TWO CASES OF INFANTILE HEMIPLEGIA FOLLOWING CONVULSIONS IN SCARLET AND MALARIAL FEVER.

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CASE I.—During the prevalence of an epidemic of scarlatina of severe and fatal type, Charles S., aged 2½ years, on March 23, 1885, with a temperature of 106° F., had most severe and long-continued convulsions controlled after six hours by frequently repeated cooled down baths. The following day a copious characteristic eruption of scarlatina was present and complete right hemiplegia. The fever ran a favorable course, the patient being normal in temperature by the tenth day. The paralysis, however, remained unimproved, there being absolutely no use of the arm, although later the child was able to walk, dragging the right leg. At the end of a year there was present some athetosis and not the slightest sign of returning power in the paralyzed side. By the removal of the family to Alton, Ill., the case passed from my knowledge and observation after fifteen months, but on October 20, 1899, from an aunt of the child residing here I get the following further history: When the child was four years old epilepsy first showed itself, the child having the convulsions about once a week. These have increased in frequency in spite of such treatment as they were able to give it, until now, when the boy is nearly 17 years of age they occur twice a day. The lad is mentally deficient, has never gone to school, and has still complete right-sided paralysis with muscular rigidity and contractures.

Case II.—Timothy R., aged 18 months, July 20, 1896, with a temperature of 106.5° F. after a malarial chill had severe and lasting convulsions controlled only by chloroform inhalations, while cold bathing was resorted to for reduction of the excessive temperature. The convulsions ceased after two hours.

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and the temperature was normal the following day, but there was present complete paralysis of the right arm and leg and the left side of the face and tongue. This remained unimproved for some weeks when he was able to walk dragging the right leg, but had no use of the right arm. Gradually, some power in the muscles of the upper arm was noticed and this spread by degrees until by the end of a year he made considerable use of the hand. The child is today, after the lapse of over three years from the appearance of the hemiplegia, bright, intelligent and well-grown, and shows not a trace of the palsy which was so long complete. He uses the left hand by preference, having become left-handed through the long period of disuse of the right side; but I can note no difference in the power of
the grasp of the two hands. He is, if anything, superior in mental and physical development to his twin sister who has never had a serious illness. The accompanying photograph shows the use the patient has of arm and leg and the relative development of the two sides. The treatment used in this case was 10 gr. potassium iodide per diem in divided doses, continued for several months.

Two cases of any sort, unaccompanies by autopsies, make a relatively small number upon which to base very positive views as to pathology, prognosis or therapeutics, but these have been enough to make me have some opinions that are not altogether in accord with the prevailing ones to be found on the subject. Thus Hirt says, "A hemiplegia due to cerebral hemorrhage can in most cases be excluded owing to its rarity in childhood." The two cases just reported, all that have come under my personal care and observation were, in my opinion, both due to this cause. Their origin in acute infectious fevers with temperatures so high as to produce severe and long-continued convulsions, indicate that a rupture of cerebral vessels as a result of the violent spasm was the etiologic factor in both cases. There has come under my observation a cerebral hemorrhage with consequent left hemiplegia in a woman of 35 years, from the uremic convulsions due to a puerperal nephritis, the convulsions first appearing some two weeks after child-birth. On the subject of prognosis the same authority says, "The prognosis is absolutely unfavorable. Complete recovery is impossible, and has never been observed." Church states the same as his experience. Holt and Rotch and Peterson state that complete recovery is rare. In my second case after a lapse of only two and a half years from the complete right hemiplegia, there is absolutely no difference to be discovered between the use of the two sides and there is no difference in the muscular power of the two hands in grasping or of the legs in walking, and the hypoglossal nerve is perfectly restored, the tongue being protruded in exactly the median line. The result achieved here is exactly what we find in adults in whom the amount of cerebral hemorrhage has been small and in whom along with its absorption there comes a restoration of power in the paralyzed side. This I had occasion to observe repeatedly during nearly five years of service as surgeon of the Illinois Soldiers' and Sailors' Home,
in which more than 2,000 old, sick and disabled men were under my care.

Jendrassik rather shares my view of the etiology of a large number of these cases and combats the view of their polioencephalitic nature advanced by Strümpell and Hirt. He says "Vascular lesions play as important a part in the acute paralyses of children, as in the apoplexy of the aged." Osler in an analysis of 135 cases, regards hemorrhage as the most frequent cause, Abercrombie and Heubner favor the embolic origin, and Money and Gowers regard Thrombosis as the most frequent vascular lesion. Jendrassik regards the embolic as best supported, not only through the majority of the anatomical findings (embolism of the left art. fossae Sylvii) but also by the preponderance of right-sided hemiplegias. After scarlet fever Freud and Rie observed 15 right-sided, and only 3 left-sided hemiplegias. Donkin thinks that the probable explanation of the cases of hemiplegia which take place during measles, scarlatina, and other acute infectious diseases, is either hemorrhage or thrombosis of the cerebral vessels. He quotes one severe case occurring in his own practice in a child of 15 months, as a result of measles. In this case there was complete recovery after four months. Dr. Abercrombie reports a case of sudden left hemiplegia in a boy of six years in which autopsy revealed thrombosis of the right middle cerebral artery. In the cases due to whooping-cough hemorrhage from increased vascular pressure has been found to be the cause even though there was no anatomical change in the vessel walls.

Alexieff reports two cases of infantile hemiplegia—the result of scarlatina—one recovering completely. The other died and a necropsy showed a thrombus in the middle left cerebral artery.

Theodor reports two cases, the result of severe paroxysms of coughing during whooping-cough, both of which recovered completely.

Sachs says that the importance of convulsions as an etiological factor in the production of these hemiplegias has given rise to considerable discussion. Freud and Rie do not regard them as causative but as merely denoting the onset of the cerebral process. Sachs and Osler, however, hold that in many cases the palsy is the immediate result of the convulsive seiz-
As Sachs remarks, "Anyone who has observed the marked disturbances of the circulation at the acme of convulsions can readily conceive how easily a blood vessel could burst during this period as a result of excessive stasis. This does occur, moreover, not only in children but in adults." Bearing on prognosis Sachs reports a case of a boy of two and a half years, who, after a simple attack of tonsillitis developed right hemiplegia without coma and without convulsions. Within a period of a few weeks the young boy was entirely well and scarcely retained a trace of the apoplectic condition. There was no history of syphilis in the case and the entire development and retrogression of the symptoms reminded one of an adult apoplexy.

Spiller agrees with Freud and Rie and others that convulsions should in general be regarded as the first manifestations of a previous lesion, and not as the cause of the hemiplegia.

In PEDIATRICS for November 1, 1899, Dr. James Priestly reports a case due to cerebral hemorrhage from convulsions in whooping-cough in a child 20 months old, complete recovery taking place after two months.

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