Urine	41	.00060	.00146
Testicles.....	22	.00030	.00136
Brain.....	71	.00013	.00018
Total.....	1282	.05475	.00419

The second experiment represents cases of acute poisoning with arsenious oxide, and was conducted as follows. Two rabbits, one large, and the other small, were given arsenious oxide. To the larger, two grams were given, and to the smaller one gram was given. They died in about ten hours, and the following parts were removed and a quantitative estimation of the arsenic which they contained was made:

Large rabbit weighed 1520 grams.

	Weight taken grams.	As ₂ O ₃ found	Percentage of As ₂ O ₃
Kidneys.....	20	.00132	.00660
Liver.....	25	.00264	.01056
Lungs.....	7	.02640	.37714
Stomach and contents.....	170	1.62400	.95529
Large intestine.....	156	.23760	.15230
Small intestine.....	55	.00158	.00287
Muscle from abdomen.....	40	.00026	.00065
Muscle from thigh.....	47	A distinct mirror.	
Heart.....	10	.00124	.01240
Brain.....	5	A distinct mirror.	
Total.....	535	1.89504	.35421

Smaller rabbit weighed 562 grams.

	Weight taken grams.	As ₂ O ₃ found.	Percentage of As ₂ O ₃
Kidneys.....	8	.00053	.00662
Liver.....	32	.00164	.00512
Lungs.....	12	.01320	.11000
Stomach and contents.....	75	.66200	.88266
Large intestine.....	62	.05702	.09196
Small intestine.....	40	.00343	.00857
Muscles from abdomen.....	12	.00013	.00108
Muscles from thigh.....	12	A slight trace.	
Heart.....	5	.00026	.00520
Brain.....	4	A distinct mirror.	
Total.....	262	.73821	.28175

The third experiment represents cases of acute poisoning with sodium arsenite, and was conducted as follows: Two rabbits, one large and the other small, were given arsenious oxide in the form of sodium arsenite (Na₃ As O₃). To the larger 2 grams were given, and to the smaller 1 gram was given.

Larger rabbit weighed 1,977 grams; died in 20 minutes.

	Weight taken Grams.	As ₂ O ₃ found.	Percentage of As ₂ O ₃
Kidneys	19	.00330	.01736
Liver.....	65	.01548	.02381
Lungs.....	45	.09240	.20533
Stomach and contents.....	70	.86100	1.23000
Large intestine.....	137	.04224	.03083
Small intestine	37	.00489	.01321
Muscles from abdomen.....	55	.00198	.00360
Muscles from thigh.....	65	.00119	.00183
Heart.....	10	.00264	.02640
Testicles	13	.00026	.00200
Brain.....	5	.00053	.01060
Total.....	521	1.02591	.19691

Smaller rabbit weighed 464 grams; died in 4 minutes.

	Weight taken. Grams.	As ₂ O ₃ found.	Percentage of As ₂ O ₃
Kidneys.....	5	.00119	.02380
Liver.....	36	.00831	.02308
Lungs.....	8	.01056	.13200
Stomach and contents.....	31	.54120	1.74580
Large intestine.....	73	.05795	.07938
Small intestine.....	21	.00660	.03142
Muscles of abdomen.....	10	.00066	.00660
Muscles of thigh.....	10	.00053	.00530
Heart.....	2	.00158	.07900
Testicles	0.9	A slight mirror.	
Brain.....	3	.00019	.00633
Total.....	199.9	.62877	.31454

In these experiments the organic matter was destroyed by chemically pure hydrochloric acid and potassium chlorate. The arsenic was obtained by the Marsh test, and weighed in the metallic state.

It will be seen that in the case of chronic poisoning, for equal weights, the brain contained about one-sixth as much as the liver. In the cases of acute poisoning by the oxide, the amount in the brain was an unweighable quantity. In the case of poisoning with the arsenite, the amount in the brain is larger than when the less soluble oxide was given.

UNIVERSITY OF MICHIGAN, January, 1884.

GENERAL PARALYSIS FOLLOWING DIPHTHERIA. A CASE.

BY CHARLES WESLEY ROOK, M.D., QUINCY, ILL.

In the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, vol. 1, page 649, two cases are noted of the rare sequel "General Paralysis After Diphtheria."

Having within my care, at the receipt of the above mentioned article, a little patient to whom had occurred this rare and distressing sequel, now that the case is terminated, I deem it a professional duty to give a report of the same.

For a brief and concise history of this pathological condition, its association, in the relation of cause and effect, with diphtheria, and for theories concerning its cause or causes, the reader is kindly referred to Trousseau's Clinical Medicine, vol. 1, p. 382, ed. 1882.

November 28, 1883, I was recalled to Stella P., æt. one year and six months, whom I had recently attended during an attack of diphtheria, together with four other members of the family, including the mother, who were also sick with diphtheria. By the close of the second week of treatment all the members of the family were convalescent, except one little girl, æt. three years, who died of diphtheritic croup at the close of one week of sickness.

