

Syphilis in a Rural Negro Population in Tennessee*†

JAMES A. CRABTREE, M. D., AND E. L. BISHOP, M. D., F. A. P. H. A.

*Director, Division of Preventable Diseases ; and State Commissioner of Health,
Tennessee Department of Public Health, Nashville, Tenn.*

THE fact that syphilis affords the topic of discussion for this program is evidence of the importance that it is assuming in the minds of public health workers throughout the country—suffice it to say that it is second to few diseases in its effects upon the public health.

While it is well to remember that the venereal disease problem has exercised the minds of those charged with the protection of the community's health since early ages, the varied methods of attack, and the changing points of view afford evidence of the unusually complex and difficult nature of venereal disease control.

Fundamental to the control of any communicable disease is knowledge of (1) its incidence, (2) its modes of spread, and (3) the means of its prevention. Without this basic knowledge, control measures will lack that specificity of approach which is regarded as essential to sound procedure.

As regards syphilis, the first requirement, namely, knowledge of its incidence, is for obvious reasons sadly lacking. It follows that knowledge of the means of prevention is also inadequate since this, at least from the point of view of administration, is in part dependent upon knowledge of the incidence.

It is generally believed that the incidence of syphilis among negroes is considerably higher than that among whites, but we have not had sufficiently accurate information to do more than speculate on the extent of racial difference. Indeed we have had practically no information as to the actual incidence in any unselected group of people, either white or black.

During the past year, the Tennessee Department of Public Health has been making a study of syphilis in a rural group of negro families. The study has had three major objectives:

* Read at a Joint Session of the Health Officers and Epidemiology Sections of the American Public Health Association at the Sixtieth Annual Meeting at Montreal, Canada, September, 17, 1931.

† This study has been made possible by a grant to the Tennessee Department of Health from the Julius Rosenwald Fund.

1. To determine the incidence of syphilis among an unselected group of negroes of all ages
2. To investigate the effects of syphilis upon the negro individually, and as a family unit
3. To determine to what extent negro personnel can be used in a state-wide program of syphilis control

This preliminary report is concerned primarily with the first objective, the prevalence of syphilis in the entire group. Tipton County, Tenn., was selected for study. It is essentially rural with a population of 27,715, of which negroes number 12,028. The family has been used as a unit of study rather than the individual.

Personnel of the field study unit consists of 2 physicians, 1 nurse and 1 office clerk. All are negroes except 1 physician who has acted as director.

A Wassermann survey of an unselected group was made in the beginning, and all positives were rechecked before they were classed as definitely positive.

DISTRIBUTION BY AGE AND SEX

Table I shows the age and sex distribution of positive Wassermanns among the entire group tested.

Of 2,323 individuals tested, 602, or practically 26 per cent, are positive. It is of interest to note that approximately 10 per cent of

TABLE I

AGE AND SEX DISTRIBUTION OF INDIVIDUALS WITH POSITIVE WASSERMANN'S IN A GROUP OF NEGRO FAMILIES IN TIPTON COUNTY, TENN., 1930

Age	Male			Female			Total		
	Total Exam.	Pos.	% Pos.	Total Exam.	Pos.	% Pos.	Total Exam.	Pos.	% Pos.
0-4	58	5	8.6	60	7	11.6	118	12	10.2
5-9	107	13	12.1	124	10	8.1	231	23	10.0
10-14	155	13	8.4	141	15	10.6	296	28	9.5
15-19	182	36	19.7	175	43	24.6	357	79	22.1
20-24	116	37	31.9	145	74	51.0	261	111	42.5
25-29	104	45	43.3	109	51	46.8	213	96	42.2
30-34	63	25	39.7	62	28	45.1	125	53	42.4
35-39	77	28	36.4	80	24	30.0	157	52	33.1
40-44	45	14	31.1	63	26	41.3	108	40	37.0
45-49	47	16	34.0	74	14	18.9	121	30	24.8
50-54	78	24	30.8	48	12	25.0	126	36	28.6
55-59	59	9	15.3	31	8	25.8	90	17	18.9
60 and over	71	18	25.3	49	7	14.3	120	25	20.8
Total	1,162	283	24.4	1,161	319	27.4	2,323	602	25.9

