

face is emaciated and has that typical waxy, cachectic look which we associate with cancerous patients. The eyes are sunken, the whites distinctly yellowish. He is able to retain but a very small quantity of food and has had several involuntary movements of the bowels. The tongue is distinctly coated and the odor of the breath offensive.

Oct. 3, 1912: No new lesions have appeared, but the abdomen is much more distended and the percussion reveals the presence of a large quantity of fluid. The edema has extended to the right side and down the right leg to about four inches above the knee. The edema on the under part of this leg is so marked and stops so abruptly that it almost has the appearance of a constricting band being placed around the leg above the knee. There has been no vomiting or purging for two days, and the itching has ceased.

Oct. 10, 1912: Four days previously the patient insisted on returning home, but we still had the opportunity of seeing him, and he died on the ninth. Unfortunately, it was impossible to obtain an autopsy, though every means were employed, and we had to be content with biopsy, microphotographs of the sections of which are shown. (Figs. 4, 5 and 6.)

The history of this case only illustrates that too much stress cannot be laid on the necessity of extensive operative measures in radical cases of this kind. They are not the ones in which palliative treatment may be resorted to, but we must let "the healing touch of the therapeutic knife" go deep and far and wide. It is not at all necessary to remove each nevus for fear that it may become malignant. That would be an endless undertaking. But a nevus of the distinct melanotic type should be watched, and should it show any change in structure or any tendency to extend, the dermatologist, if the patient comes under his care—it is a question to which branch these cases belong—must become the surgeon. This action may save life, but only if taken early.

It must be distinctly remembered that I am confining my remarks to melanotic sarcoma only, for in the other types other treatment may be of avail, as Dittrick¹² reports an apparent cure by the x-ray in the non-malignant variety. This is only one of the many cases that have been treated by this means, which undoubtedly should be tried when the nevi are so situated as to be inoperable, as in the inner canthus of the eye. Cases have been reported in which Coley's fluid has been tried, but apparently with little or no success in this type.

I wish to take this opportunity of thanking Prof. Henry W. Stelwagon for his kindness in allowing me to report this case, which was under his care in the Jefferson Medical College Hospital.

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12. Dittrick: Jour. Cutan. Dis., 1910.

Salvarsan and the Ear.—(1. Gellé calls attention in the *Revue hebdomadaire de laryngologie*, 1912, xxxiii, 449, to three cases in his experience in which the patients became totally deaf under salvarsan, and continuance of the salvarsan treatment failed to cure the deafness. This is still total in two cases, but in the third the ear that became deaf a few days before the other returned to normal after a week. The Wassermann reaction is positive in all and the spinal fluid is quite albuminous with considerable lymphocytosis. Two of the patients had been unable to bear mercury, which was the reason the salvarsan had been employed. Gellé is convinced that the salvarsan had some influence on the production of the deafness, and in future he would restrict treatment to mercury or iodid if he had to treat an ear affection in a syphilitic. One of the above-mentioned patients was a young woman, and five injections of salvarsan were made in all in the course of three months. The doses had been 0.3 or 0.4 gm. The deafness came on fifty days after the first and twenty-seven days after the last (third) injection.

ANTITYPHOID VACCINATION IN CHILDREN *

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The prophylactic use of antityphoid vaccine among children has, as yet, received scant attention in medical literature. The subject has been referred to incidentally in papers which I have read at various places during the past year,¹ but heretofore no statistics have been furnished.

Whether the measure be regarded as necessary or merely desirable will depend, to a great extent, on local conditions, but for a large class of young people, it is now, in my opinion, highly desirable. This class includes all those, from 2 to 16 years of age, who leave home for summer vacations, schools and colleges. Osler says:

Typhoid fever is a disease of youth and early adult life. Of the 1,500 cases treated in my wards in the Johns Hopkins Hospital, there were under 15 years of age, 231; between 15 and 20, 253; between 20 and 30, 680; between 30 and 40, 227; between 40 and 50, 88; between 50 and 60, 11; age not given, 1. . . . It is not very infrequent in childhood, but infants are rarely attacked.

The following statistics are based on the records of the inoculation of 359 children, between the ages of 2 and 16 years, who have been vaccinated by fifty different physicians in many parts of the United States; the reports here given may be considered as representing an average opinion of the degree of the reactions.

