holds to anæmia. A third mode of death commencing in the lungs is that by *embolism*. A fibrinous clot formed in the right side of the heart, or brought from a distant vein, is carried into the pulmonary artery, and at once more or less completely arrests the circulation in the lungs. The result is the same as when the supply of air is cut off from the lungs. In both cases the tissues of the body suffer from the want of oxygenated blood. The phenomena observed in these three modes of death commencing in the lungs are as follows.

a. In *apnoea*, the respiratory movements are quickened and laboured: the auxiliary muscles of respiration are called into powerful action, the countenance is swollen and livid, the eyeballs protruded, and the veins of the head and neck are distended, and before long there is loss of consciousness, very often with muscular twitchings or general convulsions. The heart and arteries continue to beat after the breathing has ceased; and after death the right cavities of the heart are found to be distended with dark blood, while the left are empty.

b. In *coma*, the final phenomena are much the same as in *apnoea*, but there is this difference, that the loss of consciousness precedes the difficulty of breathing; and that in consequence of the impaired sensibility, the respirations become slow, irregular, and stertorous.

c. In *embolism*, when the trunk of the pulmonary artery is suddenly blocked, death is instantaneous; but when the obstruction is less complete, the patient may survive for several hours, and the phenomena observed are extreme dyspnoea coming on suddenly, and conjoined with pallor and faintness.

This tabular arrangement which I place before you may help to impress upon your minds the different modes of dying which I have now described.

A.—SYNCOPE.

Death commencing in the heart.

a. *Anæmia*.—Deficient supply of blood to heart.

b. *Asthenia*.—Suspension of contracting power of heart.

B.—ASPHYXIA.

Death commencing in the lungs.

a. *Apnoea*.—Impediment to entrance of air into lungs.

b. *Coma*.—Impaired nervous sensibility, embarrassing the movements of respiration.

c. *Embolism*.—Stoppage in supply of blood to the lungs.

[To be continued.]

ANTISEPTIC TREATMENT OF SMALL-POX.

IN common with many readers of the BRITISH MEDICAL JOURNAL, I have perused with much interest the account by Dr. Hjaltelin (in the number for Nov. 4th) of small-pox occurring in Iceland, and especially of the control exercised by sulphurous acid in gas and solution over the course of that disease, as well as over vaccinia. It appeared to serve for prevention and treatment. The views of Dr. Polli, the Milanese professor, are singularly confirmed by this independent observation. The adoption of the treatment seems not at all inspired by his advocacy, nor is it defended by his *rationale*. In the preparations or medicines employed by Dr. Polli, it is always the sulphurous acid element that he insists upon; and in their therapeutic action, as conceived by him, there is a perfect identity of operation between the sulphites and the acid—that is to say, in arresting fermentative change. Nay more: in those frequent instances where sulphur is proved to be of use, whether in vine or silkworm disease, or in the diseases of man and animals, he attributes all to the oxidation of the sulphur and slow development of sulphurous acid. There are some things which render his notion of cure and prevention in zymotic disease far less preposterous and extravagant than it might at first appear to men of great experience. One of these I will mention, as it occurs to me. In the early days of vaccination, and at the hands of early vaccinators, it was found that the action of sulphur on the frame was decidedly adverse to the receptivity of vaccine. A well known dissertation was written on this very subject by Dr. Tierney, in which there is found quoted the fact that Dr. Jenner had failed in vaccinating thirty soldiers, all under treatment by sulphur. "When they were vaccinated two or three weeks afterwards, they all of them took the genuine cow-pox." I have not Tierney's book before me, nor have I time to look for it; but I quote from the better known work of George Bell (Edinburgh, 1802, *Treatise on Cow-pox*), where the subject is fully mentioned.

Let us, then, not wholly discard the idea that we may find in the sulphites and hyposulphites valuable prophylactics and curative agents against zymotic disease. These facts, beyond dispute, are highly suggestive for experiment.