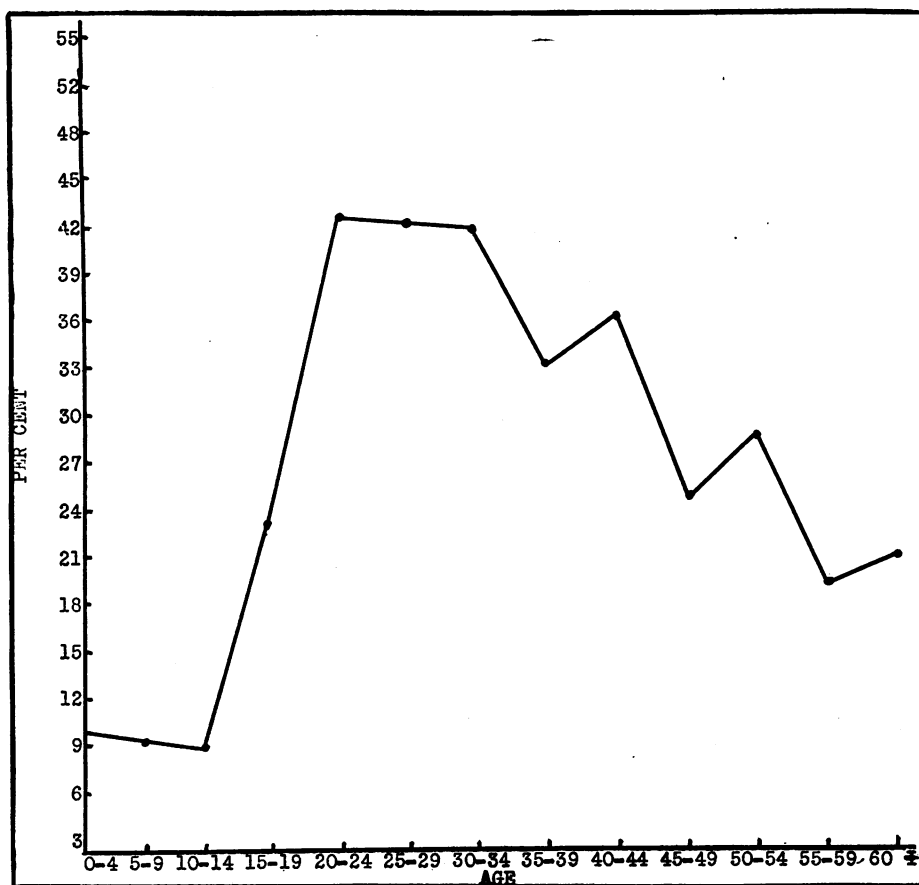


FIGURE I—Percentage distribution of positive Wassermans in each age group, in a group of negro families, in Tipton County, Tenn., 1930

children under 15 tested were positive. There is no significant difference as to sex—24.4 per cent males and 27.4 per cent females were positive.

Figure II shows the age distribution of the 602 individuals with positive Wassermans. Of these, 86.6 per cent are between the ages 15 and 50.

Of the 602 with positive Wassermans, 526 have been placed under active treatment, which allowed a more detailed study than could be made of the entire group during the preliminary survey. The 76 found positive, but not placed under treatment, were those who for various reasons failed to report to the clinics, on account of moving from the county, death, illness, inaccessibility and failure to cooperate.

Of the 526 cases under treatment and observation, 62 are classed as congenital and 464 as acquired. Thirty-seven of the congenital cases are males and 25 females.

