On the other hand, to what do we refer the Widal test as standard? When can we say that it has failed? The blood culture test only appears in about 70 per cent. or less of apparent typhoids. If we have a patient with no symptom but fever, but whose blood gives a Widal reaction, we say he has typhoid fever, yet we have such cases that do not react to typhoid culture and are undoubtedly cases of thermic fever. Yet when we have a case with typhoid symptoms and no Widal we say that the test has failed. In the first instance we reject the negative clinical evidence and in the second we reject the negative laboratory evidence; we do not question the reliability of the Widal test in the one, but we do in the other.

As regards malarial infection, we are by no means a unit as to the diagnostic value of a few infected red corpuscles. We certainly do have latent "malaria," though, perhaps, never without symptoms, and any intercurrent disease may drive the parasites into the peripheral circulation; we attribute the fever to the parasites and cinchonize, sometimes with effect on the fever, sometimes without. The result is conflicting opinion as to the value of quinin in malarial fevers. The so-called malarial leucocyte count is not always characteristic; I have found it repeatedly in fevers giving the Widal reaction when there were no plasmodia. If we make a spread by drawing one slide lengthwise of another and count only within the leucocyte fringe we find relatively less small lymphocytes, because these are left behind with the red cells.

SUMMARY.

We might summarize our paper, then, as follows:

1. A very sudden hyperpyrexia in midsummer is more apt to be sunstroke than "congestion." Do not give quinin without cause.
2. The malarial leucocyte count is only collateral evidence of malarial infection, and the count must include all the cells in the spread.
3. The Widal test may lead us into error in a small percentage of cases; the blood culture test is more difficult and has no negative value.
4. A chill or fulminant onset of a typhoid fever is not sufficient evidence of a complicating malaria.
5. A chill or sudden disturbance of the temperature curve during convalescence in typhoid fever is not necessarily malarial.
6. In a malarial infection the persistence of an irregular subcontinuous fever after thorough cinchonization is not evidence of a typhoid complication or of remaining plasmodia.
7. A positive diagnosis of summer-fall fevers is not always possible.
8. In the hygienic management of summer-fall fevers we should presuppose a double infection, irrespective of symptoms.
9. Some of the summer-fall fevers are typhoid, some are malarial and a few of them are neither one, but the writer is opposed to the belief in an X fever.

The Great Charite Hospital at Berlin.—Besides the 147 physicians connected with this hospital there are 603 other officials or attendants. There are 1493 beds and 68 infant cribs. The number of patients treated last year was 19,121; the average stay in the hospitals 28.8 days; the expense per day and capita 3.36 marks or about \$0.84. The house staff numbers 519. The *Allg. Med. Ct. Ztg.* for April 26 gives other details of the establishment which consumed last year nearly half a million eggs, 44,478 liters milk, 30,602 herrings and 36,856 kilograms butter, etc.

A CLINICAL OBSERVATION OF NINETY CASES OF TYPHOID FEVER.

WITH FOUR DEATHS, WITH SPECIAL REFERENCE TO THERAPEUTIC FASTING.*

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While a statistical study of typhoid fever is not in strict accordance with the caption of this article, there is a valuable amount of information as to the etiology of the disease furnished by the vital statistics of the Twelfth Census Reports and, for a practical observation, a few facts may be referred to without impropriety.

The geographical distribution of typhoid fever shows a greater prevalence in the southern states, including the Carolinas, Georgia, Alabama, Mississippi and Tennessee, the death rate being 76.1 per 1,000 deaths. Next highest mortality is 69.5 for Louisiana, Missouri, Arkansas, Indian Territory and Texas. Of the latter 80.6 is rural and 38.7 is cities. The general rate for rural is 48 and cities 19, which suggests a greater source of infection in the rural districts. Nearly every source of the infection can be excluded except the drinking water, which is contaminated by the soil. My own observation of the cases herein reported warrants that belief, as 79 cases drank well water and 11 cases drank hydrant water, and the greater proportion of the population in the

TABLE 1.

