and cervical discharge, but the gonococci had disappeared. The treatment was then interrupted by menstruation, and at the next visit was suspended, the urethral discharge having stopped and the pus having disappeared from the cervical discharge. The erosions about the os were entirely healed.

The patient was seen again January 2, 1890, and was found to have a slight urethral discharge containing gonococci. There was also some vaginal discharge or leucorrhœa, and a moderate amount of colorless, transparent, ropy, cervical discharge. The os looked perfectly normal. There were no gonococci in the vagina or cervix.

Corrosive sublimate irrigation of the vagina and urethra was resumed. The gonococci disappeared from the urethra in a short time, but the irrigations were kept up, at irregular intervals, for several weeks. When occasionally a slight, thin secretion could be, with difficulty, pressed from the urethra, it was examined under the microscope, but always with negative result. At the last visit there was no trace of discharge.

It is probably a wise precaution to keep up the irrigation, at more or less frequent intervals, for some time after the urethral discharge disappears. The patient should be directed to hold her water as long as possible before the visit, in order that any trace of discharge may be discovered.

EPIDEMIC INFLUENZA AND INSANITY.¹

BY ARTHUR H. HARRINGTON, M.D., OF DANVERS.

WHEN I had the honor of receiving an invitation from the chairman of the Medical Section to present a paper at this time, it occurred to me that it would be pardonable if I referred to some cases which I reported a few weeks ago at a meeting of the South Essex District.

These cases, which are instances of insanity developing together with or after an attack of the influenza, may be of interest to you, considered as one of the phases of the recent epidemic. In addition to the original paper, I have, through the kindness of a number of medical gentlemen, been able to obtain some useful material upon this subject, so that we shall have for our consideration the observations of others rather than mine alone.

In looking over the history of the various epidemics of influenza, we find careful descriptions of the thoracic, the abdominal, and the nervous types of the disease,—under the latter are included the general nervous or cerebral disturbances. Now, such cerebral disturbances as headache, insomnia, somnolence, delirium, etc., receive attention; but, in the literature which I have been able to consult, the statements touching upon the purely mental disturbances or psychoses are of a most general character. And this is my reason for presenting this subject somewhat in detail, and mainly from a clinical standpoint.

Before taking up these cases, if you will allow me, I should like to remind you of the limitations to which one is subject in attempting to assign the cause or causes of insanity in a given case. Probably in this class of affections the predisposing causes play a more

prominent part than in almost any other. This fact is often overlooked, no doubt, and many times what are put down as the prime causes are really only the secondary or exciting. Moreover, it is rarely that a single cause can be fastened upon and held responsible alone for the mental disturbance.

These considerations have been kept in view in studying these cases, as complete a previous history as could be gained was taken of each, and it was found that, of the cases at the Danvers Hospital, with one exception,—and in this instance the previous history was not ascertained,—there existed predisposing causes, congenital and acquired, but it seemed quite certain that the attack of influenza, with its febrile symptoms, its tendency to cause great physical and nervous depression, was the final weight which turned the scale.

It was found that a classification based upon the previous histories could be made, into which the cases fall quite naturally. This classification is not an essential one, but is made to facilitate our easy comprehension of the cases.

I will state that I am indebted for the data of the female cases to my colleague, Dr. M. A. Jewett.

CASES I and II are instances in which the patients had been insane, but had recovered. An attack of influenza seems to have been the exciting cause of another attack of insanity. Case I, a female, aged sixty, has had two attacks of acute mania, treated at the Worcester and Danvers Hospitals. She was well mentally and living with her family when attacked with the influenza, January 10th. She very soon became restless, confused, passed into a maniacal state, and was admitted to the Danvers Hospital ten days later, where she died after a few days from exhaustion. Case II, a female patient, aged twenty-three, has had one attack of acute mania, from which she recovered. She was attacked with the influenza, and soon afterwards maniacal symptoms appeared. She was admitted to the hospital January 9th, where she continued in an acutely maniacal state for four days. At the end of this time her maniacal symptoms subsided and she became quite rational. A month after admission she appeared to have made a complete recovery. This attack must be regarded as presenting all the motor excitement of acute mania; but the delirium which the patient exhibited was more like that of an acute febrile disease. Attention is called in this case to the prompt recovery, which begun with the subsidence of the acute bodily symptoms.