GEORGE GASKOIN.

CLINICAL REMARKS ON SO-CALLED HAY-FEVER OR SUMMER CATARRH.

By A. T. H. WATERS, M.D., F.R.C.P.,
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I WISH to call your attention to an affection of which you will probably see no instances in our wards, but which you may meet with hereafter in your practice. I mean hay-fever, or summer catarrh. Whether it has been in consequence of the peculiar weather which we have had, or some other cause, I am unable to say; but certainly the affection has appeared to me unusually prevalent this year; and, as I have myself suffered from it somewhat severely, I propose to say a few words on its nature and symptoms, and on my experience in its treatment.

Some people are apt to smile when you tell them that you have suffered severely from the malady; they seem to imagine that it can be nothing more than an ordinary cold, for which little sympathy is needed. But it is not an ordinary cold; it is a specific affection, brought on and kept up by peculiar causes, only affecting a certain number of people, always or nearly always affecting them in the same way, and at very nearly the same period every, or almost every year.

The term hay-fever is not a good one; for the malady is not simply produced by the effluvia of hay, although there is no doubt that these will suffice in many people to bring on an attack. I believe that emanations from various flowering plants, including the grasses, are far more concerned in the production of the affection than the hay itself. But there are other causes which may either produce the disease or keep it up; viz., certain atmospheric conditions—conditions, indeed, very opposite to each other—warmth and moisture on the one hand, and hot, dry, bright weather, on the other. I believe, however, that when the weather is moist and warm, the disease will attack more individuals than when it is dry, accompanied by great heat or otherwise.

Now let me remind you of the kind of weather we have had this summer.* June was very cold and dry in its early part. Towards the end, we had a sudden change; and ever since we have had great moisture, with, especially in the early part of the present month, a good deal of warmth.

The disease occurs in two different forms—a milder and a more severe form. I include under the milder form those cases where sneezing, coryza, lachrymation, or asthmatic attacks, are brought on by exposure to hay or flowers. I have now a gentleman under my care for a chest-affection, who gets an attack of sneezing, lachrymation, etc., whenever he goes near a hay-field. This has happened to him every summer as long as he can recollect. The attack with him soon passes off, and he can avoid it by avoiding the cause. Some people get real asthmatic attacks from being in the neighbourhood of hay. A lady of my acquaintance suffers very severely in this way; and she is obliged to go to the seaside to avoid her enemy; and the more barren the surrounding country, the better.

These mild attacks, however, are not the only form of this affection. There is a severe form; and it is, unfortunately, of this latter that I have had actual personal experience. Although the affection cannot be said to present any element of danger, yet it is something more than unpleasant and annoying. The catarrhal symptoms are sometimes very severe, and occasionally attended, as in my case, with unmistakable bronchitis. Moreover, the disease is very depressing. The depression is not so sudden nor so great as that attendant on influenza; but it is sufficient to incapacitate the sufferer for all the enjoyments of life, and to render work, either of mind or of body, very irksome. The appetite sometimes fails; food is not relished; the nights are often very disturbed; and the result is that, after the disease has lasted a few weeks, the sufferer from it has lost flesh, looks haggard, sallow, and anæmic. No wonder, then, that we hear of people attempting to dodge their enemy—i. e., changing their residence, so as to avoid the hay-season. The affection cannot always be escaped even by this process, for the atmospheric conditions which give rise to it cannot always be avoided.