TABLE II

AGE AND SEX DISTRIBUTION OF (1) CONGENITAL AND (2) ACQUIRED CASES OF SYPHILIS IN TIPTON COUNTY, TENN., NEGRO GROUP, 1930

Age	Male		Female		Total	
	Congenital	Acquired	Congenital	Acquired	Congenital	Acquired
0-4	3	0	6	0	9	0
5-9	14	0	9	0	23	0
10-14	14	0	3	2	17	2
15-19	2	32	5	35	7	67
20-29	2	74	2	110	4	184
30-39	2	47	0	51	2	98
40-49	0	27	0	30	0	57
50 and over	0	40	0	16	0	56
Total	37	220	25	244	62	464

Table II shows the age and sex distribution of both congenital and acquired cases which were placed under treatment following the preliminary survey. Thirty-one of the 37 male congenital cases are under 15 years of age, and 18 of the 25 female under 15. Age and sex distribution of acquired cases does not differ essentially from what one might expect.

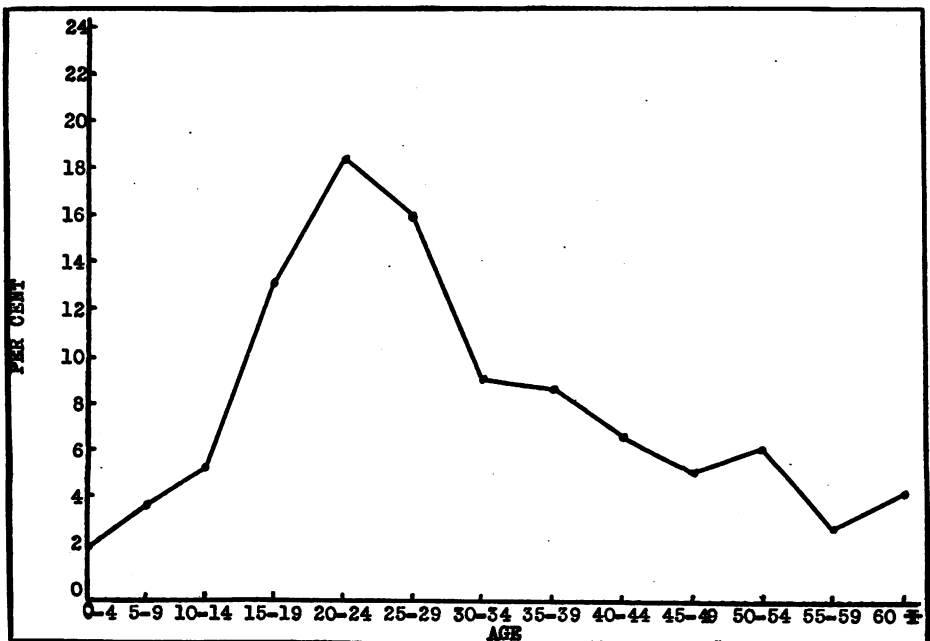


FIGURE II—Age distribution of 602 negroes with positive Wassermann, Tipton County, Tenn., 1930

RACIAL DIFFERENCES IN PREVALENCE

It has been of interest to compare the incidence of positive Wassermanns among the Tipton County negro group with that among a group of white industrial employees in another section of the state of whom a Wassermann survey was made by the State Department of Health during the early part of 1931. The white survey included 1,712 white males, of 15 to 65 years, among whom 4.3 per cent gave positive Wassermanns. This is to be contrasted with the same age group of Tipton County negroes among whom 32.6 per cent were found to be positive, an incidence of almost 8 times that in the white group.

KNOWLEDGE OF PRIMARY LESION

Each individual found to have acquired syphilis was carefully questioned as regards history of primary lesion. Table III shows the percentage of acquired cases by sex who gave a history of known primary lesion.

