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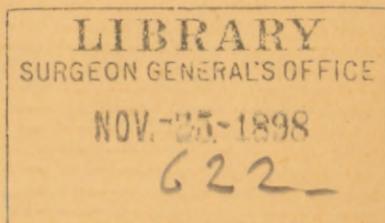
Chorea among Public School  
Children.

BY WILL S. MONROE.

Department of Pedagogy and Psychology in the State Normal School,  
at Westfield, Mass.

An address before the Massachusetts Teachers' Association, Novem-  
ber, 1897, and reprinted from American Physical Education  
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*Presented by the author*



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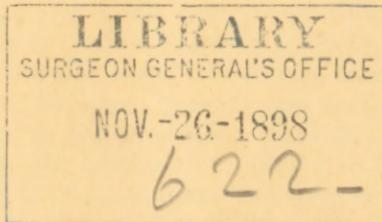


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## CHOREA AMONG PUBLIC SCHOOL CHILDREN.\*

WILL S. MONROE.

THE modern public school, with all its blessings, is a factor in the production of muscular and nervous disorders. And, until we are able to develop organisms adapted to the demands of present educational systems, many must necessarily lose efficiency in the effort to make themselves efficient. But the school is not alone in breeding diseases and unfitting many who are endeavoring to fit themselves to succeed. In this day many forms of professional and mechanical activity call for degrees of sustained effort which leave their trace in impaired muscles and injured nerves. One has but to glance through the pages of such a book as Hirt's "Krankheiten der Arbeiter" and read the long list of occupation neuroses—writer's cramp, telegrapher's cramp, seamstress' cramp—to be assured that the shop and the office, no less than the school, contribute their quota to the frequency and variety of fatigue neuroses.

A movement disorder which has presented itself to the writer with sufficient frequency to be considered more or less important is that of chorea, popularly known as "St. Vitus' dance." And in conversation with medical men, I have learned that the school is regarded as an important factor in the development of chorea and allied functional nervous diseases. Dr. Wm. Dale in a late issue of the *Lancet*, says: "Brain pressure of many studies in delicate and half starved girls is the most potent cause of chorea in our elementary schools." Von Ziemssen in Eulenberg's Cyclopædia of Medical Practice says: "Hereditary tendency to hysteria, bad education, indulgent parents, and credulous teachers play the chief part in the production of chorea." And Dr. Sturgis, physician to the hospital for children in London, says: "The physical indications of injurious schooling are of many degrees—not all of them obvious to unskilled observers. The early restlessness of children is very apt to be overlooked or misunderstood. As a consequence it presently grows into the disorder known as St. Vitus' dance."

\* Read before the Massachusetts State Teachers' Association, December, 1897.

Every choreic child passes her novitiate of restlessness—muscular twitchings of the arms, shoulders and legs, awkwardness in the execution of delicate tasks, exaggerated movements of face muscles, wrinkling of the forehead and knitting of the eyebrows. The development of the malady is slow and insidious, and these early evidences are, as Dr. Sturgis points out, apt to be overlooked or misunderstood by teachers.

At my request some teachers in the public schools recently observed during a period of five days the nervous manifestations of the children in their respective schools. And while it was noted that most children had a large repertory of such performances, it was also noted that there was usually one motion which was more persistent and more violent than the others. A group of 21 of the most nervous children were found to repeat the following movements during one school day: A, biting the lips, 13 times; B, stroking the forehead, 11 times; C, frown, 8 times; D, smoothing the hair, 7 times; E, biting the fingernails, 7 times; F, tapping on the floor with foot, 7 times; G, running the fingers through the hair, 7 times; H, pulling at a button, 7 times; I, stroking the face, 6 times; J, tapping on the desk with the fingernails, 6 times; K, swinging the foot, 6 times; L, rolling up the edge of the coat, 6 times; M, sliding the foot along the floor, 5 times; N, locking the fingers, 5 times; O, twisting a lock of hair, 5 times; P, shrugging the shoulders, 5 times; Q, snapping the fingers, 5 times; R, moistening the lips with the tongue, 5 times; S, folding the arms, 4 times; T, twirling the thumbs, 4 times; U, raising and lowering the right shoulder, 4 times.

In some instances these motions and grimaces are repeated for months and then disappear; and if this were the end of the matter it would scarcely seem worth our while to label a manifestation so apparently trivial a school-bred disease. But in so many instances another grimace or motion takes its place, and the variety and obstinacy of the habit becomes pronounced and fixed. I had in my classes recently a young woman who continually toyed with her pencil during recitations. I talked with her a number of times about the matter, and she told me that she had acquired the habit years before in the elementary schools. She admitted that she was usually able to control the annoying movement, but that restraint became increasingly difficult the longer she made such effort, and that a certain physical discomfort resulted; while to give way and let the impulse have free expression

gave her a feeling of relief. These unwilling movements are apt to be overlooked by teachers, and yet they are indices in the progress of the disease and hint at a fall from the plane of health.