My first experience of the disease was in 1866, when I was staying at the seaside; and perhaps you will be inclined to ask how I could possibly have had an attack there. It happened in this wise. I used to take long journeys into the country; and, although the hay-season was nearly over, there were plenty of flowering plants. I used to find, on

* These remarks were made at the end of July of the present year.

returning from my journey, that I felt in no wise refreshed by it. I was not tired, but there was a degree of lassitude and languor for which I could not account. Moreover, although I had no decided catarrhal symptoms, I felt uncomfortable in the evening—chilly, and rather feverish; and I could not sleep. I was not actually restless, but sleep rarely came until I had been in bed some hours. I found, further, that when I did not go into the country, but kept on the beach all day, my symptoms did not come on, and I slept better at night. It occurred to me, therefore, that I was suffering from a form of hay-fever. Accordingly, after one or two more journeys by way of experiment, followed by the same symptoms, I gave up going into the country, and kept by the sea all day. The symptoms soon disappeared.

The symptom of insomnia to which I have referred occurred to me in the following year, during an attack which I had in Ireland. On that occasion I travelled over a great part of Ireland during the month of August, and my enemy accompanied me everywhere. I am quite convinced that the affection was kept up by the *warm moist* climate. But, with regard to the insomnia. I used to lie awake in a semi-delirious condition, not altogether unpleasant, until nearly day-break; and then I slept soundly till seven or eight o'clock. It did not matter when I went to bed; I had no sleep before half-past three or four o'clock. There was something very peculiar about this, which I cannot account for even now—the *periodicity of the insomnia—its recurrence and subsidence at certain hours each day.*

The attack which I had in Ireland in 1867 was marked by severe catarrhal symptoms, beginning with sneezing of a most violent character, which was for one day almost incessant. This was followed by sore-throat, and subsequently bronchitis. I went to Dublin—and it was whilst staying in the suburbs of that city that I was attacked—afterwards to the west, the south-west, and the north of Ireland. I was much in the open air. I stayed at the Lakes of Killarney for three days, and in the moist warm climate of that spot I was worse than anywhere else. The bronchitic symptoms were increased, and the insomnia was marked. The only place in which I got any relief was the Giant's Causeway; but I made no real progress towards recovery till I returned home, when I recovered rapidly.

In 1868 I did not suffer from the disease at all, although I was staying in the country during a part of June and of July. It was a *very hot dry summer*, and to that fact I attribute my immunity. Nor did I get an attack in 1869, which was also a hot summer.

In 1870 I had a slight attack, which began about the 10th of June, and lasted for about three weeks. I had slight sore-throat, and the larynx was somewhat affected. I was hoarse for some time, and had some cough and expectoration; but the affection did not produce much debility.

This year I have had a severe attack, and I have seen and heard more of the disease in others than usual. As my attack this year illustrates well not only the manner in which the disease may be produced, but also some of its more severe consequences, I think it worth while to refer to it rather in detail. My attack commenced on June 26th. The weather was warm and pleasant. I had to drive on that day for several miles along a country road, through hay-fields; and, on my return home, I felt unwell. Next morning, I had sore-throat and symptoms of incipient catarrh. I had a distant visit to pay on that day by rail, and then to drive through the country about twelve miles. On returning home late in the evening, I was very uncomfortable—feverish, with a pulse twenty beats above the usual number. I had sore-throat on the following day. The conjunctivæ were injected. There was increase of lachrymation. The mucous membrane of the nostrils was swollen so as to interfere with breathing; and there was a buzzing in the ears. These symptoms continued, more or less, for upwards of a month. They were always increased when I was obliged to go into the country, and especially when the weather was *very moist and warm*. On the other hand, if my work did not necessitate my going beyond the streets of Liverpool, and especially if the weather were dry and bracing, my symptoms decidedly improved. I had but little cough and expectoration; and I was not troubled, as in the two former attacks, with insomnia. But, in spite of eating well and taking rather more than my usual quantity of stimulants, my strength diminished; I lost flesh; and, at the end of three weeks, work became a trouble to me, and I was glad to rest as much as possible. In fact, I was pale, weak, and really anæmic.