No attempt has been made to collect statistics regarding the degree of reaction at the site of inoculation, since little variation is noticed; in general there is rather less than is found in adults. The general reactions, as distinguished from the local, divided the cases into four classes, based on the temperature, as follows: Class 1, reactions absent; Class 2, mild, with a temperature up to 100; Class 3, moderate, with a temperature up to 103; Class 4, severe, with temperature over 103.

The dosage is based altogether on body weight and not on age; the child is given that portion of the adult dose which his weight bears to the average adult weight, 150 pounds. If the fraction proves inconvenient, a little more, rather than less, is administered. As with adults, the best time for inoculation is 4 o'clock, or later, in the afternoon, since any reaction will then come after bedtime. This classification of general reactions, with temperature as the principal point, is really a more severe test in children than in adults, as it is well known that the temperature is easily raised in childhood, and a fever is often present from trivial causes.

No harmful effects have been reported in any of the 359 children and, so far as known, none has contracted typhoid fever, although some of the vaccinations were made over three years ago; 42 of the children were inoculated in 1909, 106 in 1910, 172 in 1911, and 39 during the first ten months of 1912.

Revaccination in children should be undertaken earlier and oftener than in adults, since children are immunized on a basis of body weight, and consequently should be given a second course of two or three doses when the weight shows a very material increase. In the absence of final information as to the duration of the immunity,

* From the Army Medical School, Washington, D. C.
1. Russell, F. F.: Results of Antityphoid Vaccination in the Army in 1911, and Its Suitability for Use in Civil Communities, THE JOURNAL A. M. A., May 4, 1912, p. 1331.

We now revaccinate, in any event, after about three years; further experience may show that longer intervals are permissible.

One of the most promising fields of usefulness of antityphoid vaccination in civil life is in the protection of youths and young adults, the most susceptible element of the population, against infection; the magnitude of

TABLE 1.—GENERAL REACTION AFTER FIRST DOSE *

Age	No.	None		Mild		Moderate		Severe	
		No.	Per Ct.	No.	Per Ct.	No.	Per Ct.	No.	Per Ct.
2	2	2	100	..	..	..	..	..	..
3	13	12	92.31	1	7.69	..	..	..	..
4	11	10	90.91	1	9.09	..	..	..	..
5	20	18	90	2	10	..	..	..	..
6	14	11	78.57	3	21.43	..	..	..	..
7	24	15	62.5	7	29.17	2	8.33	..	..
8	30	21	70	9	30	..	..	..	..
9	29	19	65.52	9	31.03	1	3.45	..	..
10	19	11	57.90	6	31.58	1	5.26	1	5.26
11	30	21	70	7	23.33	2	6.67	..	..
12	37	27	72.97	10	27.03	..	..	..	..
13	32	20	62.5	12	37.5	..	..	..	..
14	31	26	83.87	5	16.13	..	..	..	..
15	36	27	75	9	25	..	..	..	..
16	31	24	77.41	7	22.59	..	..	..	..
Totals	359	264	73.54	88	24.51	6	1.67	1	0.28

* Only seven out of 359 had troublesome reactions and of these only one was reported as severe.

TABLE 2.—GENERAL REACTION AFTER SECOND DOSE *

Age	No.	None		Mild		Moderate	
		No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
2	2	2	100	..	..	..	..
3	12	11	91.67	1	8.33	..	..
4	11	11	100	..	..	..	..
5	18	16	88.89	..	..	2	11.11
6	14	13	92.85	1	7.14	..	..
7	23	17	73.91	5	21.74	1	4.35
8	29	26	89.66	3	10.34	..	..
9	29	22	75.86	5	17.24	2	6.90
10	15	15	100	..	..	..	..
11	29	25	86.21	4	13.79	..	..
12	34	32	94.12	2	5.88	..	..
13	31	25	80.65	6	19.35	..	..
14	30	24	80	6	20	..	..
15	34	30	88.23	4	11.77	..	..
16	31	26	83.88	4	12.90	1	3.22
Totals	342	295	86.26	41	11.99	6	1.75

* Only six out of 342 gave troublesome reactions and none was severe.