TABLE III
SEX DISTRIBUTION OF CASES OF ACQUIRED SYPHILIS ACCORDING TO HISTORY OF KNOWN
PRIMARY LESION IN TIPTON COUNTY, TENN., 1930

Sex	History of Primary Lesion	No History of Primary Lesion	Per cent with no History of Primary Lesion
Male	130	90	40.9
Female	65	179	73.4
Total	195	269	58.0

Note that 40.9 per cent of males deny knowledge of primary lesion, while 73.4 per cent of females give a negative history, indicating that the likelihood of infection escaping notice by the female is 1.8 times that by the male. It is obvious that too much reliance should not be placed upon the patient's statement with regard to history of primary lesion, so the actual percentage figures may be too large, but it is not unreasonable to assume that the relative percentages as regards sex differences are fairly accurate; considerably more accurate, perhaps, than would obtain among a group of white people.

It was considered of interest to inquire into the history of each case with respect to gonorrhoea. Of the 90 males with acquired syphilis, but denying knowledge of primary lesion, 35.5 per cent gave a history of having had gonorrhoea. It is possible that in many instances of syphilis in which knowledge of primary lesion is denied, the infection dates from the time of the gonorrhoea. However, no particular signifi-

cance can be placed upon this finding, since it is noted that of all the male cases of acquired syphilis, regardless of history of known primary lesion, 37.3 per cent gave a history of having had gonorrhea; and of the total cases, both sexes, 20.5 per cent gave a history of gonorrhea.

DATE INFECTION WAS ACQUIRED

Table IV shows the distribution of cases with history of known primary lesion according to time lesion was acquired. Of the 195 cases, 36 or 18.5 per cent acquired the infection within 1 year, and 52.8 per cent within 5 years.

TABLE IV

DISTRIBUTION OF CASES OF ACQUIRED SYPHILIS ACCORDING TO DATE PRIMARY LESION WAS ACQUIRED. NEGRO FAMILIES IN TIPTON COUNTY, TENN., 1930

Date Lesion Was Acquired	Number of Cases	Date Lesion Was Acquired	Number of Cases
Present Year—1930	36	6-10 Years Ago	33
1 Year Ago	18	11-20 " "	28
2-5 Years Ago	49	Over 20 " "	31
Total			195

It affords interesting speculation to apply the foregoing figures to the total colored population of the county, which is fairly representative of the average southern county. On the basis of findings (26 per cent of the total population, of whom 88 per cent are acquired, 18.5 per cent infected within 1 year) it would seem that in 12,000 there are approximately 2,746 cases of acquired syphilis; and on the assumption that the duration of infection does not differ essentially whether or not the patient had knowledge of primary lesion, approximately 508 cases occurred within 1 year, or an annual morbidity rate for acquired cases of 4,233 per 100,000 population.

TREATMENT HISTORY

The treatment history of these cases clearly indicates the magnitude of the problem of syphilis control among negroes which faces preventive medicine. Of the 526 cases under observation, only 73, or 13.9 per cent, had received any treatment. Thirteen of the 73 received nearsphenamine and mercury, with an average of 7 doses of arsenical and 6 of mercury per patient. Thirty-three received nearsphenamine only, as follows: 16 received 3 doses or less, 13 from 4 to 6, and 4 from 7 to 13 doses. Four patients received mercury only, 22 received oral or mixed treatment, and in 1 case type of treatment was not stated.

One can then appreciate the apathy with which the average negro views luetic infection, and the problems that a mass treatment project will involve. Too, the need for stimulating physicians to a better type of syphilis practice is quite apparent, when one considers the inadequacy of the treatment given when the negro applied for treatment. In less than one-fourth of instances was the patient likely to be rendered non-infectious for any considerable period of time.

STILLBIRTHS AND MISCARRIAGES

The relationship between syphilis and stillbirths is well known. Family histories have been obtained upon all families in the study group and Table V shows the number of stillbirths and miscarriages in relation to the presence or absence of syphilis among parents.