CASES III, IV, V and VI are instances in which there had existed, for longer or shorter periods, enfeebled physical conditions from various causes, and which were very likely preparing the way for a mental breakdown, but in which the influenza seems to have been the exciting cause of the attack of insanity.

CASE III, a female, aged thirty, has had symptoms of phthisis for two years, and last July had a severe attack of pleurisy, which weakened her very much. In addition to these debilitating causes she had been nursing her child for twenty months. Her friends state that she was completely run down, but never showed any signs of insanity until attacked with "La Grippe," when she became restless, sleepless, then maniacal, refused nourishment and resisted attentions. She died from exhaustion and capillary bronchitis nineteen days after admission to the hospital. In this instance doubtless, phthisis, pleurisy and prolonged

¹ Read before the Massachusetts Medical Society, June 10, 1890, and recommended for publication by the Society.

lactation were contributing causes to an attack of insanity, which was precipitated by the additional depressing effects of the influenza.

CASE IV, a domestic, aged twenty-five, has been feeling "poorly," nervous and debilitated for two months, and left her place on this account. She was attacked with the influenza, and was sent to the Boston City Hospital, where she became frightened, thought some one was going to kill her, and tried to jump out of the window. She was sent to the Danvers Hospital, where she was restless and stubborn for a time. At the end of a month she was better, though somewhat confused and dull. She was discharged four months after admission. Her progress had been slow, but steady, and she left the hospital with a fair chance of making a complete recovery.

CASE V, a male, aged thirty, a native of France, has been in the country a few months. When attacked with the influenza he developed hallucinations of smell, detected a strong odor as of some poisonous substance on his pillow, thought the landlady was attempting to poison him in order to get his money. He became frightened. In order to attract the police and get protection he broke his window, shouted for help, and fired a pistol into the street. He was committed to the hospital December 30th. He was weak and emaciated, and aside from the pulmonary symptoms of the influenza, he was thought to be suffering from phthisis. He was quiet and polite on admission, but during the evening attempted suicide. The next morning he regretted his action, but confirmed the delusions mentioned above. As he recovered from the influenza the hallucinations of smell disappeared, and two weeks after his admission, while he recognized his actions and many of his ideas as foolish, yet he was not able to dispossess himself wholly of the belief that his landlady had attempted to poison him. This belief remains like a "fixed idea," and it is not unlikely that in this instance the attack of influenza was the exciting cause of a mental disorder which may become chronic.

From a psychological point of view this case is very interesting, as showing the apparent origin of the delusional ideas in the hallucinations of smell,—these latter or at least disorders in olfactory sensation and perception being not an uncommon symptom connected with the influenza.

CASE VI, a gentleman, aged sixty, was thought to have had a slight apoplectic attack two years ago. His physical health from that time has been poor, and he has been subjected to severe mental strain and worry growing out of business affairs. He was much prostrated by an attack of influenza, and did not gain strength again, and after three weeks he began to show signs of mental derangement, and was sent to the Danvers Hospital. This case proved to be an excellent example of acute confusional insanity, a form which will be referred to again. The patient's death, which occurred in three weeks after admission, was due to exhaustion and capillary bronchitis.

CASES VII, VIII and IX were individuals evidently belonging to a well-known class; the characteristics of its members are, that they are the possessors from birth of a bad physical organization and are of a low grade of intellect. Such persons often break down mentally early in life, from comparatively slight causes.

CASE VII was a boy, aged seventeen. His mental

disorder was that of acute confusional insanity. He made a rapid and complete recovery, and was discharged in a few weeks.

CASE VIII. This was another instance of acute confusional insanity, in a young woman aged twenty-five. Her mental symptoms cleared up to a great extent, but she could not be said to have recovered fully when discharged. In the last two cases the mental disorder developed while the subjects were suffering from the acute effects of the influenza, and with improving health the mental condition improved also.

CASE IX. In a colored woman, aged twenty-five, an attack of the influenza was followed immediately by acute mania. She was admitted to the hospital, and died very suddenly. A post-mortem revealed cardiac thrombosis.

