The eruption was confined to the face, neck, sternal region and upper portion of the back. On the left side of the face it was especially profuse above the eye, nose and mouth. The most striking lesion was situated near the angle of the mouth. This consisted of a perfect circle, an inch in diameter, enclosing two other less perfect circles. The same tendency to form rings within rings was less shown in a patch above and to the outer side of the left eye. On the right side of the face there were several semicircular figures at the angle of the mouth and along the border of the jaw. A very characteristic lesion was present on the upper lip just below the nostril. This was a delicate semicircular ring with its convex border toward the mouth, which I have observed to constitute in another case the sole cutaneous manifestation of the disease. On the sides of the neck and over the manubrium and upper part of the back were other circinate and gyrate patches. One of these on the back showed an abortive attempt to form five concentric circles.

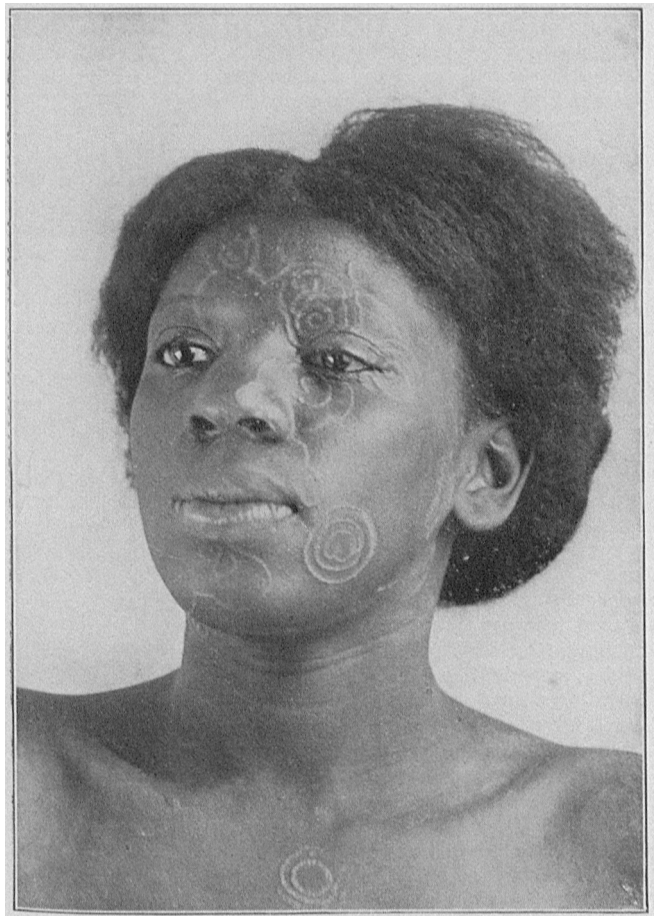

Fig. 2.—Eruption on left side of face. Note perfect circle enclosing circles at side of mouth.

The patient was difficult to control and left the clinic before the eruption had disappeared.

I am indebted to Dr. George T. Jackson for the privilege of reporting this case from his former service at the Vanderbilt Clinic.

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Endemic or Epidemic Poliomyelitis.—Although we refer to poliomyelitis as "epidemic," its incidence in any large population is always small even during epidemics. Occasionally, in a small group of people, a large percentage may be attacked, but considering any large group, as the population of a city, a county or a state, the attack-rate, even in so-called epidemics, is seldom more than one per thousand, usually even less.—W. H. Frost, *Am. Jour. Pub. Health.*

SPASMODIC TORTICOLLIS

NOTES ON THE ETIOLOGY IN TWO CASES *

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I employ the term "spasmodic torticollis" generically and do not wish to be understood as classing all conditions presenting this symptom (for it must be borne in mind that torticollis is a symptom and not, properly speaking, a disease) as a spasm. In fact, the object of this paper is to analyze the symptoms of two cases, which have come under my notice recently through the kindness of Dr. Emmet Rixford, in order to determine if possible whether we are dealing with a tic or a spasm.

Accepting the classification of Brissaud, we define a spasm to be a reflex movement due to an irritation somewhere along the pathway of the peripheral reflex arc; while a tic has its origin in the higher psychic functions and is the uncontrollable and often unconscious imitation of a purposive act. I shall recall the chief points of difference between a tic and a spasm by comparing their symptomatology. The mental state of the ticquer has often been noted. Whatever the ticquer's age, he presents the mental state of a lower age. He is apt to be poorly balanced in his attainments. The volition is weak and unstable. Impulsive manifestations are common. The ticquer is apt to be impatient. The emotions are often difficult of control. Obsessions are common. Together with the mental instability, there is often a motor instability manifested by a difficulty in conserving the immobility. These psychopathic symptoms do not form part of the picture of spasm.

