thalmoscope before, during and after her menstrual epoch. In this manner, and in this manner alone can the physical condition of the intra-cranial organs, as regards these secondary vascular changes, be determined, and a basis of fact acquired upon which to found a rational opinion as to the responsibility or irresponsibility of an accused person.

ERYSIPELAS IN CONNECTION WITH VACCINATION.

By JOSEPH GARLAND, M.D., Gloucester.

IN answer to inquiries made by the profession, in reference to the appearance and conduct of erysipelas in connection with vaccination, at Gloucester, during the months of January, February and March of the current year, I offer the following paper, giving in detail, as far as practicable, those cases that came under my observation and within my knowledge during that period.

CASE I.—Infant child of Mr. C. P., æt. 6 months. Vaccinated by Dr. H. E. Davidson Jan. 2, 1872, with virus from arm of its cousin, infant child of Mr. W. A. P., which child was vaccinated by Dr. Charles H. Hildreth. Both children were considered very healthy, and their vaccinations progressed favorably, the child vaccinated by Dr. H. meeting with no trouble whatever, the vaccination terminating in the usual healthy way. But the former child, vaccinated by Dr. D., was attacked with erysipelas Jan. 28th, twenty-six days subsequent to the insertion of the virus. The vaccine vesicles were perfect. Lymph was taken from them at the proper time, and they had resulted in well-formed scabs or crusts. These had fallen, leaving the surfaces unhealed. In the vicinity of these spots, erysipelatous inflammation started, spreading upwards and downwards upon the arm and fore-arm, until the whole limb was involved. It appeared next upon the opposite shoulder, thence spreading down over right arm and across back and upper chest. The disease disappeared in about two weeks, patient recovering perfectly.

This was the first appearance of the disease in this child, and it is not apparent that the parents of the child had ever suffered from it, although the progenitors, on the father's side, are well known to have suffered severely from erysipelas.

CASE II.—A. P., laborer, aged 50 years, was re-vaccinated by Dr. A. S. Garland, Feb. 5, with virus from a healthy infant

child of Mr. W. (with virus from which child twenty-eight others, adults and children, were vaccinated or re-vaccinated, with no subsequent ill effects). On Saturday, the day immediately succeeding his re-vaccination, Mr. P. was out in a severe snow-storm, at work. On the evening of the same day, he complained of chills, headache and soreness of limbs, soreness of muscles under the left arm, but no severe pain. Sunday, no better. Considerable nausea, some vomiting. On Monday, I was called to see him and found patient much prostrated. Tenderness in left axilla. No swelling or redness of skin. Complained of stiffness about the shoulder and lameness upon motion of arm. The points of vaccination were simply a little irritated, and surmounted by slight, half-dried scabs—no redness, swelling or other indications of inflammation around them or upon the arm. Tuesday morning, Feb. 6th.—A slight redness of skin was discovered under the left arm near axilla, and extending forward a little over pectoral muscle. The case was pronounced erysipelas. Patient prostrated. Pulse frequent and weak; headache and nausea still continuing. Wednesday.—A dusky redness of skin with considerable tenderness extending from axilla down left side to sixth rib was apparent. Constitutional symptoms worse. Thursday.—Some œdema and a slight boggy feel extending from axilla over side down to sixth rib, accompanied by great prostration of strength, a rapid and feeble pulse, and an anxious expression of countenance. The inflammation spread no farther upon the chest than a line drawn from middle of clavicle down through nipple of left side, and but slightly beyond the posterior margin of axilla directly down on the side to the sixth rib. The arm was not involved at all, not even the faintest redness or swelling being observable upon it. Though apparently so limited in extent, the effect of the disease upon the patient was alarmingly depressing, considering the short time it had been in progress. In fact, strength and nervous energy were so far exhausted, it was not deemed practicable to make extensive incisions. Dr. Hildreth, in consultation, confirmed the opinion. Death occurred on Friday, Feb. 9th, just one week from date of vaccination.

It is worthy of observation that this patient had been subject to attacks of erysipelas, both in hands and feet, at various times previous to this sickness—that his constitution was enfeebled, and that he was subjected to severe exposure, in inclement

weather, on the day just preceding the attack.