CASES X and XI taken together are interesting. At various times they had been given to the excessive use of alcoholics. An attack of the influenza seems to have given rise to certain mental symptoms which are sometimes observed after prolonged drinking. Case X, a male, aged fifty-one, has been a periodic drinker for years. When getting over a drinking spell he would almost always have a period of profound depression, and would be suicidal. During one of these periods, in 1886, he came near destroying himself by cutting his throat, and was at the Danvers Hospital for a time. He was admitted again January 1, 1890. The statement was that he had been working steadily, for several months, up to the time of his attack of influenza, and his friends asserted that he had not drunk of late. While suffering from the influenza he grew sleepless and despondent, took no nourishment, then became violent and suicidal. After coming to the hospital he remained greatly depressed. His death occurred after a few days from capillary bronchitis and cardiac complications. The point to be noticed in this instance is that an attack of great mental depression with suicidal tendency, exactly like the attacks which followed his periods of excessive drinking, developed simultaneously with an attack of influenza.

CASE XI. A young man, aged twenty-seven, has been in the habit of drinking a good deal, but has never been affected by it mentally. Was attacked with the influenza and confined in the house for ten days. During this time he had no liquor, but hallucinations of hearing began to trouble him, and disturbed him to such an extent that he was sent to the Danvers Hospital. The committing physicians also stated in their certificate that they thought his mental trouble due to the "Grippe." As soon as this patient began to improve physically, his hallucinations wholly disappeared. Hallucinations of hearing, as we all know, are a very common result of prolonged drinking, but this patient seems never to have suffered from them until attacked with the influenza. In this instance the use of alcoholics had probably made the conditions favorable for the development of hallucinations, and the acute illness seems to have been their exciting cause.

In a recent report of eleven cases of insanity after influenza, by Kraepelin, he cites a case in which a man, who had been addicted to alcoholic excess, developed a typical delirium tremens when attacked by the influenza.

CASE XII, the only one of the cases seen at the

Danvers Hospital, whose previous history was not ascertained, and in whom no predisposing cause of insanity was found, was a case of acute confusional insanity. He made a complete recovery in a few weeks.

In making a few general remarks upon these twelve cases, I will say that the physical as well as the mental symptoms were of a very marked character. The patients, when admitted, had the facies of an acute exhausting disease; there was the great depression of the physical forces and the acute bronchitis with a profuse muco-purulent expectoration which characterized the epidemic disease. As for the mental symptoms, out of these twelve cases, four were excellent examples of acute confusional insanity, and six of the remaining cases presented some symptoms which would remind one strongly of that type.

By acute confusional insanity is meant a form which resembles acute mania, and, as far as outward appearances go, might readily pass for acute mania, but at the bottom of which there is no emotional disturbance as in acute mania, the conceptional sphere is dimmed, consciousness is blurred, and patients recovering have a crude recollection of their condition. When hallucinations predominate, this is called by some "acute hallucinatory insanity." This form most often develops on the basis of acute, exhausting and depressing diseases, the very factors which were present in the cases which have been cited, and which would account for their general leaning towards the type of acute confusional insanity.

Of these twelve cases, those which recovered or improved did so promptly as soon as the physical condition improved. The mortality in the twelve cases named was large, and was due to the exhausted condition of the patient, together with cardiac and pulmonary complications.

The study of these twelve cases led me to a desire to learn the experience of other hospitals during the recent epidemic. Accordingly, I sent out a number of circular letters, and I received replies from the superintendents and medical officers of twenty-two institutions. I desire to express my thanks for their courtesy in answering my questions so promptly and carefully.

The letter comprised six questions, and the replies were both negative and affirmative, and I will give the sum of them very briefly:

First Question.—In how many cases of insanity has the influenza been regarded as the exciting cause?

In ten hospitals out of the twenty-two no cases had been observed. In the remaining twelve hospitals the aggregate number of cases admitted, thought to be due to the influenza as their exciting cause, was thirty-six.

Second Question.—In how many of these cases has the influenza been the only assignable cause? The answer was sixteen out of the thirty-six.

Third and Fourth Questions.—How many cases have recovered, and how many have died? Twelve had recovered and two had died out of the thirty-six cases.

