lence is very great the effect is a serous inflammation leading to spreading oedema.

Conclusions.

From these facts I draw the following conclusions:

1. If a disease is due to a specific causal agent it is not characterised by specific anatomical or functional lesions.
2. If a disease is characterised by specific lesions we must not expect to find a specific causal agent. From this it follows that from the characters, histological or macroscopical, of the lesions we cannot positively affirm that the disease is due to a specific causal agent. The only means by which we can affirm this is to find and isolate the causal agent itself.
3. Variations in the characters of the lesions in diseases due to specific causal agents depend not on the nature of the agent, but on the locality to which it is applied and on its relative virulence.

MYOKYMIA, OR PERSISTENT MUSCULAR QUIVERING.

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A SHORT time ago a patient came under my care at the Ancoats Hospital, suffering from a peculiar persistent quivering of the muscles of the limbs and trunk. The symptoms corresponded to those met with in the very rare affection to which Professor Schultze has given the name of "myokymie" ($\mu\upsilon\varsigma$, a muscle, and $\kappa\upsilon\mu\alpha$, a wave), and Dr. Kny (who had previously reported two similar cases) that of "myoclonus fibrillaris multiplex." I have only been able to find records of eight cases in medical literature, but probably others have been reported.

The following are the notes of my case:

J. C., aged 21, clerk, was admitted as an in-patient at the Ancoats Hospital, August 29th, 1900, suffering from a peculiar persistent quivering of the muscles of the limbs, trunk, and face.

Previous History.

The left leg had been suddenly paralysed in infancy (probably owing to acute anterior poliomyelitis), and had remained useless. At the age of 16 years the left (paralysed) leg had been seriously injured, through an accident, and amputation had been necessary at the upper part of the left thigh.

Two years ago (at the age of 19) he had first noticed quivering of the muscles of the right leg. The onset was gradual, and the quivering spread in course of time to the muscles of the arms, trunk, face, and tongue. There had been no cessation or diminution of the symptom since its onset. After the amputation of the left leg he had been able to get about with the aid of a crutch, but recently he had found great difficulty in doing so, owing to the right leg frequently "giving way" through the muscular quivering.

He had always been a teetotaler, but had taken strong tea with each meal for many years. Three times a day for many years he had taken two cups (about one pint) of strong tea. He had only smoked about an ounce and a-half of tobacco weekly.

Condition on Examination.

The patient was fairly well nourished, and there was no definite wasting of any of the muscles of the arms, right leg, or trunk. There was a well-marked lateral curvature of the spine, which had gradually developed since the left leg had been amputated. The most striking symptom was a persistent rapid quivering of the muscles of the right leg, the arms, trunk, face, and tongue. Sometimes one small bundle of muscle fibres contracted rapidly, giving the appearance of fibrillary contraction; sometimes several bundles of muscle fibres contracted; at other times the whole muscle would contract rapidly. The symptom was best seen in the leg, and the quivering affected chiefly the thigh and calf muscles. At one moment a bundle or several bundles of muscle fibres would contract rapidly; directly afterwards a wave of contraction would pass over the whole muscle. This muscular quivering produced a very slight shaking or trembling of the whole leg, even when the patient was in bed. When the quivering was very violent, rapid and repeated slight flexion movements of the foot occurred at the ankle, owing to the quivering of the calf muscles. The arms were affected in a similar manner but not quite so markedly as the leg, the muscles of the shoulder, upper arm, and forearm being most affected, those of the hand very slightly. In the arms the quivering or contraction did not affect the whole of a muscle so frequent as in the leg. The rapid and repeated quivering of the muscles of the arms and leg continued more or less all day long; the muscles were affected in a most irregular manner, and the frequency of the quivering varied considerably.