	Population.	Deaths, All Causes.	Typhoid Deaths.	Tuberculosis Deaths.	Typhoid Deaths per 100 Deaths.	Tuberculosis per 100 Deaths.	Typhoid Deaths per 100,000 Pop.	Tuberculosis per 100,000 Pop.	Death Rate.
United States..	75,994,575	1,039,004	35,379	109,750	34	106	23	190	13
White.....	66,809,188	892,092	28,848	87,673	32	98	43	131	13
Colored....	9,185,387	147,002	6,531	22,077	44	150	71	251	16
Georgia.....	2,226,331	26,941	1,585	2,651	58	99	71	120	12.4
White.....	1,181,294	13,094	942	981	71	74	79	83	11
Colored....	1,035,037	13,847	643	1,671	46	126	62	161	13
Atlanta.....	89,872	2,387	98	309	40	125	108	342	26.6
White.....	54,090	1,250	53	119	42	95	97	220	25
Colored....	35,782	1,137	45	181	39	159	125	505	31
New York State	7,268,894	130,268	1,776	14,306	13	109	24	196	..
New York City	3,437,202	70,229	594	8,482	8	120	17	246	..
Massachusetts.	2,905,346	48,756	625	5,370	12	107	22	120	..

locality where this observation was made is dependent on hydrant water for drinking purposes.

It will be observed in Table 1 that the general death rate per 1,000 deaths from typhoid fever is 34. In Georgia the rate is 58, while New York has 13 and Massachusetts has a rate of 12. Atlanta, Ga., has a rate of 40, while New York City has 8.

As will be observed, the death rate in Georgia is less for the colored race, being 46, while that of the white is 71. The disease is evidently less frequent and less fatal in the colored race. This disease, excepting tuberculosis and pneumonia, claims more victims than any other disease in the south and, excluding the infant mortality of pneumonia, it is second in causing more deaths in adult life. According to death rates given by the census report in the rural districts of Georgia, there were 1,325 deaths from typhoid fever, while tuberculosis claimed 1,668.

A greater number of deaths from typhoid fever occur in the months of August, September and October and there is a more frequent occurrence after a season of heavy rainfall. It is pre-eminently a disease of early

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.

adult life, and the average age at death of all cases in the United States is 28.8 years. Typhoid fever shows a marked predilection for occupations. As will be observed in Table 2, farmers have the highest death rate, 58 per 1,000 deaths, excepting teachers, which is 98. Nurses have a rate of 56, miners 43, clergymen 37, and physicians and lawyers 23. It will be observed that physicians, although in contact with the disease, do not often become infected and nurses are not more often infected than other classes. There are more people ill with typhoid fever during the year than any other disease, especially farmers. Estimating the mortality of typhoid at 15 per cent., tuberculosis 75 per cent. and pneumonia 20 per cent., there were farmers ill from typhoid fever 37,710, from tuberculosis 14,735, and from pneumonia 55,003. The same observation is noted for other occupations.

The death rate per 100,000 population for various occupations is as follows: Farmers, 32; miners, 38; physicians, 33; clergymen, 46; lawyers, 31, and nurses, 47.

These facts may be summarized as follows:

The death rate from typhoid fever in the south is startling and claims about an equal number of deaths among the whites as tuberculosis, and well water is probably the source of infection.

There are more adults ill from typhoid fever during the year than any other disease in Georgia.

TABLE 2.

	Deaths, All Causes.	Typhoid Deaths, per 1000 Deaths.	Tuberculosis Deaths, per 1000 Deaths.	Pneumonia Deaths, per 1000 Deaths.	Typhoid Cases, 15 per cent.	Tuberculosis Cases, 75 per cent.	Pneumonia Cases, 20 per cent.	Registration Area.		
								Typhoid Deaths per 100,000.	Tuberculosis Deaths per 100,000.	Pneumonia Deaths per 100,000.
Farmers...	98,502	58	106	114	37,710	14,735	55,003	32	147	140
Miners...	5,895	43	97	127	1,709	820	30,000	38	120	77
Physicians	2,322	23	93	87	347	306	1,011	33	168	178
Clergymen	2,062	37	98	95	503	291	990	46	123	255
Lawyers	1,508	23	107	72	233	213	541	31	139	132
Teachers	1,256	98	208	95	820	381	600	182	144	144
Nurses	582	56	103	91	220	90	212	47	100	93

Farmers, next to teachers, have the highest death rate.

The average age at death is 28.8 years.

Most writers agree that typhoid fever is a water borne disease. The *New York Medical Record*, in an editorial, says: "While agreeing with a majority of investigators, we believe that water is the chief agent in the causation and dissemination of typhoid fever, and we admit that it may be air borne, being transmitted by dust, flies," etc. Dr. Leigh Canney in a recent book regards the question of etiology as a question of pure or impure drinking water. Flies among the poor furnish a means of conveyance of infection, as the writer has often observed cases imported in families in small houses, and the disease spreads to other members of the family.