Fifth Question.—What forms of insanity have been observed? I give the diagnoses, of course, just as I received them, and for convenience will include here the twelve cases of the Danvers Hospital. So that out of forty-eight cases, seventeen were acute mania; fourteen acute melancholia; five primary confusional

insanity; two each of simple mania, simple depression and delusional insanity; one each of acute delirious mania, acute febrile delirium, acute dementia, senile mania, apoplectic dementia and alcoholic dementia.

Sixth Question.—Have the mental symptoms as a general thing presented any peculiar features due perhaps to the influence of the epidemic disease? The answers to this question quite generally bore out some observations of my own. Among them I will quote the following:

Dr. C. M. Hay, of the State Asylum at Morris Plains, says, "Generally the insanities in these cases have been of a very marked type, but whether this was due simply to the exhaustion in which the mental affection found them or was connected with a specific toxæmia I cannot say." Dr. Cowles of the McLean Asylum states, "I do not know that the mental symptoms have presented any notable peculiarity except the tendency to prompt recovery as if upon the abatement of some debilitating or depressing influences."

Another question which might have been asked, namely: What effect has the influenza had upon those already insane when attacked by it? was suggested afterwards by a report of some cases by Dr. Paine of the Westborough Homeopathic Hospital and which appeared in the *Boston Herald* of April 24th. I have been referred by Dr. Paine to this report, so I take for granted that he was correctly quoted. Dr. Paine, you may remember, reported some cases suffering with chronic forms of insanity who recovered mentally after an attack of the influenza, to which he attributes their recovery.

Unfortunately of the thirty per cent. of the insane population at Danvers Hospital who suffered from the influenza none seemed to be cured by it. In fact the mental symptoms were augmented rather than diminished even, remarkably so in four cases.

Dr. Lyon, of the Bloomingdale Asylum, says, "I may add that I have seen no such remarkable cures from chronic insanity or any other form, effected by the 'grippe,' as I have read of." Dr. Park, of the Worcester Hospital, says, "We have had no cases of recovery from chronic mania due to 'grippe.'"

CONCLUSIONS.

This paper has not aimed to gather the statistics of the relation of the recent epidemic of influenza to insanity. This would be a difficult and uncertain task. It is quite likely that in many cases attention was not given to the subject, and the most that can be learned will probably be found in the annual reports of the institutions when they shall be issued. But taking the cases of the Danvers Hospital and those reported from other hospitals, we have forty-eight cases in which an attack of the influenza was followed immediately or in a short time by the development of a psychosis. In thirty-one cases the influenza acted as an exciting cause to insanity, predisposing and other exciting causes being clearly made out. In seventeen cases the influenza was the only assignable cause of insanity. I incline to the belief that if the antecedents of these seventeen cases could be thoroughly analyzed, this number seventeen, in whom no predisposing causes were known, would be diminished and that we might approach nearer a conclusion made by Kraepelin, namely: that the influenza alone is not sufficient to occasion the development of a psychosis.

Of the total forty-eight cases, sixteen recovered.

Considering that in hospitals the average number of recoveries in new cases is only from fifteen per cent. to twenty per cent., the recovery of thirty-three per cent. of these cases is worthy of remark.

Cases of insanity excited by the influenza have shown a greater tendency to prompt recovery or improvement than is usual in recent cases. In most instances the improvement has been coincident with the abatement of the acute bodily symptoms and the return to physical strength and health.

Finally, out of these forty-eight cases, while I cannot include them all in a classification, yet it is quite easy to recognize three main groups, namely:

(1) Cases of simple depression and hypochondria. Many such instances were no doubt seen by those in general practice during the epidemic, but in which the mental disturbance did not proceed far enough to demand hospital treatment.

(2) Cases in which the emotional disturbance was carried farther than in the first group, resulting in acute forms of mania and melancholia.

(3) A considerable proportion of cases which developed on the basis of bodily exhaustion and depression of the nervous forces, namely: the cases of delirious mania, febrile delirium, and especially those of acute confusional insanity, which appears to me to be the type towards which the symptoms in many cases have inclined.