The muscles of the chest and abdomen presented occasional fibrillary contractions. The muscles of the face and tongue, the masseters and neck muscles presented frequent fibrillary contractions. The eyes were not affected; there was no nystagmus. The muscular quivering and contractions in the limbs and trunk continued when the patient was at rest in bed, as well as when he was going about. When the arms were held out in front of the chest, the muscular quivering produced a slight tremulous movement of the whole limb resembling that so frequently

seen in Graves's disease; but there was not the flexion and extension movements of the fingers or wrist which are seen in paralysis agitans. The muscular quivering and slight tremor of the limbs were very little affected by voluntary movement; they were not diminished thereby; if any change occurred at all, they were slightly increased. The muscular quivering was increased by excitement, and when the patient was undergoing examination. The patient was able to write fairly well, and though the writing was slightly jerky, it was much better than in the various other forms of tremor, with the exception of paralysis agitans. He was also able to draw a straight line on paper fairly well.

The patient could perform all the movements of the arms and legs, and there was no localised wasting or paresis of muscles. There was no rigidity of the limbs. The knee-jerk was a little increased. There was no ankle clonus. On attempting to obtain ankle clonus occasionally a few jerks were obtained, but at other times this symptom was entirely absent. The plantar reflex was normal (flexor type). There was no loss of sensation to touch, pain, or temperature. The sensory cranial nerves were unaffected. There were no mental symptoms. The patient was not emotional or nervous. There was no affection of speech. The patient often complained of palpitation of the heart, and the pulse was often quick, 84 to 108 per minute. Examination of the heart, lungs, and abdomen revealed no evidence of organic disease. The patient complained of frequent sweating. There was no exophthalmos, no Graefe's symptom, and no thyroid enlargement. There was a little nausea after food; the bowels were regular.

The urine was often pale, at other times of normal colour. The quantity was increased; it was measured for sixteen days, and found to vary in amount from 64 to 124 ounces daily. The specific gravity varied considerably; when the urine was pale it was often low—1005 to 1008; at other times it was 1012 to 1015. Albumen and sugar were absent. The reaction was sometimes alkaline, sometimes acid. The temperature was normal. Insomnia was a frequent symptom.

As the patient had taken strong tea at every meal for many years I allowed him no fluids except milk and water for two weeks, but without any result as regards his symptoms. During the four weeks he was in the hospital there was no definite change; some days the muscular quivering was a little less, but the diminution was never permanent. The muscular quivering continued more or less all day long, just as it had done for two years.

The symptoms in the case just recorded corresponded to those in the affection to which the name of "myokymia" has been given. Similar cases have been recorded by Kny, Schultze, Hoffmann, Biancone, Buber, Karcher, and Mayer. In the 8 cases of which I have been able to find records in medical literature, the ages were from 21 to 71. All the patients were males. Five of the eight were peasants or country labourers. One patient was a painter, another a lead solderer; both of these patients suffered also from symptoms of lead poisoning. One patient suffered from chronic double sciatica. In all of the 8 cases the legs were most affected. In 2 cases the legs only were affected; in 1 the legs and muscles of the back; in 2 the arms and legs; in 1 the legs and arms but not the hands; in 1 almost all the muscles of the body; in 1 almost all the muscles except those of the face and neck. [In the case which I have just reported, the muscles of the limbs and trunk, as well as those of the neck and face, were affected.] In 4 cases recovery occurred in the course of a few months; in 1 case there was distinct improvement. The treatment, in the cases in which recovery occurred, was by warm baths and galvanism (Kny), by bipolar faradic baths (Kny), by rest in bed and warm baths (Schultze). Buber's case improved distinctly under treatment with the galvanic current and warm baths. Biancone recommends complete rest in bed, warm baths, and sodium salicylate.

The cause and pathology of this peculiar affection are at present unknown.

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A BRIEF ACCOUNT OF THE RECENT EPIDEMIC OF CHOLERA IN KASHMIR.

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ONCE more Kashmir has been visited by a sharp epidemic of cholera. Thus, in 13 years there have been three invasions. In 1888 there were probably 18,000 attacks, and a total mortality of nearly 10,000; in 1892 the official returns showed 16,845 cases, with 11,712 deaths; owing to the concealment then extensively practised by the people, it is probable that