CASE III.—Child of J. B. P., aged 5 months. Vaccinated Feb. 1, by Dr. A. S. Garland, with virus from a perfect vaccine vesicle on a healthy child (25 other patients vaccinated or re-vaccinated from same child, and no case of erysipelas out of the number). The day after vaccination, an erysipelatous patch appeared upon the forearm. Vaccination did not take at all, the vaccinated points drying up at once, never giving rise to vesicle or areola. This case lasted but a few days, the erysipelatous inflammation being confined mostly to forearm and hand. Predisposition not ascertained.

CASE IV.—Child of Mr. I. S., aged 2 years. Vaccinated by me Feb. 1, with lymph from a perfect vaccine vesicle on the arm of a healthy Irish child, selected by me, in preference to many others, as most suitable to afford reliable virus. Feb. 5th. —Was called in haste to the child in a convulsion. Upon arrival, found convulsion had ceased, but patient was sick at stomach and very feverish. Upon inspection of arm, observed the vaccine vesicles just rising, and around them, on outer arm, reddish spots, mottling the skin, of pronounced erysipelatous look. This case progressed to a favorable termination, the whole of that limb only being involved. The disease lasted about two weeks—recovery perfect.

CASE V.—Child of Mr. E. II., Jr., aged 20 months. Was vaccinated by me at the same time and place, and with the same virus as the child above, Case IV. Was seized with a convulsion on the sixth of February, just one day later than the other child. Erysipelas developed upon the arm, following the same course precisely as in the case above, and terminating in recovery in about twelve or fourteen days. These children mentioned in the last two cases were cousins. The father of child, Case IV., had erysipelas when a boy, and others in the family are subject to the disease. The parents of child in Case V. have not had attacks of the disease in person, though it is clearly traceable, both on the father's and mother's side of the family.

CASE VI.—This was a nursing babe, about 8 months old. Vaccinated by myself Feb. 2, in connection with three other children; the father, mother and one child were re-vaccinated at the same time. All were vaccinated with virus from a healthy child 2 years old, no erysipelas having been known upon him before or since his vaccination.

This case was very severe. Feb. 7th, the fifth day of vaccination, upon appearance of the vesicle, the child was seized with convulsions, followed by nausea, vomiting, heat and general redness of the skin. Erysipelas appeared upon the arm in the vicinity of the points of vaccination, and spread rapidly up and down the arm to shoulder, then across the back to right shoulder, down right arm, down back, chest and over abdomen, finally fading away upon the thighs. After tedious sufferings, lasting more than three weeks, the child recovered.

CASE VII.—One of the other children of the same family, vaccinated at the same time as the above, had a mild attack of erysipelas upon the arm and forearm, lasting from the twelfth to the seventeenth day after vaccination.

The family tendency to erysipelas is noteworthy in these last two cases. The father had suffered from the disease several years since, and has recently had a severe attack upon the face and head. The mother clearly gives evidence of it in her system, and her mother and one sister are subjects of it.

CASE VIII.—Child aged 4 months. Parents residing one mile distant from residence of family just alluded to in Cases VI. and VII. Vaccinated by Dr. Davidson January 6th. Vaccination appeared to progress to a favorable termination, the crusts maturing and falling off, leaving the arm healed. Feb. 6th, a little more than four weeks after insertion of the virus, erysipelas appeared upon the right ear. I visited the child Feb. 7th, and found erysipelas upon the ear and right side of the face. The disease spread over the whole face and scalp, lasting about twelve days. The child recovered perfectly.

This case, it will be observed, was but one week further removed from date of vaccination than Case I. The point of development, however, differed materially. In this case we find a mother and maternal grandfather, both of whom had recently suffered from attacks of erysipelas.

CASE IX.—Child, 2 years old. Vaccinated by myself Jan. 26th. Taken very sick Feb. 8th, the thirteenth day after her vaccination. On being called, I found patient very sick, with vomiting, heat and restlessness. Upon inspection, the arm was found red in the vicinity of the dried or drying scabs. On making inquiry, I learned that the child had erysipelas upon the corresponding leg last summer. Though the seizure was violent, inflammation lasted but a

few days, rapidly spreading over the whole limb superficially, and then passing off.