In his paper read before the seventh international congress of hygiene and demography on the "Physical Indications of Injurious Schooling," Dr. Sturgis analyzed 177 cases of choreic children, and the disease in 34 per cent of the cases he maintained were school-bred—due to overwork in school, preparation for examinations, school punishments and worry over difficult tasks. With a view to ascertaining the frequency of the disease in the public schools of Massachusetts, I sent the following letter to thirty teachers: "Have any instances of chorea, commonly called St. Vitus' dance, come within your experience as a teacher? If so will you not kindly write me all the particulars that you may know regarding each case—sex, age, causes of disease, present condition of the child, etc." I received 21 replies. Eight stated that no cases of chorea had come within their teaching experience, and 13 reported one or more cases each. Three reported three cases each; five reported two cases each, and five reported one case each. I am fully conscious of the fact that information thus received is very imperfect as evidence, but it seems to me sufficiently suggestive of probable frequency of the disease to justify analysis, and in the hope of securing more exact investigation, I have presented the returns under the rubrics, Sex, Age, Intellectual and Physical Conditions and Apparent Causes.

1. Sex.—Sixteen of the 24 cases reported were girls and eight were boys. Of the 177 cases reported by Dr. Sturgis, 134 were girls and but 43 were boys. In the report on chorea made to the British Medical Society, covering 439 cases, 322 were girls and 144 were boys. Judged by standards of sex, the girls appear more susceptible to chorea in about the porportion of three to one.

2. Age.—The age of three of the 24 cases reported to me was not stated, and the ages of the remaining 21 cases ranged as follows: One child was under six years; eleven were from six to ten years, seven were from 11 to 15 years, and two were over 15. In the report made by Dr. Mackenzie to the British Medical Society but six cases (out of 439) were under six years; 149 were from six to ten years; 191 from 11 to 15 years. The years from eight to eleven represent the period of greatest frequency.

3. Intellectual Condition.—One of my correspondents reports: "The child always appeared simple and was generally behind in her work." Another says: "She was formerly bright but she is now slow in her work and her speech is very imperfect." The British report states that the previous mental condition of 68 per cent was about normal; 13 per cent were below the average, and 7 per cent below. But all authorities are agreed upon the ultimate mental consequences of the disease—diminished attention, impaired memory, irregular speech, and whimsical, irritable temper.

4. Physical Condition.—One of my correspondents writes: "The boy was always frail." Another says: "The child is thin and wrinkled." A third: "The child is apparently in good health and is very stout." Forty-eight per cent of Dr. Mackenzie's choreic children were thin; 43 per cent were stout, leaving but 9 per cent for the normal type. The debilitating conditions of chorea are most unfavorable to normal growth. Incoherence of muscular effort is frequent. The penmanship is bad; the drawing unsatisfactory, and the mathematical work slow. Vision not infrequently is impaired. Dr. Stevens, the eminent oculist of New York, has shown the need of examining the eyes of all children with choreic tendencies. He maintains that ocular defect or eye strain is an important accessory factor in the genesis of chorea. And although the experts of the New York Neurological Society have shown in a careful and apparently impartial report that ocular defect alone cannot cause or cure chorea, the fact nevertheless remains that ocular insufficiencies do accelerate functional nervous troubles. Dr. Frederick E. Cheney, in an address before the Massachusetts Medical Society on "Errors of Refraction and Insufficiencies of the Ocular Muscles as Causes of Choreia," reports on the treatment of 23 children, mainly from the public schools of Boston, and he shows that with a few exceptions the children were helped by means of glasses or operations.

5. Causes of Choreia.—Among the causes enumerated by my correspondents are the following: Hereditary predisposition: the father a drunkard, and the mother weak-minded; over-study; appearance in public of a child vocalist, at the time but ten years old; heart disease; worry over examinations and promotion; late hours; much dancing, and social dissipation in general; mental depression due to the death of the child's mother;

shock occasioned by a fall; ill treatment and severe punishments at home; severe fright from being chased by a dog; the mother in her girlhood had over-studied, had had chorea, and the child had inherited the neurotic tendency. Dr. Mackenzie has attributed the cause of one-half of his cases to be of a direct nervous character—98 from fright; 71 from mental over-work, 34 from bodily over-work, 17 from shock, and 13 from imitation.

It is clearly apparent that imitation is an important factor in the production of chorea. This fact is fully confirmed by the history of the Middle Ages. Brichteau report that the presence of a choreic child in one of the schools of France caused the development of the disease in eight other girls within six days, and that its spread was arrested by the choreic subjects being segregated. Dr. Wichmann in a recent issue of a German medical journal reports such an epidemic in the village of Wildbad, Germany. Twenty-six children were afflicted, 18 girls and eight boys. The fact that the disease is so easily propagated by psychical contagion indicates how important an early diagnosis becomes and how necessary prompt segregation.