TABLE 3.—GENERAL REACTION AFTER THIRD DOSE *

Age	No.	None		Mild		Moderate	
		No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
2	2	2	100	..	..	..	..
3	9	8	88.89	1	11.11	..	..
4	9	8	88.89	1	11.11	..	..
5	16	16	100	..	..	..	..
6	11	11	100	..	..	..	..
7	19	15	78.95	4	21.05	..	..
8	22	22	100	..	..	..	..
9	22	15	68.18	5	22.73	2	9.09
10	13	12	92.31	1	7.69	..	..
11	23	22	95.65	1	4.35	..	..
12	28	28	100	..	..	..	..
13	27	26	96.30	1	3.70	..	..
14	27	26	96.30	1	3.70	..	..
15	31	29	93.55	2	6.45	..	..
16	23	21	91.30	1	4.35	1	4.35
Totals	282	261	92.56	18	6.38	3	1.06

* Only three out of 282 were troublesome and none was severe. The mildest reactions after all doses occurred in children under 7 years of age.

TABLE 4.—PERCENTAGE OF GENERAL REACTIONS IN 359 CHILDREN, 2 TO 16 YEARS OF AGE *

Dose	None	Mild	Moderate	Severe
First	73.54	24.51	1.67	0.28
Second	86.26	11.99	1.75	0.00
Third	92.56	6.38	1.06	0.00

TABLE 5.—PERCENTAGE OF GENERAL REACTIONS IN ADULTS (128,903 DOSES)

Dose	None	Mild	Moderate	Severe
First	68.2	28.9	2.4	0.3
Second	71.3	25.7	2.6	0.2
Third	78.0	20.3	1.5	0.1

* Comparison of Tables 4 and 5 shows that the general reaction is much more often absent or mild in children than in adults, even after the first dose, and that after the second and third doses the difference is more marked.

the problem may be judged from the statistics of the Federal Bureau of the Census.

In the registration area of the United States, there were in 1909, the last year for which complete mortality statistics are available, a total of 3,366 deaths from typhoid fever in patients under 20 years of age, out of a total of 10,722 of all ages, or almost one-third of all deaths from the disease. They were distributed according to ages as follows: under 2 years, 97; under 3 years, 139; under 4 years, 132; under 5 years, 110; 5 to 9 years, 647; 10 to 19 years, 2,174.

A very large proportion of these deaths can, without question, be prevented by the more frequent use of antityphoid vaccine.

EDEMA AND NEPHRITIS

FURTHER EXPERIMENTS PROVING THE INVALIDITY OF THE COLLOID-CHEMICAL THEORY

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Since the publication of my last article¹ on this subject, further work has been done proving conclusively that the colloidal theory of edema and nephritis is experimentally unfounded. Before presenting this work it may be well to clear away the misconceptions on which Fischer's argument in his reply² to my paper is so largely founded.

Since Fischer has raised the question of originality it is worthy of note that practically all of his experiments and ideas which are entitled to scientific consideration were clearly stated by Jacques Loeb, thirteen or fourteen years ago. Thus, the swelling of muscle under the influence of acids, the antagonism between acids and salts, the suggestion that the increase in the weight of a muscle in an isotonic solution is due to the formation of acid in the muscle, and, finally, the hypothesis that acid formation in the organs takes place through lack of oxygen, were long ago clearly set forth by Loeb.³ These papers were for the most part translated⁴ by M. H. Fischer himself. In 1906, Fischer began utilizing Loeb's old experiments and ideas, but

1. Moore, A. R.: Fischer's Theory of Edema and Nephritis, THE JOURNAL A. M. A., Aug. 10, 1912, p. 423.

2. Fischer, Martin H.: A Further Response to Some Criticisms of the Colloid-Chemical Theory of Water Absorption by Protoplasm, THE JOURNAL A. M. A., Oct. 19, 1912, p. 1429.

3. Loeb, Jacques: Arch. f. d. ges. Physiol. (Pflüger's), lxxi, 1; lxxi, 457; lxxv, 303.

4. Loeb, Jacques: Studies in General Physiology, Univ. Chicago Pub., 1902, II, 450, 501, 510.