On November 4, the subject of this report, though much emaciated, her pharynx being perfectly free of any diphtheritic membrane, was discharged. During the interval, elapsing between November 4 and November 28, I saw her twice and was much gratified at the rapid advances that she seemed making toward a complete recovery. When called, Wednesday, No-

venember 28, her mother said that the Saturday previous Stella did much running and playing in the yard; while playing, she was frequently observed to lie down on her back, cry for a few moments, and strike with her feet as if they were giving her pain, then getting up would go on playing as usual. On Sunday and Monday her gait became very unsteady, and on Tuesday she was unable to walk. Wednesday, when placed upon her feet, could stand for only a moment, then would sink to the floor. By inclining her body forward, while supporting her upon her feet, she would make a feeble attempt to walk, but was unable to raise her feet and bring them forward. Examination proved the muscular tissue of the legs to be soft and flabby, the skin of a pale blue color, and the feet and legs, though covered with two pairs of stockings and kept close to a stove, were extremely cold. At the same visit it was noted that the muscular and coördinating powers of the hands and arms were apparently unaffected. The appetite was poor, but the child seemed very thirsty, and at nearly every attempt to quench her thirst, she would strangle, an attack of coughing would be induced, and the greater portion of the liquid would be returned, through the nostrils, to the cup. Her pharynx was completely free of any diphtheritic deposit. The actions of the bowels and bladder were regular. Albuminuria is said to be present quite generally, but I was unable to get a specimen of the urine for examination. The respiration and pulse were somewhat accelerated.

December 1, was hastily summoned, and learned that Stella had had a convulsion, following an attack of coughing, occurring soon after eating dinner. This, I think, was due to some article of food getting into the air-passages. She was very fretful and restless, especially of nights, not even permitting a light blanket to cover her limbs. December 4, I called. Found Stella sleeping. Her left axilla and ilium were approximated several inches nearer than normal, because of a tonic contraction of the muscles of the left side of her body. The muscular power and voluntary movements of the hands and arms were becoming impaired.

Though seen daily, no marked change other than the gradual loss of power in her hands and arms was noted until December 10, when I called and found the surface of her body hot and dry; pulse 160 per minute; the respiration rapid, feeble and shallow; the pupils widely dilated; was unable to raise either hand from off her chest, and in addition to the other symptoms noted, was a tonic contraction of the cervical and dorsal muscles, so that the weight of her body was supported by the occiput and sacrum. During the continuance of this cervical and dorsal muscular rigidity, which was four days, the limbs were completely relaxed, so that we could extend or flex them into any desired position.

Also during this interval of four days there were visual disorders. The pupils remained dilated so that she did not seem to see or recognize her friends. Convergent strabismus was also present, apparently equally affecting each eye, for upon attracting her attention by the exhibition of some plaything, she would fix the object first with one, then with the

other eye. December 13, she was attacked with purulent ophthalmia; the discharge, which was profuse, thick and yellowish, continued for three days, then gradually disappeared. At this time she had a very troublesome cough, the attacks of which seemed to be precipitated by her attempts to swallow liquids. December 17 she was attacked with a slight diarrhoea, which was probably reflex in nature, as she was at this period cutting her superior and inferior canine teeth. The paralytic symptoms were slowly disappearing. December 21, was still improving; drinks without becoming so frequently strangled; her cough less troublesome, and she sleeps well of nights. December 28 she made her first attempt to crawl and walk since she became paralyzed. January 1, 1884, continued her efforts at walking, but because of her weak and emaciated condition the attempts were but feebly executed. Her appetite was increasing, and the excretory functions were normal. January 9, convalescence being established, my little patient was discharged.

In order to complete this report, I called January 28, and found Stella so completely recovered as to leave not a trace of her recent serious illness.

The plan of treatment adopted was the following: For the indications present when first called this combination was ordered:

R Tr nucis vomicæ. sp. chloroformi, aa. ʒss; acidi nitro-muriatici dil., ʒj; inf. gentianæ, q. s. ʒij. M. S.: A teaspoonful three times a day.

This prescription was continued until December 9. December 3, being very fretful and restless, she was quieted with the $\frac{1}{32}$ of a grain of morphia sulphatis. This amount was occasionally exhibited to quiet her restlessness throughout the course of her illness. December 8 and 9, two applications were made, of four minutes each in duration, of a mild induced electrical current. December 10, the paralytic symptoms being greatly augmented, and because of the inability to swallow, the nux-vomica preparation and the application of electricity were discontinued, and in their stead, rectal injections of equal parts of spiritus frumenti and milk were ordered. December 13, the $\frac{1}{30}$ of a grain of nux-vomica was ordered twice daily. For the ophthalmia, was directed thorough and frequent cleansing with cold water. December 14, to relieve the cough the following was given: **R** tr. chloroformi, ʒj; acidi hydrobromici, ʒij; syr. scillæ, ʒij; syr. simp., q. s. ʒiv. M. S.: One-half teaspoonful every six hours. December 18, the nux-vomica was increased to the $\frac{1}{50}$ of a grain three times a day. December 19, as a general tonic, the following was administered: **R** tr. ferri chloridi., ʒss; extractum malti, q. s., ʒij. M. S.: One teaspoonful three times a day. The three latter prescriptions were continued until convalescence was attained.

AN AGED PHYSICIAN.—It is reported that Dr. Jak-inoriez, of Jarvzinka, in the Government of Kiew, Russia, has just died at the age of 107, and that he was able, until nearly the close of his life, to superintend the working of an extensive practice.