the purpose of showing what might have been done in preventing sickness and loss of human life under circumstances of careful observation, followed by advice to a responsible corporation and an obedient following of such advice, but for the purpose of showing the usefulness of a careful system of vital statistics, embracing a weekly return from the cities and towns along the banks of this river, of the deaths and causes of death, by which a warning reaches the State Board of Health and may be by it transmitted to the local boards, of the existence of unusual prevalence of epidemic disease.

About a quarter of a century ago the death-rate of England was constantly higher than it is at the present day. It was noticed that this high death-rate was mainly in the large towns and cities. Sanitary works were introduced in these cities, embracing new water-supplies, systems of sewerage and disposal of refuse, etc., and very soon the death-rate was diminished in nearly every city in which such improvements had been introduced.⁶

Now the point which I desire to enforce, is not so much the fact of such improvement as a natural consequence of thorough sanitation, but the method by which this fact was ascertained. The foundation or basis upon which the general public movement for these improvements rested, and which justified their introduction, was the death-rate of the cities in question. The computation of this death-rate and the comparison of the mortality before and after the introduction of public sanitary improvements was made possible only by the existence throughout the whole country of a complete and accurate system of registration.

Again the possibility of conducting such valuable and instructive investigations as are presented in Dr. Longstaff's "Studies in Statistics," and in the older papers of Buchan and Mitchell, is only made certain by the existence of a system of registration.

In this connection I desire to call your attention to one class of causes of death which is more or less preventable, although not in the same sense and degree as the group of infectious diseases; I mean the class of deaths by violence. All measures which tend to ameliorate the condition of man, to lessen suffering, poverty and intemperance, to protect life and to make it more secure from danger, will thereby diminish the annual mortality from homicide, suicide and accident. In the State of Massachusetts, by a statute of 1885 the registration of this class of deaths was made much more thorough and complete than it had previously been. At a still earlier date (1877) the coroner system had been abolished as a useless relic of antiquity, and an entirely new method of inquiry was introduced, which was modelled after the better modes in operation in continental Europe.

The new plan of procedure provides for the separation of the medical from the legal duties connected with the investigation of deaths by violence, the former being entrusted to a corps of well-trained medical examiners, while the latter are performed by the district judges. The operation of this system for a period of fifteen years has been entirely satisfactory. It is at once more economical and far more efficient than the coroner system which it superseded, and no one at the present day desires to return to the old method.

I would therefore commend this mode of investigation, together with the improved system of registration

⁶ Ninth Report of the Privy Council, England.

which now constitutes a part of the general plan, as suited to the wants of any community comprising either a large or a small population.

To conclude, a thorough system of registration is not only a valuable auxiliary, but is a natural and essential department of the work of any general sanitary authority; and in every State where no provision is made for the collection, tabulation, and publication of the vital statistics of the population, measures should be taken with the least possible delay for the carrying out of this important public duty.

Clinical Department.

TWO CASES OF HYDRAMNION ASSOCIATED WITH ABDOMINAL DISTENTION IN THE FŒTUS.¹

BY CHARLES W. TOWNSEND, M.D.

CASES of true hydramnion, where the distention is so great as to cause morbid symptoms and the premature expulsion of the fœtus, are comparatively rare. The causes of hydramnion are many; but one of the most common is stated to be a morbid condition of the fœtus resulting in mechanical disturbances of the placental or umbilical circulation. Barton Cooke-Hirst, in "The American System of Obstetrics," says: "That increased internal pressure within the umbilical vein will give rise to a transudation through the amnion, has been abundantly proved by Sallinger. . . . It may be generally stated, therefore, that any condition of the fœtus that will raise the blood-pressure in the umbilical vein, thus increasing the blood-pressure in the placenta, may give rise to hydramnion." The two cases of hydramnion I am about to relate appear to belong to this class. Hirst instances, among other morbid changes in the fœtus, cirrhotic livers, and tumors which obstruct the umbilical circulation.

The maternal histories in my cases are very much alike. Both were patients of the Lying-in Hospital; both were uncomfortably distended at the seventh and eighth month, so as to be as large or larger than at full term; and both gave birth prematurely (one at seven and one-half months, the other at eight months). A description of the labor of one of these cases will do for both.

Mrs. S., a primipara in the out-patient department, seven and one-half months pregnant, was seen November 20, 1887. The abdomen was very large, and tense as a drum. On external palpation no fœtal parts could be felt. The fœtal heart was heard faintly. By vaginal examination the fœtal head was felt above the brim, and ballottement could very easily be obtained. When the membranes were ruptured a large quantity of water came away, and the rush of water was so great after the birth of the child, which speedily followed, that it flooded the bed down to the foot, pouring over the edge and flowing along the floor. The labor previous to this had been a tedious one, lasting thirty-two hours. The child lived only forty-five minutes.

