great care in manipulation it is fair, from experience, to place them within five per cent. The errors noted by Drs. Henry and Nancrede need not be insisted upon too strongly, because they can be avoided by great care and experience in manipulation.

Having, then, by careful experiments on standard solutions of blood discovered the error of the instrument and its method of practical use, we have a definite starting-point, and ground upon which to base the circumstances which may govern or cause any variations which are greater than this error. In the case of my experiments, reported in your number of April 3d, I found that this error did not exceed five per cent. I do not lose sight of the fact that there are circumstances in the individual upon whom the experiment is made which may affect the deductions as to the degree of corpuscular richness of blood. By calculating the errors of the instrument and method of using it, careful experiment will determine these circumstances.

For the information of your readers who may be desirous of making a series of experiments to differentiate their results, I will add that the image of the corpuscles and ruled lines in Gowers's apparatus may be projected by means of a camera lucida eye-piece upon a white screen; in this way the corpuscles may be pricked out and enumerated.

ROBERT AMORY.

LONGWOOD, April 11, 1879.

A CASE OF PULMONARY THROMBOSIS.¹

BY E. CHENERY, M. D.

I REPORT the following as a case of pulmonary thrombosis, not because I can certainly demonstrate that the obstructing clot originated in the lungs, where it did its mischief, but because it was an infarction of vessels belonging to the right half of the circulation. Indeed, my impression is that the clot started from the neighborhood of the uterus, and came up through the inferior vena cava, at last lodging in the trifurcation of the right pulmonary artery, where it afterwards augmented in size till it produced complete obstruction to the bronchus of that vessel. But in saying this I am not unaware that Juergensen teaches that "pulmonary infarctus is not to be thought of unless undoubted sources for the production of the embolism be demonstrated." This case is interesting as illustrating how the accident, so to speak, presents itself unawares, and might be mistaken, as it doubtless has been, for collapse.

I was sent for on the morning of January 4th to see a maiden lady aged twenty-nine, who had enjoyed excellent health, rarely having been sick, and not at all recently. Two days before, as she was getting over her catamenia, she took a sudden cold, and had not since been out. I found her in bed, with flushed face and slight cough. She had headache, a pulse of 120, and respiration 34. I thought at first sight that she had pneumonia. There were no abnormal heart sounds; percussion was a little dull over the right back, but there was no crepitation, and the case was regarded as one of congestion of the lungs, with threatened pneumonia. She received a portion of sulphate of magnesia and aconite. The next day she seemed much better; the cough was gone and the dullness diminished, while the pulse had fallen to 100 and the respiration to about 26. She now complained of pain and tenderness in the region of the uterus. The next day she was much the same, only the tenderness had extended higher up, giving me to fear that I was to have a case of pelvic peritonitis. Warm applications with turpentine were directed to be employed over the abdomen, and liquor ammoniæ acetatis was given. During the night she seemed worse, had diarrhœa, and did not sleep. At 5.30 the next morning she felt a sharp, cramp-like pain in the left side in the region of the heart, which began to beat heavily. She became oppressed for breath, the lips turned blue, the skin growing cold, and profuse perspiration starting out at every pore. When I saw her at nine A. M., her whole surface was cold, and yet not so to herself, and the clothes next to her were saturated with the abundant sweat. Auscultation showed the air entering into all parts of the lungs. There was no pulse at the wrist, and apparently but little action on the left side of the heart, while the right was laboriously at work, with unusual impetus against the ribs and sternum, and loud sounds of the valves. Nothing could be plainer than the great disproportion in the action of the two sides of the

¹ Read before the Suffolk District Medical Society, January 25, 1879.

heart, with sounds extending further to the right than to the left. There was no cough nor bloody expectoration. Her voice was reduced to a whisper, but her intellect remained clear. At five p. m., Dr. J. H. Warren saw her with me, and judged in the case as I did. The temperature under her tongue at this time was 99.50° F. Her friends and herself were informed of the nature of the case, and what would most likely be the result. She grew gradually worse, more and more cyanotic, short of breath, and weak, and died at midnight, eighteen and a half hours after the first symptoms of danger. It is not to be assumed that the pain originated on the instant the local infarction began, but only when the obstruction to the circulation became sufficient to be embarrassing to the heart. That the obstruction was not in the right heart itself is plain from the clear though loud sound of the valves, nor was there any evidence of regurgitation, as there would have been had the valves been tied down. It is equally plain that the blood did not return to the left heart except in partial amount; hence its collapsed and inactive condition, as also that of the arteries and capillaries of the systemic circulation. Hence, also, the profuse sweating. The prominent symptoms about the heart were clearly brought out in an experiment on a dog, a few days later, when, having him under ether and his abdomen laid open, the diaphragm was punctured, allowing of collapse of the left lung, with obstruction, of course, to the left pulmonary circulation; then quickly raising the chest wall the heart was brought into full view and handled. As the obstruction to the circulation in the lung came on the right heart enlarged, and put forth unusual effort to overcome the hindrance, while the left heart became shrunken and ineffectual in its efforts to supply the aorta, which also fell into collapse. By reason of the engorged right side the heart was drawn towards the right, and its impulse was carried further in that direction and in front than normal, with a corresponding recession from the left, both as to impact and valvular sounds. Thus what was here seen was in perfect accord with what was felt and heard in the case of my patient.

In September, 1875, a case of double thrombosis came under observation, in a lady forty-six years of age, the clots forming three hours from each other, and arising, without doubt, from blood-stasis, as she had been sick for some time with malignant right ovary. After the first attack, which occurred at three a. m., I saw her. Her symptoms were then precisely like the case I have detailed. Warmth, friction, and stimulants changed the character of the surface a little, and rendered her somewhat more comfortable for a time, when I left her. At six o'clock another attack occurred, and she almost immediately expired, her face being almost as cyanotic as if she had been hanged.

Dr. R. H. Fitz kindly conducted the autopsy for me. According to the general fact, the right lung had the older clot, being the one usually obstructed when only one is involved. The clot dipped into the three branches of the artery. On the left was a similar clot lodged in the bifurcation, more recent than the former, but distinct in character from the post-mortem coagula. The age of the two clots doubtless corresponded with the two seizures.

Notwithstanding Bristowe teaches that "the symptoms of pulmonic obstruction are by no means typical," we feel that, with the above facts before us, we are on safe ground for concluding that the case of our late patient was a case of pulmonary obstruction, probably of the right side, from a clot either originating on the spot or brought there from a distance.

ELASTIC CAUSTIC PENCILS OR BOUGIES.

BY WILLIAM A. BYRD, M. D., QUINCY, ILL.

IN the JOURNAL for March 20, 1879, page 405, appears: "Dr. Pajot prepares an elastic pencil of caustic by dipping a laminaria tent, diameter two millimetres, into a rather thick mucilage, and afterward rolling it in finely pulverized nitrate of silver; when dry it forms an elastic pencil which may be readily introduced into the uterine or other cavity without fear of fracture."

The first article I ever contributed to a medical journal was to the *St. Louis Medical Reporter* in 1867 or 1868, describing the treatment of a case of prostatitis by means of slippery-elm-bark bougies dipped in a saturated solution of nitrate of silver and allowed to remain until thoroughly impregnated with the solution; then taken out, dried, and passed down the urethra to the affected spot, and allowed to remain until the nitrate had exerted its cauterizing