The volition, efforts of attention and distraction modify a tic and may cause its temporary cessation. This does not happen in a spasm.

Tic is often preceded by an imperative desire, and the performance of the tic is followed by a feeling of satisfaction.

Certain antagonistic movements not of a forceful nature may be sufficient to control a tic, while these movements are quite inadequate in a spasm. I shall refer more in detail to these antagonistic movements in the case reports.

A tic ceases during sleep, a spasm persists.

The convulsive movements of a spasm are extremely brusque, resembling the muscular contraction caused by the electric current. The muscles involved correspond to the anatomic distribution of a nerve. If a portion of one nerve is involved the spasm may be partial or even fascicular as seen as a complication of facial paralysis. If the whole nerve is affected the convulsive movement may be quite unlike that produced by the performance of a purposive act. Thus Babinski has noted an asynergia of the muscular movements in cases of facial spasm, and called this condition paradoxical synergia. In this condition the forehead of the affected side is wrinkled by action of the frontalis muscle, while the eye is closed due to the action of the orbicularis palpebrarum, both of these muscles being innervated by the same nerve, the facial. This combination of movements cannot be produced simultaneously by effort of the will. A tic, on the contrary, is often a complicated associated movement calling different nerves and

*From the Neurological Clinic, Medical Department Leland Stanford Jr. University.

*Read at the meeting of the San Francisco County Medical Society, Jan. 21, 1913.

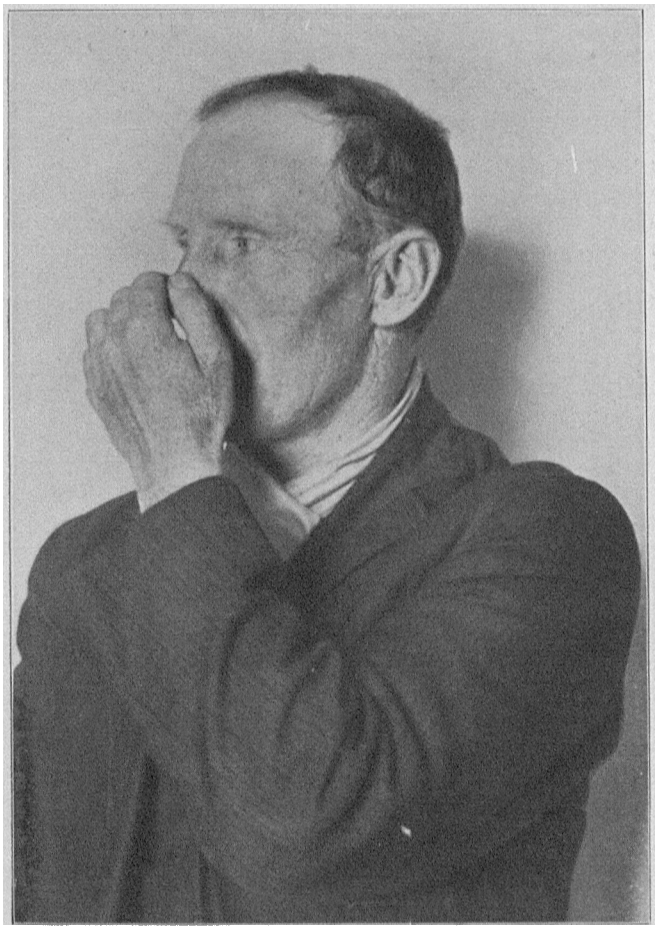
their muscles into play and has for its object an act with a definite purpose.

Pain properly speaking may be the accompaniment of a spasm, but not of a tic.

A true tic is variable in intensity, varying from one day to another. A true tic is often benefited by treatment properly directed, such as exercises of control and due attention paid to the psychic elements of the case. A spasm is not influenced by the same methods.

The importance of a correct diagnosis is therefore evident, as the treatment of these two affections is entirely different. Let me bring out the chief points in the case histories of my two patients.

Case. 1.—J. R., aged 47, unmarried, a laborer, is not handicapped apparently by hereditary nervous influences, as we can find no evidence of nervous or mental disease in his family history. As a child he was robust physically but inclined to be "nervous." He relates a story of how as a boy he went to have his picture taken. The ordeal of "posing," as he expresses it, caused an uncontrollable turning of his head to one side which was similar in some respects to the affection of which he now complains. He states that he is reserved and even bashful in company. He is of a retiring disposition but not a person whom one would call nervous in the generally accepted meaning of the term.