In the second case the mother was a multipara. Here the child lived nearly an hour. Both the infants were females, the sex which largely preponderates in cases of hydramnion. The mothers in both cases made good recoveries. In both babies the abdomen was much distended, causing in the second case a delay

¹ Read before the Obstetrical Society of Boston, November 11, 1893.

in the extraction of the body. I obtained an autopsy in each case.

CASE I. Autopsy of seven and one-half months' female foetus, weight three pounds. Circumference of head, eleven inches; of chest, nine and one-quarter inches; of abdomen, eleven inches. Abdomen much distended, the skin tense and shining. Abdominal cavity contained a drachm of clear serum. Liver much enlarged, extending below the level of the umbilicus on the right side and as far as the umbilicus in the median line; much distended with blood. Other organs normal.

CASE II. Autopsy of eight months' female foetus, weight nine and one-half pounds. Circumference of head, thirteen and one-quarter inches; of chest, fourteen inches; of abdomen, seventeen and one-half inches. The abdomen was very much distended with fluid—a fact which accounted for the weight of the child—its superficial veins being prominent, as may be seen by the accompanying photograph. On open-

ing the abdomen considerable clear fluid flowed out, and there were found to be numerous adhesions among the abdominal viscera. The liver and spleen were normal. The fluid was not, however, the cause of all the distention, for a large sac was found full of fluid extending up out of the pelvis as high as the umbilicus. On closer examination this proved to be the vagina, much distended with urine, the uterus being borne on the summit of this large sac. I was unable to discover with a fine probe any external meatus or opening to the vagina, and it seemed probable that the bladder emptied into an occluded vagina. The bladder itself was slightly enlarged, but being more muscular than the vagina was able to resist the pressure of urine, while the vagina gave way. Dr. Whitney, to whom I showed the specimen, suggested this explanation.

The association of abnormal foetal abdomens in these two cases of hydramnion would seem to be more than accidental. It is probable in each case that there was increased pressure in the umbilical vein with the resulting hydramnion.

A CASE OF PUERPERAL SEPTICÆMIA.¹

BY GEORGE HAVEN, M.D.

THE following case of puerperal septicæmia is, I think, sufficiently interesting from a bacteriological standpoint to justify the time which I shall occupy in reporting it to this Society.

The patient was delivered at the Boston Lying-in Hospital. Dr. J. L. Morse has made cultures from

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the patches which were found in the vagina and on the cervix, and will speak of the result of his research after I have reported the case.

R. W., dissipated history, entered the hospital August 29, 1893, in labor, membranes ruptured. She had been examined before entrance by some unknown person. She was delivered after a very long second stage by high forceps and axis traction. Twelve hours after delivery she had a chill, and the temperature went up to 104°.

August 31st. Lochia was very foul. Dr. C. W. Townsend, in whose service the case was delivered, found the vagina covered with whitish-yellow deposits, which could not be scraped off. The uterus was washed out with corrosive and carbolic. The pulse was weak and rapid; pain and tenderness were present over the uterine area. Epsom salts were given until she had free movements. She also had brandy and egg-nogs.

I examined her on September 1st, when my turn of service began at the hospital. Condition about the same as at last examination. Dr. Morse removed sufficient of the membrane to make cultures. The uterus was washed out with corrosive and peroxide of hydrogen. An iodoform pencil was introduced into the cavity of the organ, and iodoform powder dusted into the vagina. She had at this time a diarrhoea, probably septic. Nourishment was pressed as much as possible. She was given champagne in place of brandy, as the former nauseated her.

September 2d, she was feeling slightly better. Her condition remained about the same up to the 9th of September, when she complained of pain over the uterus. A flaxseed poultice gave her some relief. There was a slight trace of albumen in the urine, also a few hyaline casts.

September 25th, she was much better.

September 27th, she had a very severe headache, which did not yield to treatment, and made me think there was a distinct renal element in the case. She was given digitalis and acetate of potash. The urine contained a large trace of albumin, as well as many granular and hyaline casts.

On September 28th she had a convulsion, and was comatose after it. She was given croton oil and a hot-air bath. A movement occurred about midnight, but the skin remained perfectly dry; and she died at 5.40 A. M., September 29th.

This was a case where, if the kidneys had remained normal, recovery would have been possible. As it was, she died of uræmia. The kidney lesion may possibly have been secondary to the septicæmia, but was probably present when she entered the hospital. The rapid and violent development of her septicæmia (twelve hours) makes it almost certain that she was septic when admitted.

BACTERIOLOGICAL CULTURES FROM A CASE OF PUERPERAL SEPTICÆMIA.¹

BY J. L. MORSE, M.D.

BEFORE the employment of cultural methods for isolating micro-organisms, various observers found chains of micrococci in the tissues of women dead of puerperal fever. Mayrhofer, in 1865, was the first to publish such an observation, and was rapidly followed by

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