

expiration of the five minutes, when otherwise I might lie and count the strokes of the clock for hours. For many years it has been my custom to instruct anemic and nervous patients to practice the method for five or ten minutes on first lying down at night, without explaining the reason further than to say that it would expand the chest. It may also be practiced when sitting at a desk or reclining in an easy chair, and it really does oxygenate the blood and improve the breathing capacity of the chest.

T. W. WILLIAMS, M.D., Milwaukee, Wis.

Athletics and Health

To the Editor:—Permit me to commend the stand which you take in your editorial on athletics, February 8, particularly your expression with regard to the value of such sports as may be continued after a man's college course is completed. In these matters I feel sure that men engaged in physical education are glad to have the opinions and cooperation of men who are engaged in the general practice of medicine.

DUDLEY B. REED.

Medical Examiner, Division of Physical Culture and Athletics, University of Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

VASECTOMY; TECHNIC AND EFFECT ON SEXUAL INTERCOURSE

To the Editor:—1. Please let me know the technic of vasectomy as it is performed for the sterilization of criminals.

2. What effect does the operation have on the ability of the individual to have sexual intercourse, other than preventing the ejaculation of spermatozoa? L. W. HOWE, M.D., Coldwater, Mich.

ANSWER.—1. The technic of vasectomy was described by H. C. Sharp in *THE JOURNAL*, Dec. 4, 1909, p. 1897, as a means of preventing procreation in defectives. The subject was discussed in *THE JOURNAL*, Sept. 30, 1911, p. 1152, where a considerable bibliography is given. Sharp describes the technic as follows:

After cleansing the scrotum with soap and water I bathe the part in alcohol, then grasp the spermatic cord between the thumb and the index-finger of the left hand, detect the vas, hold it firmly and fix it with a pair of bullet forceps, then cut down on it, draw it through the scrotal wound by means of a tenaculum hook, strip it of all membranes and the accompanying artery, ligate above and sever, cutting away any portion from the vas that may have been damaged in the manipulation. This is done in order that the end next to the testicle may not become closed. It is very important that it shall remain open, in order that the secretion of the testicle may be emptied around the vessels of the pampiniform plexus and there absorbed, for it is through this process that the economy receives the tonic effect of the secretion; also where the end closes there is likely to be cystic degeneration. The action of the muscle closes the skin wound and no stitch, collodion or adhesive plaster is needed. The patient returns to his work immediately and suffers but little inconvenience.

The operation in the female is more difficult, but, if skillfully done, no more hazardous. The oviduct is reached through a median incision, the tube ligated near the uterus and severed beyond the ligature.

2. It has no other effect.

A report of a supreme court decision upholding vasectomy is given in the *Medicolegal Department* of this issue of *THE JOURNAL*.

FETAL DEFORMITIES OR DEFECTS NOT DUE TO UNSUCCESSFUL ATTEMPTS AT ABORTION

To the Editor:—If a pregnant woman injects into the gravid uterus, by means of a small rubber syringe, turpentine or other irritant which fails to produce abortion, will this attempt have any effect on the growth and development of the fetus? If the fetus is carried to full term will the child be normal or is it liable to birthmarks and deformity? Is the amniotic fluid sufficient protection?

M. F. DAUBENHEYER, M.D., Butlerville, Ill.

ANSWER.—There is still a widespread belief among both the laity and the medical profession that attempts at abortion which do not lead to the expulsion of the egg may in some way injure it so as to cause birthmarks or other deformities. Sci-

entific clinical observation or experiment furnishes little or no basis for this belief.

The theories of the causation of monstrosities may be classified roughly as follows:

1. Supernatural and fantastic theories. These include those theories that assume as factors the influence of gods or evil spirits, hybrid unions and mental impressions.

2. Theories based on trauma and pressure. These assume that the embryo or fetus is affected by maternal traumatism or injury due to falls or blows or tight corsets, or to internal pressure from pelvic tumors or intra-uterine pressure. That some fetal injuries may be due to external violence is true, and that certain deformities may be due to pressure of the containing sac as in ectopic pregnancy there can be no doubt; but this theory cannot explain the common monstrosities like anencephalus, etc.

3. Amniotic theory. According to this theory inflammation of the amnion leads to the formation of amniotic bands that interfere with fetal development. In this group of factors might be placed placentitis, which was held by Simpson to be an important factor in causing deformity. Inflammation of the placenta might naturally spread to the chorion and amnion. Under this head could be included intra-uterine injections and other methods of inducing abortion which supposedly might cause inflammation of the placenta. The existence of placentitis is nowadays not considered well established as a specific disease, and its relation to the amniotic theory is only conjectural. Moreover, the amniotic theory is largely displaced by the fourth, or embryologic, theory.

4. This theory postulates a disordered embryology or a disturbed ontogenesis and organogenesis. According to this theory most deformities are due to arrested development of parts or organs of the embryo or of the adnexa.

In any case the common deformities date from the embryologic period; that is, from the first forty days of pregnancy, and probably more often from the first half of this period. Hence any teratogenic effect of attempts at abortion can hardly be assumed to occur after the first four to six weeks of pregnancy.

It cannot be denied that injury to the placenta or fetus from an attempt at abortion might interfere with its growth and lead to general undevelopment. That is doubtful, however, and not in accord with general observation. As a rule a patient may be assured that if an attempt at abortion fails she need have no fear about the baby. In many thousands of instances perfect children have been born after unsuccessful attempts at abortion. The fear that the child might be deformed is unjustified and is absolutely no reason for the induction of abortion.

BOOKS GIVING TECHNIC FOR DETERMINING COAGULATION-TIME OF THE BLOOD

To the Editor:—Please give me the technic of a simple, accurate method of determining the coagulation-time of the blood.

W. H. SMITH, M.D., Goldsboro, N. C.

ANSWER.—Good methods can be found in recent works on clinical diagnosis, such as Webster's "Diagnostic Methods" published by Blakiston's Son & Co., Philadelphia, at \$4.50; Wood's "Chemical and Microscopic Diagnosis" published by Appleton & Co., New York, at \$5, or Simon's "Clinical Diagnosis," published by Lea & Febiger, Philadelphia, at \$5. A simple instrument for determining the coagulation-time of the blood is described by W. W. Duke in the *Archives of Internal Medicine*, February, 1912, p. 258.

GUIDES TO WATER ANALYSIS

To the Editor:—Please refer me to a guide to water analysis.

DAVID L. HEDBERG, M.D., Leaf River, Ill.

ANSWER.—There are three excellent books on water-supply, two by English writers (Savage: "The Bacteriologic Examination of Water-Supplies," and Horrocks: "Bacteriologic Examination of Water"), and a third by the American investigators, Prescott and Winslow (published by John Wiley and Sons). These books discuss the interpretation as well as methods of bacterial water analysis. "The Standard Methods of Water Analysis," published by the American Public Health Association, gives both chemical and bacterial methods in detail with many references. It should be added that at least as much skill is needed in the interpretation of water analyses as in the technical execution itself, and that an inexperienced observer is liable to draw false conclusions from his analytic data.