ishes, so that one is led to suppose that the organism becomes habituated to the drug. The original article is in Pfüger's *Archiv*, vol. xxviii., p. 478.

RELATIONS OF THE THORAX AT BIRTH.

A few years since Bernstein asserted¹ that after the first inspiration the thorax of the new-born child acquired a new set, causing an enlargement of the chest, and consequently producing the aspiration of the lungs. Hermann now attacks this view. The position of the fetus in utero, the arms crossed in front and the back curled up, produces an extreme expiratory disposition, which would, of course, cease at birth. This is the only enlargement actually occurring. Bernstein has shown that there is no aspiratory pressure, holding the lungs expanded against the thoracic walls, in the fetus. Hermann now shows that if a manometer is connected with the chest of children, having died when a few days old, that is, after having breathed for some time, that there is still no aspiratory pressure, hence there is no occasion to account for the development of such a pressure at birth. It is developed only later, probably as a consequence of growth. Bernstein found such a pressure because he blew up the lungs from the trachea and allowed them to collapse; Hermann states that this produces an aspiration otherwise not present. Our author further discusses the advantages to the child of its respiration without aspiration, and to adult man of his respiration with it. For the various conditions of the lung he proposes the following terms: "anectatic" for lungs containing no air; "protectatic," collapsed but containing air, as in pneumothorax; the air in a protectatic lung is the "minimal air." It would be interesting to study the development of the aspiration after birth.

A PHOTOMETRIC BACTERIUM.

Th. W. Engelmann, of Utrecht, has found a small organism with a flagellum at its anterior end, which he has named *Bacterium photometricum* on account of its extraordinary sensitiveness towards light. Thus if a number of them are brought under a cover glass, the whole of which is kept dark except one spot through which the light passes, then they will gradually accumulate in the light spot, and it can be seen that although they may pass from the dark to the light, they cannot go the other way, for the instant they reach the darkness they make a sudden backward start, which brings them into the light again. They are colored, and when examined spectroscopically it is found that they absorb the orange-yellow part of the spectrum. If now a small spectrum is thrown upon these bacteria in the field of the microscope, it is seen that they accumulate in just this orange-yellow band, precisely as they before accumulated in the light spot. But there is another still more marked gathering in the ultra red portion of the spectrum.

Engelmann has utilized this fact to test² whether we cannot perceive the ultra red rays merely because the media of the eye cut them off, or whether they reach the retina without causing sensation. For if the media cut off the ultra red rays then from a spectrum of light, which has passed through those media, those rays would be cut off and the bacteria would not accumulate in that portion of it. Experiment shows that the bacteria under those conditions do still gather in the ultra red, those rays therefore do pass through the media of the

eye. We must therefore assume that they are not seen because the retina is not sensitive to them.

BACTERIA IN HEALTHY BLOOD.

There appears to be not much question that bacteria may be living in the tissues or in the blood or lymph without producing necessarily noticeable disturbances. Olivier and Richet are stated to have examined 150 fish of various genera and species, and found in all cases microbes in the blood and lymph. They regard their occurrence in these hosts as normal.³ Mitrophanow⁴ has maintained a similar thesis in regard to two parasites, which he has described from two genera of fishes, and referred to the genus *protomonas*. I am inclined to think that Mitrophanow's parasites are allied with the bacteria, and not with the protozoa.

An extreme form of the theory that bacteria, etc., are normally present in the healthy state is the belief that they are essential to the digestive processes. Béchamp⁵ has gone beyond this, asserting that the granules in the liver and pancreas are really microbes, which pass out into the secretion. The total lack of foundation for this view, and the unscientific character of Béchamp's article, is well shown up by Johannes Freuzel.⁶

It has, however, been shown by recent investigations that certain animals and plants may live together to their apparent mutual benefit. Thus the green bodies occurring in various animals have been discovered to be plants cells, living in the body of the radiolarian, hydra, or what else it may be. Both organisms seem to be benefited by this association, to which the name of *symbiosis* has been given. It thus appears that there are no animals really having chlorophyll in themselves.

Hospital Practice and Clinical Memoranda.

FEMALE HOSPITAL, ST. LOUIS.

J. B. SHAPLEIGH, M. D.

A CASE OF PUERPERAL CONVULSIONS.

THE following case of puerperal convulsions was kindly furnished me by Dr. Willis Hall, in whose practice it occurred.

Rosie L., German, aged eighteen, of stout, robust frame, and in good health. Menstrual functions normal. Labor began at nine P. M. October 29th. Was first seen by Dr. Hall at six A. M. October 30th, when he learned that she had had a convulsion, from the account given by the nurse probably epileptic. The vertex presented in the third position, and the os was found slightly dilated. Fifteen grains chloral hydrate per rectum were ordered. She rested quietly under the chloral until 8.30 A. M., when she had another convulsion, which was recognized as puerperal. There was another at nine, and one at ten A. M. These invariably commenced by twitching of the palpebral muscles, succeeded by a drawing up of the corners of the mouth and general tonic contractions, followed by clonic movements. At this juncture twelve ounces of blood were taken from the arm. Patient had another

³ Comptes Rendus, Academy Paris, 1883.

⁴ Mitrophanow, Biol. Centralbl., iii., 35.

⁵ Béchamp, Arch. Physiol. Norm. Path., October, 1882.

⁶ Frenzel, Biol. Centralbl., iii., 49.

¹ Pfüger's Archiv, Bd. xvii., p. 617.