In this report of cases only clinical diagnoses were made and the suggestion of Professor Osler was adopted, viz., any fever continuing beyond ten days and resisting the influence of quinin may be assumed to be typhoid.

I regret not having a Widal test of these cases to report, but, after all, the clinical diagnoses may be quite as reliable, as only 70 per cent. give a Widal reaction before the end of the first week, according to the New York health department. All the discussions and controversies prove that no routine drug treatment of typhoid fever has any specific value. Of course symptoms should be controlled by appropriate remedies.

Turpentine was the only routine drug used in the cases, and it certainly relieves the intestinal symptoms better than any remedy at our disposal. It has been used longer and more widely than any other remedy, its popularity still maintains with clinical observation and long experience.

Dr. Baird, at a meeting of the Georgia Medical Association, 1902, gave a résumé of the treatment of typhoid fever by 24 authorities and may be summarized in a few words: rest, diet, cold bath, etc. My own experience convinces me that the above summary represents the facts of the question, and it behooves us to study more closely the details of the rest, diet and bath treatment and our results would give us a greater percentage of recoveries.

As seems to the writer the dietetic treatment is the most important of all and no drug can counterbalance the baneful effect of dietetic sins. Fasting as a therapeutic measure has proved so valuable to me in the treatment of these cases that I account for the low rate of mortality by no other part of the treatment. The pathologic anatomy of typhoid fever shows a condition of gastrointestinal catarrh with hyperplasia, with great reduction of all the digestive fluids. Saliva is diminished and hydrochloric acid is usually absent, the gastric juice and, in fact, almost every condition unfavorable to digestion exists. Diarrhea is an effort of Nature to throw off what the intestines can not digest. Intestinal ulcers should be assumed to exist in every case, however mild, and the proper treatment of ulcers is

The rational treatment of such a condition is a strict diet or fasting, then peristalsis can be better controlled by cold application and an opiate may be used if much diarrhea exists.

The eliminative treatment, so called, is irrational and would be unnecessary if there was no surplus of food in the intestines to dispose of.

The active symptoms in the first stage of the disease can be better controlled by fasting for 24 to 48 hours or even longer, than by any other remedy and the effect of any other remedies applied will be greatly enhanced. The effect of the cold bath is much more marked. We have often noticed that the temperature can be reduced 2.5 degrees by a simple sponge bath. Many patients exhibit marked peculiarities as to the effects of cold applications, most cases having an agreeable effect during a high temperature, while in others having an exciting effect. The Brand system being more or less impracticable, recourse is had to the modified cold bath or even a hot bath. Each case should be studied on its own merits and the cold, warm or hot sponging applied accordingly. In fact, some observers have claimed better results from the hot bath. The patient's comfort should not be lost sight of in the bath treatment. It has been my observation that cold is better for some, while warm sponging is better for others, and still in other cases cold and hot sponging alternating has been better. In sthenic cases, with very high temperature causing delirium, ice-cold applications are preferable and in later stages, where the temperature is not excessive, delirium exists, warm sponging has a more soothing effect. In asthenic cases, with hyperpyrexia, the cold and warm alternating seem to act better. Rubbing enhances the effect of these applications and heat is thereby dissipated. It has been stated that 30 per cent. of the entire quantity of blood in circulation remains in the cutaneous system and the intimate relations between the physiologic function of the skin and temperature variations of the body both throw light on

importance of sponging in typhoid fever. An excess of food in the intestines increases peristalsis and favors the absorption of toxins. The writer has observed an

danger from inanition is slight. A recent writer¹ observes "that emaciation seemed to be independent of the amount of food taken into the stomach," and the same

TABLE 3.