This child was vaccinated on the same day and in the same family with two other children of different parents, and with virus from the same vesicle which afforded quills for them. These latter children were entirely exempt from ill effects; their vaccination was perfect and undisturbed.

CASE X.—Child, 13 months old. Vaccinated by me Jan. 29th. Was seized with a slight convulsion Feb. 9th, twelfth day after vaccination. Being called, I found the child recovered from convulsion, but, as in the other cases mentioned above, heat succeeded, accompanied by more or less vomiting. The vesicles upon the arm had matured, and were scabbing. Patches of redness were visible upon the arm, evidently erysipelatous. These coalesced, spread down upon the arm, fore-arm and hand, and up upon the shoulder, and after continuing a few days, not materially affecting the child, disappeared, leaving the vaccination undisturbed and the patient quite well. A brother of this child, a year and a half older, was vaccinated on the same day and with lymph from the same source, but no indications of erysipelas whatever appeared.

As to predisposition in this last case, it is not so clear as in the other cases cited, the parents not being aware of the disease at any time, in themselves or their parents, though rather suspicious that an uncle on mother's side was subject to it.

CASE XI.—This, the next and last case, occurred in the person of Mr. J. A., caulker, aged 55 years. He was re-vaccinated by me Friday, Feb. 2d. He had had primary vaccination thirty-five years before. Friday evening, Feb. 9th, complained of chilliness and soreness of limbs. Saturday, had headache, pain and soreness of limbs and back, catarrhal affection of head and throat. Obtaining no relief from domestic remedies, he sent a messenger for me Sunday morning. I found him as above described, and, in addition, with soreness of muscles of left arm, and in axilla, considerable cough, and with the throat and nasal passages much obstructed. I was told he was at work, on the Thursday and Friday preceding, under the bottom of a vessel all cold and wet, just hauled upon the railway from out of the dock. He said his arm felt lame and sore, but not painful. Upon inspection, I found scabs nearly dry upon the two places where virus was introduced, with areolæ slightly red, but quite limited. Upon anterior aspect of the arm, along the biceps muscle, there was a dusky

red appearance of skin, extending a little below the elbow over outer and upper part of forearm. Already too familiar with the disease, I could not fail to see its threatening character. Remedies seemed to arrest the disease for the first twenty-four hours, but at the end of the next twenty-four hours the whole limb was involved in intense inflammation, the cuticle being almost completely vesicated. The last part of the arm to be affected was that within the circle of vaccination. Despite all efforts, deep phlegmonous inflammation, with suppuration of nearly all the cellular tissue of the limb, followed. Free incisions were made. Extensive sloughs removed. The strength of the patient was closely guarded, and, in three weeks from the commencement of the disease, the limb was free from sloughs and in a healthy, healing condition, the patient able to sit up most of the day, and we flattered ourselves he was fairly on the road to recovery. But, on the eve of Thursday, March 7th, the twenty-sixth day from commencement of the first attack, he was seized with violent pain in the abdomen in the region of the umbilicus. The bowels were freely moved, but the pain, despite all remedies used, persisted. Swelling and tenderness of the abdomen commenced next day, and, in just forty-eight hours from commencement of last attack, the patient died.

It should have been observed that, two nights previously to this last attack—night of March 5th, a bitter cold night—Mr. A. awoke, finding his arm cold, and a chilly sensation creeping over his back. The next day, the attack upon the bowels commenced. I doubted not but that this attack, ushered in by the previous chills, was a second seizure or development of erysipelas. No autopsy was attempted.

It is not clear that Mr. A. ever suffered, really, from erysipelas prior to this sickness, though he had been known to complain of chapping, smarting and burning of the hands at various times. Members of the family have declared to me that they have no knowledge of a case of the disease in the family prior to this, although a member of the profession avers that he treated a younger brother for the disease some years before.

