were employed, more as a preventive than a curative measure. When on Sunday, the eighth day of the fever, the fever made such a rapid ascent from a previous satisfactory decline, which promised speedy convalescence, it was believed that some inflammatory complication was lighting up. I had conjectured that endometritis would follow the sudden and continued suppression of the lochia, and was not surprised to find it confirmed by the appearance of pus, and tenderness of the womb on the morning of the ninth day. It was complicated with cellulitis in the region of the rectal *ampoule*, and a perityphlitis. From this time until convalescence was established the case was complicated with a mild endometritis and an acute perityphlitis. These conditions subsided, and the case progressed rapidly to complete recovery.

It may be that the intra-uterine injections administered previous to the evening of the eighth day were unnecessary, but the fact that even so small a quantity of sanguineo-purulent fluid as was washed out on that occasion, and the larger quantity at each of the two injections on the next day, shows conclusively that the treatment was at least judicious, if not imperative, at that time. The presence of pus in the uterine cavity was not known until it was discharged by the injection, and several days might have elapsed before it would have been otherwise discovered; such delay might have proved a fatal mistake. The complete and satisfactory recovery is the best proof of the value of the antiseptic measures adopted.

[1] Relation between the fluid absorbed and the urine excreted in scarlatina, Medical News, Oct. 27, 1883, p. 462.

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