

treatment, accompanied by unusual sexual excitement, sadness, undefined preoccupation, and unlocalized pains. The appetite was always good. Finally, MM. Roger and De Monchy were affected, on or about the fifteenth day following the last inoculations, by pains in the spots where the injections were made. These pains were so acute as to suddenly awaken them in the middle of the night. I call attention to this last fact, because in one case, where a person inoculated died of hydrophobia, in spite of the treatment, the adversaries of the Pasteur method took advantage of this fact—that the patient had complained of suffering at the spot of the inoculation—to pretend that hydrophobia had been communicated to him by these inoculations. One sees, however, that these injections are able to cause acute pain some time after they have been made, without determining hydrophobia.

To-day, May 19, nearly a month and a half after the last inoculation, we are, all three, in a state of health as satisfactory as possible. I will add that the sixteen persons who have been inoculated at the New York Pasteur Institute in the two months following its opening, are enjoying good health, whilst several domestic animals bitten by the same dogs that attacked several of these patients, have died of hydrophobia. A man bitten by one of these dogs, and not treated at the Institute, has also died of hydrophobia.

I am happy to make known these facts, and I shall be still happier if, by the application of the method of my illustrious teacher, M. Pasteur—the method which is so successful in Europe—I am able, on this side of the Atlantic to preserve the greatest number of persons possible from the frightful death which is the consequence of hydrophobia.

A PECULIAR CASE OF ADDISON'S DISEASE.

Read in the Section of Dermatology and Syphiligraphy at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

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Despite the fact that the literature of Addison's disease is vast and that much has been written upon this peculiar affection, its clinical characteristics and its pathology, each new case which is reported has a certain interest attaching to it which is certain to attract more or less attention. I do not purpose writing an exhaustive paper upon the subject, but merely wish to place upon record a case which proved interesting to me from the fact that a certain symptom presented itself which I have not found recorded in connection with this affection. I wish to state, however, that my search has been by no means exhaustive, and that similar cases might have escap-

ed me in my rather rapid review of a portion of the literature of the subject. This symptom to which I will call attention later on in a more explicit manner is one which I deem of some importance, as it confirms the view that Addison's disease is primarily and essentially an affection of the sympathetic nervous system. If we can positively determine this to be a fact there may be found some means of arresting the disease even if the pigmentation can not be caused to disappear. As the trouble is one which almost invariably terminates fatally, such an advance in the curative management would be a triumph in therapeutics.

That not more is known of Addison's disease is probably due to the fact that it is an affection not often observed. I have had an opportunity of observing but two cases, in one of which the history was such as we ordinarily find it, whereas in the other a few points existed which added interest and which have led me to present a short history and clinical record which is as follows:

Case 1.—On February 6 of this year I was requested by Dr. W. W. Graves, of this city, to see a case of Addison's disease. The patient was a man of forty-six who gave the following history: While employed in a grain elevator in Memphis, Tenn., he became aware of a general feeling of malaise. This "bad feeling" as he expressed it became so great, that as soon as he felt able to do so, he left for St. Louis. The beginning of this attack was about October 15, 1889. The bronzing of the skin was hardly noticed at this time but it progressed steadily. He arrived in St. Louis about December 20, and a week later it was noticed that he perspired very freely over the whole body and that the sweat had a most intense and disgusting odor. So marked was this that the doors and windows had to be opened. The whole house was permeated by this smell, which resembled that of carrion. The bromidrosis gradually disappeared and the amount of sweat diminished. Family history good.

At the time I examined the man I found him well developed—perhaps slightly emaciated, but not perceptibly so. Expression of face dull. He was still feeling rather weak although he had improved somewhat of late. He complained of a pain in the pit of the stomach, but pressure exercised in this region did not elicit any pain. He occasionally "bloated," and the tympanitis would become so great as to distress him much. He would be unable to put on his clothing, and he stated that it came on suddenly. Pressure in the back over the areas of the kidneys and suprarenal capsules did not elicit any pain. The patient was of a nervous disposition and had always been so.