TABLE V

STILLBIRTHS AND MISCARRIAGES IN RELATION TO POSITIVE AND NEGATIVE WASSERMANN IN PARENTS, NEGRO FAMILIES, TIPTON COUNTY, TENN., 1930

Condition of Parents	Number of Pregnancies	Number of Live Births	Number of Still Births	Number of Miscarriages	Per cent Pregnancies Resulting in		
					Live Births	Stillbirths	Miscarriages
One or both Pos. Wass.	859	626	77	156	72.9	8.9	18.2
No Positive Wass. in either	243	235	1	7	96.7	0.4	2.9

In families in which one or both parents had positive Wassermanns, a total of 27.1 per cent of all pregnancies resulted in either stillbirths or miscarriages—8.9 per cent stillbirths, and 18.2 per cent miscarriages. This is to be contrasted with the group in which neither parent is known to be positive (with only 3.3 per cent of miscarriages and stillbirths).

Thus, the likelihood of either a miscarriage or stillbirth, when either parent has a positive Wassermann, is 8.2 times that when neither parent has a positive Wassermann—or the stillbirth rate among parents with positive Wassermanns is 123 per 1,000 live births, the miscarriage rate 249.2; among parents with negative Wassermanns, the stillbirth rate is 4.2 and the miscarriage rate is 29.8.

SUMMARY

1. A Wassermann survey of a group of negro families in Tipton County, Tenn., has been made.

2. Of a total of 2,323 individuals of all ages tested, 602 or 26 per cent were found to have positive Wassermanns.
3. Eighty-six and six-tenths per cent of these were between the ages of 15 and 50.
4. Of 562 cases placed under treatment and observation, 62 were classed as congenital, and 464 as acquired syphilis.
5. When persons are infected with syphilis, the likelihood that it will not be apparent to females is 1.8 times that of it not being known to males.
6. Of 195 cases giving a history of known primary lesion, 18.5 per cent stated that the lesion was acquired within the past year.
7. Data collected allow for the estimation that the annual morbidity rate for cases of acquired syphilis in Tipton County, Tenn., is approximately 4,233 per 100,000 population.
8. Treatment of cases is shown to be wholly inadequate.
9. The likelihood of a pregnancy resulting in either a stillbirth or miscarriage when either parent has a positive Wassermann is 8.2 times that of such an occurrence when neither parent has a positive Wassermann.

Sand in the Sugar

. . . This is, of course, a parable. Sending a manuscript to the type-machines to be transmuted into printed matter when that manuscript is marred with typographical inconsistencies and improprieties is very much like putting a scoopful of sand in the sugar-sack. Ill-advised persons believe that printers exercise some magic by which the blemishes in manuscript are removed. There is no such magic. The sand must be patiently hunted for grain by grain.

Presumably when the author gives "copy" to the printer it is ready to be set into type. The author may say to himself, or even vocally, "They's wunnertwo li'l things in there—but we'll catch that in the proof." The printer knows that in at least nineteen cases of every twenty, there are not merely one or two but many times that number. "But (he may reflect) that's the author's funeral. He's paying for authors' alterations, I'm not. Or if he wansta lettem lie, why should I worry? What's the diff, anyhow?"

And so author and printer enter into a conspiracy to put sand in the sugar—"sand" that, once it gets into type, can very seldom be entirely sifted out. And neither printer nor author thereafter has the privilege of saying what guest shall eat of the feast they have prepared. Any literate person can read their product. Perhaps many of them will not be sensitive to the improprieties. But the most discriminating reader will; and that's the reader that the author particularly (it may be supposed) wishes not to insult.

It is no easier to take the "sand" out of manuscript than it is to take it out of proof. But it is very much simpler to do so and in consequence the doing is more efficacious. And it is very much cheaper, for it can be done, ordinarily, with pen-strokes. The author is serving both his pride and his purse if he has it done in manuscript rather than if he waits until the cost appears in "authors' alterations." "Homily on Sand in the Sugar," Waverly Press, Inc., Baltimore, Md.