I have reflected much on the nature of this malady, and endeavoured to explain the reason why it has produced in me so unpleasant a train of symptoms. During my attacks, and especially the last, I have felt as if there were some poison in the system—that I had inhaled some malaria, which had seriously affected the tone of the nervous system, and impaired the nutritive functions. Then I wish to remind you of the fact that, in two of my attacks, I had a kind of exacerbation of

the symptoms every night, with insomnia, which lasted for a certain number of hours, and then suddenly gave way. Now, looking at all these facts, I have come to the conclusion that this affection, in its severe form, partakes somewhat of the nature of ague; and that it is caused and kept up by certain emanations and certain atmospheric conditions, which, however harmless to some people, produce a decidedly depressing effect on the nervous system in others—that it is, in fact, a nervous disease.

You will meet with some very curious circumstances in connexion with the disease, in the manner in which it attacks different people. There can be no doubt that dry, hot, bright weather produces the affection in some people; whilst others are perfectly free from it under these conditions. One of my own friends suffers from it every year, especially if the summer be hot, bright, and dry; and yet, strange to say, whilst in India, where he spent several years, he never had an attack. I have met with people who cannot go into a hothouse or a greenhouse where there are flowering plants, and remain there many minutes, without getting symptoms of catarrh; and I believe that these attacks are in their nature similar to those of hay-fever.

And now with reference to the treatment of this affection. I have not much confidence in medicines as curative of the actual symptoms of the disease; but relief is experienced from the remedies which are often found useful in asthma and in ordinary catarrhal conditions. In the early stages, when the lachrymation, sneezing, and running from the nose are severe, I have found carbonate of ammonia, given in five-grain doses and frequently repeated, very useful; but, if the disease continue, and the symptoms of depression, languor, and debility come on, recourse should be had to the most powerful tonics. I believe a combination of iron, quinine, and strychnine will generally be found beneficial. There are some matters of detail which must be, of course, looked to, such as the existence of gouty or rheumatic symptoms, or disturbance of the organs of digestion, on which I shall not dwell. The main point to be borne in mind is, that the affection is essentially one of a weak, impressible nervous system; and you must give your remedies accordingly. Arsenic is another medicine which you may employ; and in some cases it has answered well. It may be given with quinine and opium, which latter some people find useful, especially when there are asthmatic symptoms; but its tendency to impair the digestion is an objection to its use. In addition, the tepid or cold bath should be used. The diet should be liberal, with a moderate amount of stimulants. Some insist on the importance of fortifying the system against attacks; and no doubt it is a good plan to persevere steadily during the whole year with measures which tend to keep up the tone of the nervous system. But, that people may succumb to an attack when in the very best health, is unfortunately but too true. I know at least one instance during the present year where the patient just before the attack was in unusually good health, and yet he has suffered much more severely than on any former occasion.

ABSTRACT OF A CLINICAL LECTURE ON DEATH FROM EXTRAVASATION AFTER REDUCTION OF A DISLOCATION OF SHOULDER.

Delivered at the Middlesex Hospital, October 23rd, 1871.

By CAMPBELL DE MORGAN, F.R.C.S., F.R.S.,
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GENTLEMEN,—I have not had many cases of special interest since the opening of the session. There are, however, one or two to which I would now call your attention. One, which came into the hospital before the opening, is of great clinical interest, as showing the effects which may follow what we generally consider a minor injury, teaching us that there is no accident which may not at one time or another become the source of serious mischief or even of death. A man aged 54, a painter, was admitted on September 22nd, having dislocated the head of the humerus below the coracoid on the right side a fortnight before. He was a strong, powerful man; but the dislocation was reduced two hours after the accident, under chloroform, the heel being placed in the axilla, and forcible extension made on the arm. He came back more than once to the surgery; and for the first week there was nothing to be noticed but the ordinary swelling attending such a dislocation. This swelling, however, instead of subsiding, increased, and this somewhat rapidly towards the end of the first week. There was also some purple discoloration about the inner and posterior parts of the shoulder. Still there were no appearances which might not attend an ordinary bruise or laceration about the part. But, in the course of the following