Inspection showed that the man had a good supply of hair of a dark-brown color—almost black. He stated, however, and was corrobor-

ated in this by his sister, that before his present illness his hair was of a light color—that he was a blonde. The skin of this individual was apparently of normal thickness, no more than the usual moisture being perceptible. In fact it appeared perfectly normal with the exception of one thing—the color. The whites of the eyes and the mucous membrane of the mouth were devoid of any adventitious pigmentation.

The entire integument with the exception of that covering the head and the hands was of a marked brownish-bronze tint. The chest seemed to be of a somewhat slightly darker hue than the back. Disseminated throughout the affected area darker macules of various sizes could be observed. The areolæ about the nipples, the axillæ, perineum and internatal field was also darker than the general surface. On the other hand, that portion of skin lying over the scapulæ was lighter in color. A few small scars existed upon the chest and these were whitish. On the chest and back there existed numerous white macules of the size and shape of small oats. These were numerous, more particularly upon the chest and upon the forearms. The patient stated that these were small scars from wounds made by the grain which scratched him while at work in the bins of the elevator. While this appeared to be a very plausible explanation to account for the presence of these spots, close inspection failed to furnish any satisfactory evidence of their being scars; and, as excision of a portion of the integument was not permitted a resort to microscopical examination could not be made in order to obtain confirmatory evidence.

That Addison's disease is due to some disturbance of the sympathetic nervous system there seems to be no reason to doubt. The subjective symptoms which are noted are of a nature to point to such a cause, and the bronzing of the skin is another sequence dependent upon the same origin. It is pretty well established at the present day that many affections, characterized by an increase in the amount of pigment of the skin, are due to disturbed sympathetic innervation. Crocker states that the study of Addison's disease has made it highly probable that, whenever the abdominal sympathetic, especially the solar plexus, is irritated general pigmentation is likely to ensue. Greenhow and McCall Anderson do not look upon the symptoms as dependent upon destruction of the supra-renal capsules but upon the extension of the morbid process to the neighboring parts, especially to the solar plexus and semi-lunar ganglia. The general consensus of authorities of to-day is that there exists involvement of the sympathetic nervous system.

That this process is a severe one the general prostration and rapidly fatal termination of a certain number of cases show very plainly. But, in

addition to this, we have anatomical proof furnished in the profound alterations observed in the suprarenal capsules, in the greater number of cases in which necropsy has been performed. Addison was not far from the truth when he stated that the disease was due to these alterations in the capsules—he builded better than he knew. The remarkable investigations and demonstrations of modern investigators have conclusively shown that the suprarenal capsules are ganglia of the sympathetic nervous system directly connected with the solar plexus and semi-lunar ganglia. When we take into consideration the degenerative changes observed in the capsules, in some cases, there can be no room left to doubt that the involvement is a very serious one. This discovery also easily accounts for the fact that, at some post-mortem examinations, the capsules were found to have suffered no change, a circumstance which would seem to indicate that the process begins most probably in the ganglia situated higher up.

To make a short digression. It is admitted on the part of all authors that functional disturbances of the glands of the skin are also dependent upon disturbed sympathetic innervation. That sympathetic nerves preside over glandular functions is admitted and the glands of the skin are subject to the general law. This is especially true of those disturbances of function characterized by an increased amount of secretion. Prominent among functional cutaneous disorders is hyperidrosis, of which bromidrosis is merely a variety in the majority of cases. Whether the odor be due to the bacterium *fœtidus*, to chemical decomposition, or to direct nervous influence as maintained by E. Monin, we need not consider here. The main point to bear in mind is the increased amount of sweat. This, when universal, denotes a more profound implication of the nervous system than when localized in some particular area.

In the case which I have outlined above there existed for some little time a general bromidrosis, indicating a rather serious involvement of the sympathetic nervous system. The intensity of the odor also tended to show that the process was a severe one. The sudden onset and as sudden disappearance would further go to support the claim of its nervous origin. The presence of microorganisms or of chemical decomposition could hardly be claimed although either one would not militate against the assumption of a neurotic origin for the hyperidrosis.

The fact of the presence of this symptom is interesting on account of its rarity in connection with Addison's disease and because, as stated above, it shows the profound involvement of the sympathetic nervous system which must have existed in the case. We find then that the skin is pigmented and that the functions of a set

of glands are also changed. In other words, two manifestations of an entirely dissimilar character and which we are accustomed to study separately are here found to be coincident and, beyond any doubt, dependent upon a common origin.