HYALINE-FIBROID OVARIAN DISEASE.¹

BY HENEGAGE GIBBS, M.D.,
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In January of this year I published a paper in the *Boston Medical and Surgical Journal*, on the "Origin of Ovarian Cysts." Since then I have examined a number of ovaries, and can now add something to the facts stated in that paper. I then gave three causes for the origin of cysts in the ovaries: (1) an overgrowth of normal tissue, supposed to be of embryonic character; (2) dilatation of Graafian follicles; (3) Hyaline degeneration of the ovarian stroma. Further investigation inclines me to think that this latter form is a much more frequent cause of ovarian disease, at any rate in young patients, than the other two; and I wish to say a few words on this peculiar change. I have called it hyaline degeneration; and from the examination of a large number of ovaries removed during life, I am convinced that a large majority are affected by this change. The term hyaline degeneration conveys no clear impression to the mind of what the change is, further than that it is a homogeneous material into which the normal ovarian stroma is transformed.

It is important, therefore, to find out the nature of the new formation, and then, if possible, its preventive or cure. To establish its precise nature, I have made a number of experiments with reagents, with a view to finding out its chemical nature and the normal tissue to which it corresponds. I am now satisfied that it is not a degeneration, in the strict sense of the word, but is a new formation of fibrous tissue of a peculiar character. I will not give an account here of the numerous experiments I have made, as it would prove tedious, but will state their results. In the first place, we all know that in whatever condition white fibrous

tissue is found normally in the human body, it has always associated with it connective-tissue corpuscles; and when this tissue is in a young, growing state, then these corpuscles will be very numerous. This is also seen in rapid new growths of fibrous tissues, such as keloid, where the connective-tissue corpuscles are distributed in enormous numbers among the rapidly growing fibrous tissue. This is exactly what is found in the new growth in the ovary. At first, narrow, sinuous bands of fibrous tissue appear in the ovarian stroma. They become larger and many in number, always having the same peculiar, tortuous arrangement. Between these bands are numbers of branched connective-tissue corpuscles, closely applied to the fibrous tissue. The chemical reaction of this new growth is similar to that of white fibrous tissue growing rapidly under other conditions; and the relation of the connective-tissue corpuscles to it is also seen in other normal and abnormal conditions. I consider, therefore, that I am justified in calling this a growth of fibrous tissue of a peculiar kind.

Now this fibrous change is not peculiar to the ovary. I have found exactly similar conditions in the lungs in tuberculosis, and in slow-growing carcinoma, and an almost similar change in slow-growing sarcoma. These cases were all of slow growth. The lungs were invaded by reticular tubercle; and the disease had existed for two or three years. In all there was chronic irritation. Now, what we want to know is, What caused a new growth of fibrous tissue that, in the case of the ovary, could break down to form a cyst. I must here state that in all these formations the new growth became extensive, and being probably of low vitality, with a deficient nutrient supply, the central portion, after a time, broke down, and formed a cavity, this filled with fluid, as all cavities in the ovary are prone to do, and gradual dilatation took place, ending in the formation of a large cyst.

In a state of nature, unfettered by civilization, the human female was probably intended to conceive and bear young as other animals do; and in this way the ovary could perform its function at periodical intervals with intervening periods of rest, we have, however, altered all this. A large majority of women pass through that period of their lives when their sexual organs are in their highest functional condition, without there being any opportunity for the exercise of these functions. This, of itself, would not prove prejudicial to health; but when uncongenial employment and surroundings are added, is it any wonder that something goes wrong?

Women at the present time are pushing more and more into conditions of life which are eminently unsuitable to them, but they are forced to do so under existing circumstances. Any one who has lived amongst people in a semi-savage state, knows how little the females suffer from diseases of their sexual organs and what an extremely simple matter parturition is. But take the everyday life of a working-girl who has, in many cases, to be on her feet all day, often in a close, unhealthy atmosphere, or under many other conditions all more or less unhealthy — this going on during the menstrual period, what is the result? A condition of anæmic dyspepsia; and after this has existed some time, comes leucorrhœa, bearing-down pains, pain in the back, etc. Now, if the patient be examined in an early stage of this condition, it will generally be found that one of the ovaries is enlarged and tender; and in

¹ Read before the Michigan State Medical Association, Grand Rapids, June 19, 1890.