The character of the disease would suggest that the teacher would be one of the first to note its development. Experience clearly shows that this is far from being the case. One teacher writes me: "I had observed for some weeks that J.'s arms and shoulders twitched, but I considered that the twitching was merely due to nervousness. He seemed to do fairly well in his studies and I paid little attention to the twitchings. Where he failed was in the Friday afternoon speaking. When he tried to declaim he would say perhaps two or three words and then break down. I compelled him to try the same piece week after week, but he rarely gave more than a few sentences. One Friday afternoon he recited the entire piece, the only apparent difficulty being the frequent long pauses. On the Monday morning following I learned that the boy was ill, and it transpired that he was suffering from St. Vitus' dance." It may be said that this was a cruel, thoughtless teacher, but she has numerous associates—teachers who continually sin in ignorance, and by their ignorant sinning they aggravate and bring to fruition no small number of school diseases. The child's clumsiness and apparent carelessness are considered in the light of pure cussedness or his petty exhibitions of temper render him a nuisance; and, instead of sending him home to be properly fed and given sufficient sleep and

rest and quiet, most human schoolteachers do just what never should be done with choreic children—they punish them.

I have attempted to note the premonitions of chorea in only the broadest outlines, and in closing I wish to suggest to teachers some physical tests whereby the disease may be detected and its full development averted. Those suggested by Dr. Sturgis seem to me preëminently practical: "1. Movement disorder is the product and the index of mental disturbance, and it may be known by observations of the higher muscles (the face and hands) before it has reached the stage to which the term St. Vitus' dance or chorea properly applies. 2. When school children (and especially girls between seven and twelve) alter in temper, work less well and less willingly than usual, get untidy or slovenly—in a word, degenerate mentally and bodily—inquire of the mother as to the home conduct and temper. Ask particularly how the child sleeps; whether she complains of headache or limbache; whether her food is sufficient. 3. Among the incidents of school life apt to be injurious in the way we are considering, there stand out prominently (1) written examinations, (2) moving into higher classes, (3) work in arithmetic, especially when the sums are too difficult or ill-explained, and (4) punishments, particularly punishments or admonition before the schoolfellows. 4. The best index of muscular infirmity tending to St. Vitus' dance is the hand. Face mobility may be mere nervousness, and the tongue may be tremulous by nature. The hand test is infallible and is thus applied: Bid the child hold up both hands open, with extended arms and palms toward you. If this is done steadily, both hands upright and both alike, nothing to choose between the positions of the two, then the child has not, nor is it near (before or after) St. Vitus' dance. You may confirm this test by another: Let the child place its open hand upon yours, palm to palm. Looking then at the backs of the child's hands, observe whether the fingers and thumbs (and especially the latter) repose naturally, without tremor and without restraint."

## Other Writings by Mr. Munroe on the Education of Defective Children.

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1. **EDUCATION OF FEEBLE-MINDED CHILDREN IN CALIFORNIA.** *Pacific Educational Journal*, San Francisco, April, 1894. Reprinted in *Institution Bulletin*, Sacramento, May, 1894. Pamphlet reprint, pp. 8, San Francisco, 1894.
2. **EDUCATION OF DEAF AND BLIND CHILDREN IN CALIFORNIA.** *Pacific Educational Journal*, San Francisco, May, 1894.
3. **FEEBLE-MINDED CHILDREN IN THE PUBLIC SCHOOLS.** Proceedings of the Eighteenth Annual Session of the Association of Medical Officers of American Institutions for Idiotic and Feeble-Minded Persons. J. B. Lippincott Co., Philadelphia, 1894. Pamphlet reprint, pp. 12, Westfield, Mass., 1897.
4. **ENGLISH INSTITUTIONS FOR THE FEEBLE-MINDED.** *Institution Bulletin*, Sacramento, February, 1895.
5. **DIE FUERSORGE FUER DIE ABNORMEN KINDER IN DEN VEREINIGTEN STAATEN.** *Die Kinderfehler*, Langensalza, Januar, 1896. Erster Jahrgang, Heft I.
6. **A PARENTAL (TRUANT) SCHOOL.** *Journal of Education*, Boston, March 26, 1896.
7. **EDUCATION OF DEFECTIVE CHILDREN.** *The Congregationalist*, Boston, August 12, 1897. Vol. LXXXII, No. 32.
8. **BIBLIOGRAPHY OF EDUCATION.** Pp. 202, D. Appleton & Co., New York, 1897. (Section IX gives a bibliography of the English books and pamphlets bearing on the education of defective children.)
9. **UEBER DIE BEHANDLUNG DER VERBRECHER.** *Die Kinderfehler*, Langensalza, Januar, 1898. Dritter Jahrgang, Heft I.