Cases.	Color.	Age.	Sex.	Grade.	Gastrointestinal Symptoms.	Nervous Symptoms.	Drinking Water.	Month.	Duration.	Remarks.
1 S. E.	W.	30	M.	Severe.	Marked.	Absent.	Well.	September	21	
2 G. B. K.	"	60	F.	Mild.	Absent.	"	"	"	12	
3 L. A.	"	18	"	Severe.	Marked.	"	"	June.	21	
4 L. A.	"	17	"	"	Absent.	"	"	August.	24	
5 A. C.	"	8	"	Mild.	"	"	"	"	14	
6 J. C.	"	8	M.	Severe.	Marked.	Marked.	"	September	14	
7 L. C.	"	6	"	Mild.	Absent.	Absent.	"	"	12	
8 M. D.	"	4	F.	"	"	"	"	"	12	
9 J. G.	"	50	"	"	"	"	"	July.	20	
10 A. G.	"	20	M.	Severe.	Marked.	Marked.	"	October.	21	
11 B. G.	"	15	F.	"	Absent.	Absent.	"	"	14 28	Relapsed on eighth day from taking solid food.
12 C. G.	"	10	M.	Mild.	"	"	"	August.	12	
13 W. H.	"	8	"	"	"	"	"	"	12	
14 W. H.	"	22	"	Severe.	Marked.	Marked.	"	October.	28	Had one attack two months previous.
15 J. L.	"	23	"	Mild.	Absent.	Absent.	"	August.	18	
16 C. P.	"	30	"	"	"	"	"	July.	16	
17 J. B.	"	40	"	"	"	"	"	September	14	
18 J. B.	"	12	F.	"	"	"	"	April.	14	
19 C. B.	"	18	M.	Severe.	Marked.	Marked.	"	August.	18	
20 L. B.	"	16	"	"	"	"	"	"	16	
21 L. B.	"	12	F.	"	Absent.	Absent.	"	September	14	
22 C. D.	"	48	"	Mild.	"	"	"	"	14	
23 C. D.	"	20	M.	"	"	"	"	November.	12	
24 J. D. T.	"	17	"	Severe.	Marked.	Marked.	"	September	45	Double parotid suppurat'n osteitis of hip and humeri.
25 M. W.	"	47	F.	Mild.	Absent.	Absent.	"	July.	23	
26 J. V. E.	"	17	"	Severe.	Marked.	"	"	"	21	
27 W. E.	"	37	M.	"	"	"	"	August.	20	
28 S. G.	"	48	F.	"	"	"	"	"	20	Had small hemorrhage.
29 J. B. H.	"	18	"	"	"	"	"	September	18	
30 A. H.	"	22	M.	Mild.	Absent.	"	"	August.	14	
31 A. H.	"	24	"	Severe.	Marked.	"	"	"	12 23	Relapsed eighth day from taking solid food and getting up.
32 P. A. J.	"	25	F.	Mild.	Absent.	"	"	"	12	
33 W. M.	"	35	M.	Severe.	Marked.	Marked.	Hydrant.	November.	20	
34 M. M.	"	18	F.	"	"	"	Well.	September	28	
35 J. S. T.	"	28	M.	Mild.	Absent.	Absent.	"	July.	12	
36 J. S. T.	"	20	"	"	Marked.	"	"	June.	14	
37 T. W.	"	25	"	"	Absent.	"	Hydrant.	August.	14	
38 T. W.	"	30	"	Severe.	Marked.	Marked.	Well.	April.	21 70	Pneumonia and dysentery in convalescence.
39 S. E.	"	20	"	Mild.	Absent.	Absent.	"	July.	14	
40 A. B. H.	"	12	"	"	"	"	"	"	14	
41 A. B. H.	"	28	F.	"	"	"	Hydrant.	June.	14	
42 A. B. H.	"	32	M.	Severe.	Marked.	Marked.	Well.	August.	20	
43 A. B. H.	"	12	F.	"	"	"	"	"	28	Dysentery in convalescence.
44 C. H.	"	8	"	Mild.	Absent.	Absent.	"	"	14	
45 N. J.	B.	6	"	"	"	"	"	"	12	
46 N. J.	"	25	M.	"	"	"	"	"	14	Relapsed and died from urinary retention and neglect.
47 N. C.	W.	19	F.	Severe.	Marked.	"	"	September	12	
48 N. C.	"	13	"	Mild.	Absent.	"	"	October.	21	
49 N. C.	"	10	M.	"	"	"	"	September	12	
50 C. B.	"	45	"	"	Marked.	"	Hydrant.	"	14 21	Relapsed on eighth day from taking solid food.
51 C. B.	"	4	"	"	Absent.	"	Well.	August.	14	
52 W. C.	"	30	F.	"	"	"	"	July.	10	
53 J. G.	"	21	F.	"	"	"	Hydrant.	October.	14	
54 J. P.	"	27	M.	Severe.	Marked.	Marked.	Well.	October.	21	Five mo. pregnant and two mo. tedious convalescence. Died ninth day from hemorrhage and getting up in delirium.
55 C. C.	"	17	"	"	"	"	"	"	9	
56 C. C.	"	7	"	Mild.	Absent.	Absent.	"	"	10	
57 G. D.	"	4	M.	"	"	"	"	November.	10	
58 P. M.	"	10	"	"	"	"	"	August.	14	
59 J. W. R.	"	35	F.	Severe.	Marked.	Marked.	Hydrant.	July.	28	Protracted convalescence.
60 J. M. V.	"	32	"	"	"	Absent.	Well.	"	28	Complicated the puerperium, tedious convalescence.
61 A. D.	"	8	M.	"	"	Marked.	"	"	21	
62 E. D.	"	15	F.	Mild.	Absent.	Absent.	"	August.	14	
63 M. W.	"	13	"	"	"	"	"	"	12	
64 W. W.	"	35	"	"	"	"	"	"	21	
65 D. W. S.	"	10	M.	"	"	"	"	July.	12	
66 C. M.	"	40	F.	"	"	"	Hydrant.	"	14	
67 R. B.	"	17	M.	"	"	"	Spring.	"	21	Solid food on tenth day; relapse, with pneumonia and death in one week.
68 G. J.	"	4	"	"	"	"	Well.	"	10	
69 F. H.	"	17	F.	Severe.	Marked.	"	Spring.	"	28	
70 V. F.	"	35	M.	"	"	Marked.	Well.	August.	18	Adynamic and alcoholic and death on twelfth day
71 E. C.	B. W.	50	"	Mild.	Absent.	Absent.	"	September	12	
72 F. S. B.	"	28	"	"	"	"	"	"	12	Second attack, slight hemorrhage in convalescence from milk and lime water.
73 M. L.	"	36	"	"	"	"	"	"	22	Hematuria.
74 S. S.	"	25	"	Severe.	Marked.	Marked.	"	"	36	
75 A. L.	"	12	F.	Mild.	Absent.	Absent.	"	October.	14	
76 W. F.	"	14	"	"	"	"	"	"	18	
77 P. G.	"	20	M.	"	"	"	"	November.	23	
78 C. C.	"	18	F.	"	"	"	Hydrant.	"	20	
79 H. C.	"	6	"	"	Marked.	Marked.	"	October.	14	Operated on for appendicitis fourth day.
80 J. J.	"	3	"	"	Absent.	Absent.	Well.	August.	12	
81 H. C. M.	"	2	M.	"	"	"	"	September	12	Occurred with three other cases in same family.
82 H. C. M.	"	8	"	"	"	"	"	"	21	
83 H. C. M.	"	5	F.	"	"	"	"	"	21	
84 H. C. M.	"	28	F.	"	"	"	"	October.	10	Abortive.
85 H. C. M.	"	5	M.	Severe.	Marked.	Marked.	Hydrant.	"	14	
86 M. M.	"	6	"	Mild.	Absent.	Absent.	Well.	"	22	
87 M. M.	"	18	"	Severe.	Marked.	Marked.	"	"	14	Relapsed, supposedly from taking buttermilk.