REMARKS.—In the recital of the above cases, I have omitted the treatment as not pertinent to the object of this paper.

From my experience with and observations upon the cases here presented, I am convinced that erysipelas was epidemic in Gloucester during the latter part of Janu-

ary, through February and a part of March. And, in further proof, I could introduce quite a number of cases besides those here recorded, having no sort of connection with vaccination, which occurred during that period.

I hold vaccination to be eminently an exciting cause in constitutions predisposed to erysipelas. All the cases above cited, with a single exception or two, can be directly traced to predisposition, either from previous attacks in the individual, or from the blood of relations.

In regard to the fatal cases, occurring in adults, it is worthy of remark that the subjects were both severely exposed after re-vaccination. In one case, the patient, almost immediately after the mechanical operation, was out in a severe snow-storm at work. This fact, taken in connection with his admitted predisposition, seems almost, if not quite, sufficient to account for his attack, setting aside the vaccination, as an exciting cause, altogether.

Another, contrary to express declarations made personally to him by me, at the time of re-vaccination, in regard to the dangers of exposure to cold, was at work beneath the wet bottom of a vessel, with cold caulking-iron in hand, before the arm was fully well from the effects of re-vaccination. This fact, also, taken in connection with the strong presumption of predisposition, seems sufficient to explain the severity, if not the origin, of the case. I deem it *the* cause.

The selection and use of virus in these cases is a matter worthy of some consideration in this place. The virus first made use of by me, at the commencement of the smallpox excitement in Gloucester, about the last of December, 1871, and first of January, 1872, was obtained from Dr. Henry A. Martin, Boston Highlands. With this virus, I started those vaccine vesicles from which lymph was taken for further and very general use by me. I have no doubt the virus was good. In no case did I take lymph from a vesicle after the eighth day from insertion of virus (generally, the fifth or sixth day, or as early as I could get it), and in no case except from a perfectly-formed vesicle. All my vaccinations were made from fresh lymph upon the quill or ivory point. In no case did I use a scab or crust, or virus therefrom, to my knowledge. I cannot admit that the erysipelas I had to contend with in the cases cited was attributable to the virus used, for divided portions of the same lymph used in these cases were used upon hundreds of other arms with no manifestation of erysipelatous in-

flammation whatever. And, further, in proof of the little danger there is of introducing erysipelas into the system by vaccination with lymph taken from well-formed vesicles at a proper time, virus was secured from the arm of the child in Case I. by a friend, prior to the development of erysipelas on the child's arm, and furnished me with which to vaccinate his son. And no more healthy vaccination could be found than resulted from that virus. Case IX. also furnishes proof on this point. On the sixth day of vaccination, when the vesicle was but just forming, having previously selected the child as a fit subject, I took lymph, *i. e.* six days before erysipelas was developed, and with it vaccinated several children, and re-vaccinated a number of adults, and, though anxiously awaiting the result, after I found my mistake in the child, I was rejoiced not to find one erysipelatous arm among them.

The method of performing the operation of vaccination may be open to criticism. For the last few years, I have been in the habit of following the recommendation of Dr. H. A. Martin, Boston Highlands, that of scoring the cuticle lightly with cuts at right angles to each other and then rubbing in the virus. I do not doubt it may be more sure to take, and take *largely*, too, according to my experience; but in sensitive children, with erysipelatous tendencies, I query whether it may not be more likely to excite severe constitutional disturbance than the simple puncture and insertion of the quill point.

Gloucester, April 26, 1872.

SINGULAR CASE OF PREGNANCY.

By D. D. GILBERT, M.D., Boston.

In the month of October, 1870, I was called upon to examine an unmarried woman, about 18 years of age, who claimed that she was with child. Her story was, that she had, on the 14th of June previous, gone with a young man, from her home in a neighboring town, to attend a circus entertainment in the city; that when the entertainment was finished, it was found to be too late to obtain any conveyance home and she was obliged to pass the night at a public house with her friend; that her friend attempted to have criminal connection with her, but, encountering resistance from her, finally gave up, muttering with an oath as he did so, "I would have been all right if I had brought some chloroform."