The lack of time and opportunity have prevented my making a study of this question. There is no doubt, whatever, in my mind that other causes of a like nature have occurred, but the importance of the graver malady as well as its comparative rarity completely overshadowed the importance of the symptom which probably is one of frequent occurrence—the bromidrosis.

A feature which was observed and which might partially account for the foetid sweat is the fact noted in the history that there was no pigmentation of the mucous membrane of the mouth. The explanation that this would furnish would be that the energy usually directed to the mucous membrane had been diverted to other channels, or, in other words, the perverted innervation was transferred from the mucous membrane to its external congener, the skin. This process is not an unusual one. We observe it, for instance, in erythema nodosum in which the eruption rapidly disappears to give way to a bronchitis, and this in turn leaves to be followed by a recurrence of the eruption.

In this short clinical contribution I have merely desired to sketch an interesting condition, and, so far as I know, a peculiar case. While the literature of Addison's disease is plentiful there is really but little that is tangible. In the light of modern anatomical investigations, however, we can see the promise of great improvement in the future therapeutical measures to be employed, as well as in the more thorough and intelligent pathological investigations which will be made.

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NOTES ON A CASE OF TETANY.

Read in the Section of Diseases of Children at the Forty-first Annual Meeting of the American Medical Association, at Nashville, Tenn., May, 1890.

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Under the various names of tetany, tetanella, idiopathic muscular spasm, and carpo-pedal spasm, we find described a variety of cases which have, as prominent symptoms, more or less tonic contractions of the muscles of various parts of the body, beginning usually at the extremities and passing, in somewhat regular succession, to the muscles of the body and head. The consciousness of the individual is not disturbed during the paroxysm.

The symptoms of this disease trench closely on those of a number of the functional neuroses; and it is probable that many of the cases reported un-

der this heading are really spasms due to reflex irritation, caused by teething or a disordered condition of the alimentary canal; or to irritation produced in the nerve-centres by the distal ends of nerves, leading to them, being involved in cicatrices or other inflammatory products; these cases are permanently cured by removing the cause of the irritation. It is also probable that in this category cases have been reported which should be described under the title of hysteria.

The causes usually assigned as producing tetany are exceedingly numerous and various; chronic and debilitating diarrhoea, lactation and pregnancy, stand first, perhaps. Typhoid fever, rheumatism, measles, pneumonia, Bright's disease, small-pox, cholera, malaria, exposure to cold, anæmia, sexual excesses, alcoholism, excision of thyroid gland, intestinal worms, disordered stomach from undigested food, lead poisoning, and epidemic influences, have all been thought to be causes. In reading over the reports of some cases one is led to believe that many of the above named causes are only coincidences, and had nothing to do with inducing the disease. An important diagnostic point of this disease is the tendon-reflex action produced by pressing on the large vessels and nerves (Trousseau's symptoms). This is not always present, but in no other disease has it ever been recorded.

Chvostek was the first to direct attention to the increased mechanical excitability of the muscles and nerves in this disease; he found in many cases that during the latent period the calf-muscles were slightly contracted. During the paroxysms consciousness is intact; and the muscular spasms are tonic.

The present light on the pathology of this disease points to the nerve-centres as the site of disturbance.

Herz thought the disease was due to anæmia of the spinal cord. A. Jacobi attributes it to meningeal hyperæmia. Gowers teaches that it is probable that the primary pathological lesion is in the motor cells of the cerebral and spinal structures; and that thus is explained the tendon-reflex symptoms usually present in this disease. Whatever the pathology may be, there appears to be an inability to inhibit in the nervous and muscular organs.

I am induced to offer these notes on the following case for three principal reasons:

1. Tetany is a disease whose limits and symptomatology are not well defined.

2. The case which fell into my hands had the signs, usually given as belonging to this disease, well-marked. In addition there were other prominent symptoms, which I do not find given in any of the accounts of the disease which I have consulted, viz.: the absence of normal reflex excitability in the extensor muscles, as shown by the want of the tendon reflex action of the exten-