increase of several degrees of temperature in a quiescent case by taking a dose of castor oil. It is a clinical fact that emaciation is less from typhoid fever than any other acute disease, and the

observation has often been made by myself, which would show that nutrition is not dependent on the amount of food taken into the stomach. Many cases run an

1. Lewis Med. Rec., vol lxii, No. 5.

abortive course after the amphibolic stage under a treatment of fasting and a restricted diet. After fasting 24 to 48 hours a very restricted diet should be given, consisting of broths of beef, chicken, mutton, oysters, etc., coffee, cocoa, egg albumin, peptonoids, etc., in prescribed amounts.

Gelatin is a valuable adjuvant in the dietary of a typhoid patient. It serves three purposes: adds to the relish of the various liquids, lessens the nitrogenous waste from the system and prevents hemorrhage. A teaspoonful three or four times a day is the amount usually ordered and should be dissolved in a little hot water and then added to any liquid nourishment, meat broths, cocoa, coffee, tea, etc. It adds a richness of taste to these slops, which otherwise become tiresome to the patient. The food value of gelatin is recognized and, being in a concentrated form, serves an excellent purpose. When used, emaciation is less rapid. The hemostatic effect of gelatin is universally conceded, but to wait until an intestinal hemorrhage has occurred but little immediate good can be hoped for by its use. It should be used as a routine in all cases to prevent hemorrhage. Very aggravated diarrheic cases do not tolerate it so well, as it may increase tympany. But in these cases it may be used on alternate days in small quantities. Since beginning its use no hemorrhage has occurred. The case should be closely studied, and any excess of food will be indicated by a rise of temperature. To nourish the patient by a minimum amount of food requires a very close study. Milk should be absolutely forbidden, because no one can predict when it will form a curd, which is worse than any solid food. One of my patients had a hemorrhage in convalescence from taking milk and lime water, equal parts. I examined curds the size of a hazelnut in the bloody dejecta. The case was a mild one. It is valuable, however, diluted with two to five parts of coffee, cocoa, broths, hot water, as under these circumstances the danger of curd formation is light.