² Engelmann, Pfüger's Archiv, xxx., 125.

convulsion at 11.15 A. M., followed by five more between twelve M. and one P. M.; paroxysms increasing in severity all the time. At this time, after drawing off fourteen ounces of urine, forceps were applied. During delivery she had another convulsion, which chloroform did not control. Child was soon delivered, and patient rested quietly till 2.40 P. M., when she had another convulsion. One third grain morphia sulph. was given by hypodermic injection, and chloroform was cautiously and continuously given till eight P. M., when the morphia was repeated.

There was some slight hour-glass contraction of uterus, but it was easily dilated, and placenta removed piecemeal, after which one grain ergotone was given hypodermically.

October 31st, 7.30 A. M. No convulsions so far; sleeping quietly. At four and eight P. M., same; still sleeping.

November 1st. Rested quietly all night, and awoke refreshed. Took nourishment well at intervals of two hours through the day.

From this time on patient improved steadily and rapidly, her convalescence being delayed by retention of urine for two days. No albumen found in urine. It was learned afterward that patient had had very severe headache for three or four days prior to confinement.

ANEURISM OF THORACIC PORTION OF DESCENDING AORTA.

Rosa D., colored. Patient entered the hospital on July 3, 1882, complaining of great pain under left arm, and radiating down its under surface. This pain is paroxysmal and very severe. No cause can be found for it, as both heart and lungs yield normal auscultatory signs. She denies any syphilitic history, but has undoubtedly had the disease, and it was at first thought that there might be some syphilitic growth pressing upon the axillary nerves. Iodide of potassium was given in large doses with temporary relief, but the pains soon became as severe as at first, and seemed to have a periodicity about them suggesting malarial neuralgia. Quinine yielded good results for a few days, but then lost all power over the trouble.

The case continued about the same, morphia being given as needed to subdue the pain, till the first week in August, when she had a slight cough and a slight pulmonary hæmorrhage. Auscultation at this time reveals only a slight thrill on respiration on right side, with some increased vesicular murmur in both lungs. The cough disappeared entirely by the 15th of August, but there remained a little difficulty in breathing. General condition gradually becoming worse.

August 25th. Patient had another small hæmorrhage early this morning. Percussion unduly resonant anteriorly on left side, and dull behind. Right side normal, but of high pitch. Auscultation gives a murmur of greater intensity than normal over the chest, except posteriorly on left side, where it is very weak. Find great difficulty in breathing, and the subcutaneous tissue about left supra-clavicular region and upper part of chest presents considerable serous infiltration. There is also this morning a pulsating tumor, which can be covered with the hand, situated between right scapula and the spinal column. Patient states that the difficulty of breathing and swelling about neck came on suddenly during the night, and the tumor was not present at yesterday's examination. The tu-

mor has no thrill or murmur, but the diagnosis of aneurism of the aorta was made, and the dose of iodide increased as much as patient could tolerate. This was one drachm three times a day. Patient gradually grew weaker and more emaciated, but with no appreciable growth in the tumor, which has now become very painful, until the 30th of August. On visiting patient this morning she was found completely paralyzed from the waist down. Bladder and bowels entirely without control. On raising patient to a sitting posture to examine the tumor a decided lateral curvature of the spine, with its convexity to the left, was noticed. Patient complains of great pain when moved. It was supposed that the sac had produced necrosis of the vertebræ, and was now pressing upon the spinal cord.

Patient gradually sank, with no change in the local conditions, except swelling of left hand and arm, until October 9th, when she died.

On post-mortem examination an aneurismal sac was found encroaching on the upper portion of the anterior mediastinal space, and pressing the left lung forward. Heart itself and right lung normal. The sac began just beyond the origin of the left subclavian artery, and extended to within about two and one half inches of the diaphragm. It was about three and one half or four inches in diameter, with its largest part just at the descending portion of the arch. The sac was firmly bound to the chest walls, and where it crossed the vertebral column had completely destroyed the bodies of the vertebræ and pressed upon the cord. It was impossible to remove it without great mutilation of the body, which was not permitted.

The case is remarkable for the vague and indefinite symptoms at the beginning, their sudden appearance, and the size of the sac. I forgot to state that this was filled with soft post-mortem clots, but only contained a few small ante-mortem ones, and these of recent date.

NOTES ON A CASE OF PLEURISY WITH AN UNUSUAL AMOUNT OF EFFUSION.

BY A. E. DARLING, M. D. HARV., KILLINGLY, CONN.

On January 14, 1882, I was called to see Mr. L., a hardware merchant, sixty-three years of age. He is a stout, well-built man, six feet in height, weighing about one hundred and eighty pounds. He had been treated for five weeks previous to my first visit by a quack for "liver complaint." His history was that of sub-acute pleurisy, commencing with pain in the right side, but at no time severe enough to prevent him from attending to his ordinary avocation.

The pain soon disappeared, while the gradually increasing dyspnœa and loss of strength obliged him to relinquish his business.

On my first visit I found him sitting up, countenance pale, marked dyspnœa upon exertion, slight hacking cough, no expectoration, not much appetite, tongue coated. He could lie only upon his right side. On examination of the chest complete flatness was found extending as high as the clavicle upon the right side. The normal vesicular murmur was absent throughout the entire lung. Bronchial respiration was heard only in a small space over the scapula. The movements of the chest during expiration were irregular, the right following the left. The intercostal spaces were pushed