The *geste antagoniste efficace.*

Present Trouble.—This dates back five years. It consists in an uncontrollable tonic contraction of the muscles at the back of the neck causing the head to turn to the left side. This movement is accompanied by some soreness in the muscles affected but there is no definite pain. In referring to our notes we find that this affection began after a particularly hard journey to Alaska where he also had financial difficulties associated with a mining claim. It appears that he was under considerable mental stress at that time. There is no history of his suffering from any illness. In searching for the pathogenesis of the affection the following was brought out. At first the head was inclined to turn to the right. To correct this, the patient conceived the idea of changing his position while working with his shovel (being right-handed his head followed the movements of his shovel to the right). He now changed his position and shoveled to the left, the head now turning to the left while he worked. Not only did he correct the torticollis to the right but he overcorrected it, and the head assumed the position to the left which it continued to occupy during the first attacks. After vainly seeking relief by internal medication, he placed himself in the hands of a Seattle surgeon who performed several operations on the left side of his neck. The scars of these operations are still plainly seen over the attachments of the sternocleidomastoid and trapezius muscles. These operations afforded the patient no relief. He later came under the care of Dr. Rixford. Dr. Rixford performed an operation directed toward removing the function of the splenius capitis and complexus muscles of the affected side. The operation was successful and the patient was much benefited. This last operation was performed about three years ago. About six months before the patient first came under my observation in November last, a torticollis set in on the opposite side, the right.

Examination.—The patient presented a torticollis due chiefly to the spasmodic contraction of the sternocleidomastoid and the trapezius muscles of the opposite side but it was observed that the elevation of the chin generally noted was very little marked. Pain was complained of in the muscles in the back of the neck on the left side. The head could be held directly forward without difficulty when the patient was at rest, as while sitting; as soon as walking was attempted the tonic contractions would take place. When he was asked to turn his head to the right side it would be spasmodically fixed in this position in spite of all effort to restore it to the original position by means of antagonistic muscles. But now the remarkable fact: If the patient would grasp the tip of his nose the head could be replaced by an exercise of force evidently too slight to overcome an actual spasm of such powerful muscles as those in question. We are dealing here with a symptom which Meige and Feindel in their monograph on ties speak of as *geste antagoniste efficace.* A physical examination showed no evidence of any organic or other disease present. No local cause could be found to account for the affection. The spinal column appeared normal. There was no history of rheumatism. The eyes were examined and found normal in every respect.

Diagnosis.—In view of the facts brought out, the psychic torticollis in childhood, the pathogenesis of the first attack and the means the patient takes to overcome the tonic spasm, a diagnosis of tic was made, or of torticollis mental of Brissaud.

Treatment and Course.—The treatment for this condition was instituted but was not followed by very satisfactory results, although some improvement was noted. The pain in the neck persisted. At the urgent request of the patient a radiograph of the cervical spine was taken. Proliferation of bone at the level of the fifth cervical vertebra was seen. Treatment was now instituted for an osteo-arthritis of the spine, and the possibility of a spasm due to an irritation of the spinal nerve roots was considered. Internal medication with the salicylates and potassium iodid, counter-irritation over the spine and spinal galvanization were in turn employed without beneficial results. Finally extension was used but with no better success. What help we were able to render this patient came from the treatment instituted for tic.

Case. 2.—C. E. R., aged 37, married and the father of two healthy children, is an inspector in the customs service and is assigned to night duty. He is apt to have insufficient sleep and his meals are often taken at irregular hours. In order to keep awake at night he has been in the habit of taking considerable coffee. Factors of importance to be noted in his history are that a brother of the patient is very eccentric in his conduct and at times does not appear to be perfectly nor-

mal mentally. His mother is what the patient calls "nervous" and on several occasions has had a nervous breakdown. The father died of arteriosclerosis at the age of 74. Besides the usual diseases of childhood the patient has had diphtheria and dysentery. In Manila in 1899 he had malaria. Following this he had two attacks of what he termed rheumatism. In 1909 he had an attack of pneumonia. The patient is said to have been rather backward at school and stammered when a boy, a habit from which he has not entirely recovered. He has remained in his present employ for a number of years without promotion. Whether deserving of promotion or not, the fact that he has not made any progress in his work has been a source of considerable chagrin to his family and himself. He is at present in a controversy with the customs department with a view to having day duty. In addition he has a source of worry in the settlement of his father's estate.