This plan of dietetic treatment should be continued until active symptoms are controlled and, as improvement advances, nourishment may be more liberally given. Solid food is a danger that offers few advantages to the patient. Nearly all recrudescences are due to dietetic errors. Fasting in late stages and convalescent stages will cause fever, as inanition often causes fever.

Below is a summary of the table of reported cases: Of the cases 87 were white and 3 colored. The youngest was 2, and occurred with 4 others in the same family, and the oldest was 60. Cases under 10 were 20; between 10 and 20, 29 cases; between 20 and 30, 20 cases; over 30, 21 cases. The average age was 19.4. There were 48 males and 42 females. As to the months of occurrence, August claimed 27; September, 21; July, 16; October, 15; November, 5; June, 4, and April, 2. Those classed mild were 58 and those severe 32. Gastro-intestinal symptoms were marked in 36 and absent in 54. Nervous symptoms were marked in 18 and absent in 72. The average duration was 19 days, and the same without relapses was 17 days. Five, or 5 5/10 per cent., of the cases relapsed, and all recovered. The relapses were ascribed to taking too early of solid food. Five cases were complicated. Three, or 3.3 per cent., had hemorrhage, two of which were slight and the third immediately fatal from getting up in delirium.

One case (No. 88) was diagnosed appendicitis and on the fourth day an apparently normal appendix was removed and the case pursued a typical course of the disease to recovery.

Case 72 had hematuria and recovered.

Case 24 had double parotid suppuration and osteitis of the humeri, and after forty-five days recovered.

Case 14 had an attack two months previous.

Of the four deaths (4.4 per cent.) Case 46, a negro, can, with propriety, be ruled out, as he was dismissed and I was called to see him in a relapse, in a dying condition, having had urinary retention twenty-four hours.

Case 57 would probably have recovered, but, being without a nurse, she got up in delirium and a fatal hemorrhage resulted.

Case 70 contracted pneumonia on the tenth day of convalescence and died a week later. It was the opinion of my colleague that there was no reinfection of typhoid fever.

Case 64, a negro, alcoholic, died on the twelfth day from asthenia.

Of 87 whites treated there occurred 2 deaths, or 2.2 per cent.

The conclusions to be adduced are as follows:

1. Fasting and a restricted diet are indicated because of pathologic conditions.

2. A clinical fact maintains that emaciation occurs independently of the amount of food taken.

3. All severe cases should be subjected to fasting for 24 to 48 hours to relieve the active symptoms, which exhaust the patient more rapidly than the lack of food.

4. After a fast should be prescribed a restricted diet of broths, diluted milk, etc., in definite quantities.

5. Gelatin prevents too rapid emaciation in certain cases and renders hemorrhage less liable.

6. The cold bath or the modified cold bath is more effective during a fast.

7. Peristalsis favors the absorption of toxins and cathartics should be used only to remove undigested food.

8. The presence of intestinal ulcers should be assumed to exist in every case and the proper treatment is rest, which is better attained by fasting and a restricted diet, thus preventing hemorrhage and perforation.

9. The presence of diarrhea and vomiting indicate the adoption of the fasting treatment.

10. Fasting and a restricted diet shorten the course of the disease and many cases run an abortive course after the amphibolic period.

11. Many of the vaunted cures from specific drugs are dietetic in fact.

12. Recrudescences are nearly always due to dietetic errors.

13. In the above report, 45 consecutive cases occurred without death. Of 87 whites, 2, or 2.2 per cent., died. Of colored, 2 died, and the low mortality of 4.4 per cent. of all cases was ascribed to the above treatment.

TYPHOID FEVER IN COLORADO.

A REPORT OF FIVE HUNDRED AND TWENTY-NINE CASES.

J. N. HALL, M.D., AND C. E. COOPER, M.D.

DENVER.

We report to-day our conclusions regarding a series of cases of typhoid fever at an altitude of about 5,000 feet in order to compare the disease as we see it with typhoid fever in general.

There occurred 225 cases in the private practice of Dr. Hall in Colorado, 54 of these being seen in consultation.

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.