Present Trouble.—The torticollis from which our patient is a sufferer had its beginning directly following his return with the California Volunteers following the Spanish-American War. On account of his illness in Manila and the hardships of the life to which he was exposed, his health was considerably impaired. He had lost much in weight. His mother stated that his trouble began with a movement of his left hand to the neck and a slight rotation of the head. In 1902 the trouble had progressed to such an extent that the patient applied to Dr. Rixford for relief. At this time the head would incline almost to contact with the right shoulder, and while walking he was continually obliged to support the head with the hand of the same side. Several operations were done in which the spinal accessory nerve, the second cervical nerve, the sternocleidomastoid and trapezius muscles and finally the entire muscular mass involved in the contraction were divided. These measures were successful and the patient was relieved of his trouble until September of last year when there was a recurrence on the opposite side. It was at this time that I first saw the patient.

Examination.—There was an inclination of the head toward the left shoulder and a rotation toward the right shoulder with elevation of the chin. The head could be brought to the median line by a maneuver similar to the one employed in the first case; in this instance the gesture was with two fingers of the left hand. A very slight pressure thus applied was sufficient to redress the head. A point of tenderness was found at the exit of the great occipital nerve on the left side and spontaneous pain was complained of in this locality. When questioned as to the character of this pain, as to whether it was a soreness or a pain properly speaking, he found it difficult to determine this point. The patient's wife stated that the torticollis was less when his attention was diverted. During a performance at the theater, for instance, the torticollis has been observed to cease for the time being. The information was also obtained that the movements ceased during sleep, a very important point. The pathogenetic factor in this case was searched for and it was learned that before the torticollis was definitely established the patient noticed certain cracklings in his neck which were of some concern to him. He acquired the habit of reproducing these by movements of the head resembling the movements which have now become involuntary. Certain mental states aggravate his trouble. When he is annoyed and worried the torticollis is worse. In the physical status the only positive finding of importance was a systolic murmur at the base of the heart. The heart was not enlarged. The red blood-count was 4,500,000 and the hemoglobin was 65 per cent. by the Sahli instrument. The urine was normal. A radiograph taken of the cervical vertebrae showed nothing abnormal.

Treatment and Course.—Treatment was directed toward regulating the daily routine. The patient was advised to avoid all stimulants, such as the excessive use of coffee mentioned before. The importance of sufficient sleep and of regular hours for his meals was emphasized. He was told of the psychic element in the production of his affection and was told that in the method of treatment to be followed his active cooperation was necessary. The drugs to be given were in no sense curative but were in the nature of tonics. Three times a day he was to practice his exercises before a mirror as advised by Meige and Feindel. Furthermore, he was told to endeavor to control those emotions which he recognized had a tendency to aggravate his trouble. The torticollis seemed to improve at times and at others seemed to be stationary. Of late, however, there appears to have been a decided improvement permitting us to believe that we are on the right track and that the patient is being rewarded for the conscientious carrying out of the directions given.

SUMMARY

It will be seen that I have dwelt on the psychic symptoms in these two cases at length. I have done so because they stand out prominently in the histories of the cases and dominate the clinical picture. Both these men are neurotic. The character of the torticollis resembles that of a tic in the pathogenesis, in the character of the contraction (being a movement due to a tonic contraction, slow and resembling a definite movement adapted to a purpose, as opposed to a quick jerking movement resembling that due to the response to an electric current), in the absence of any severe pain and in the control of the movement by maneuvers which would be quite inadequate in a spasm.

It has been the object of this paper to throw some light on the nature of the affection in these two cases. I think that torticollis is very often to be classed as a tic.

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PELLAGRA: SOME FACTS IN ITS EPIDEMIOLOGY *

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The purpose of this article is to present a few facts in the epidemiology of pellagra. These facts pertain to 323 cases of pellagra which were seen by me during the summers of 1911 and 1912 while engaged in the pellagra field-work undertaken by the United States Public Health Service. The object of this field-work was primarily to collect data which would show the character of the home environment of the pellagrins and the nature of the conditions under which the disease was developing; in short, to make a study of the disease from the standpoint of hygiene. It was thought that information bearing on these points, in a large series of cases, might be of some value in indicating a direction for some line of investigation which might possibly lead toward the discovery of the cause of the disease, or of a method of its transmission. With these points in view the facts in this article were collected and have been recorded here, with the hope that they may be of some interest now and of some value in the future, when supplemented by data from other sources.

During the progress of my work 200 or more physicians of Kentucky, South Carolina and Georgia were consulted, 296 pellagrous homes visited, and 323 pellagrins personally interviewed. The visits to the homes of the pellagrins were always made in company with the family physician. This rule was strictly adhered to. For collecting the data case-cards measuring 5 by 8 inches were used. These cards were numbered serially and are now on file. On the cards are spaces for notes pertaining to the following points: name, address, race, sex, age,

* Modification of paper read at the second triennial meeting of the Association for the Study of Pellagra, Columbia, S. C., Oct. 3, 1912.