

THE PREVENTION AND TREATMENT OF VENEREAL DISEASES

by

CHARLES SOLOMON BLOOM

A THESIS SUBMITTED FOR THE DEGREE OF

DOCTOR OF MEDICINE

UNIVERSITY OF WISCONSIN

1936

435051

OCT -7 1936

AWM

B6228

AWMP
B6228
1936

The subject of this thesis, as the title indicates, is an ancient one. However, the justification for the subject lies in the fact that it represents one of the major problems facing the members of the medical profession today. It has always been a problem. It will always be a problem, unless the proper steps are taken. Dr. J. H. Stokes said the following of syphilis:

"Think of syphilis as the wages of sin, as well earned disgrace, as filth, as the badge of immorality, as a necessary defense against the loathsomeness of promiscuity, as a fearful warning against prostitution,--- and our advantage slips from us. The disease continues to spread wholesale disaster and degeneration while we wrangle over issues that were old when history began and are progressing with desperate slowness to a solution probably many centuries distant. Think of syphilis as a medical and sanitary problem and its last line of defense crumbles before our attack. It can and should be blotted out."

We replace the word "syphilis" with the phrase "venereal disease" so that the above statement will fit this article more closely. We must then agree that the venereal diseases must be looked upon and thought of as primarily "A medical and sanitary problem" and secondly that the long "conspiracy of silence must come to an end. This, then, represents the first obstacle in the path, the only path, in which the aforementioned proper steps can be taken. In this paper our suggestions for prevention

will follow along these two major lines.

The venereal diseases include the following conditions: syphilis, gonorrhoea, chancroid and their complications. The first two represent the most serious of the venereal diseases, therefore these two are our chief concern. A rough estimate of their prevalence in the United States is drawn from the fact that each of these two conditions exceed in incidence every communicable disease other than the common cold. More specifically, 500,000 new infections of syphilis occur in the United States each year, and about 12,000,000 persons are or have been at one time infected by the disease. This represents approximately 10% of the estimated population. Usilton's statistics show there are 650,000 patients under treatment for syphilis each year in the United States, and many who do not receive treatment. It has been estimated that the number under treatment represents only about 5% of the total infection.

Since 1920 there have been 35,000 more cases of syphilis than of scarlet fever, 79,000 more than all forms of tuberculosis, 500,000 (or nearly one-third) more cases of syphilis than of diphtheria, and five times as much syphilis as typhoid fever. The reported deaths from syphilis in 1930-1931 exceed the combined deaths of measles, small pox, whooping cough, scarlet fever and diphtheria. If we were to include among the number of deaths caused directly by syphilis the 18% of heart disease and the 11% of nervous and mental disease deaths, which are due to syphilis, the death rate from syphilis would exceed that of tuberculosis.

Add to the above the incidence of gonorrhoea, which exceeds that of syphilis by two or three times, and you can readily see the need and

urgency for immediate steps in the direction of prevention and treatment.

Today, however, we are handicapped by the distressing financial condition of this country. To properly go about the eradication of venereal disease, money is required. Many cities, who had begun to make the proper steps, were compelled through budget allowances to go backwards. San Antonio is a striking example - the health department was given \$25,000 per year for the control of venereal diseases. During this time venereal diseases were being ably cared for. Now there is no free clinic and no social follow-up work because funds are not available. Truly we must agree with Dr. Lehmann when he states, "If San Antonio is an example, the treponemata will easily find some medium in which to proliferate gleefully for a long time." That such conditions do exist in many cities is, indeed, deplorable, when we consider the economic waste that neglect in controlling these conditions brings about. It has been estimated that general paralysis and syphilis of the central nervous system are responsible for constant institutional care of approximately 12,300 persons annually. Of these patients, 8,700 die each year, having received an average of fourteen months hospitalization. The annual cost of hospitalization for the 12,300 is \$11,270,000. Add to this the cost of maintaining 15% of the blind (due to syphilis of the eye) and many more who are blind from gonorrhoea Ophthalmia neonatorum, the great number of persons who lose days to years of employment as a result of the acute and chronic stages of the venereal diseases, plus the many who are disabled by the complications of these diseases. Further, we must add the number of beds in charity hospitals given over to the treatment of the venereal diseases

and their complications. The economic waste soon approaches a figure equal to that of the present treasury deficit. Hundreds of millions of dollars lost and millions of dollars more will be added as a result of the depression. Today only \$15,000,000 a year is being spent in a half-hearted effort to control venereal diseases. Half-hearted because it is not distributed evenly per population and if it were there would scarcely be enough for the program necessary. Is this \$15,000,000 of any use at all? Yes, in as much as certain individual states are using it in an honest effort to control the venereal diseases. Some of these states are: New York, Illinois, Pennsylvania, Rhode Island and Massachusetts. States in which an honest effort toward control is being made. It is in these states that the greater portion of the \$15,000,000 is being used. What of the other states? A certain group of states, like Michigan, while not mentioning specifically the disease in their annual reports, show that they are cognizant of the importance of venereal disease. In educating the public by contacting the high school pupils, teachers and parent teacher associations we could accomplish a lot. Law enforcement is only used in exceptional cases, in which flagrant violations of orders against spreading the infection occur. From this second group of states, we go through various levels of activity to extreme inactivity. Montana makes no mention of the existence of these diseases in that state during the biennium ending June 1st, 1932. In Virginia there is no division of venereal diseases, but the profession receives arsenicals at a reduced price throughout the state, and if an occasional request for information upon the subject is made, that information is given. Two more states characterized by their inaction are Arizona and South Carolina. It is obvious that a

uniform method of control should be adopted by all states, each state to have modern and efficient staffs devoting their entire time to fighting the progress and ultimately removing the venereal diseases as a public health problem. To show that this can be accomplished, we have but to point to New York, Rhode Island, Massachusetts and Connecticut as examples. However, in order for such a system to work at its optimum efficiency, it must cooperate with the practicing physician and the practicing physician must cooperate with it. Too many physicians will fight measures of this sort because they feel that they are another step towards state medicine, against which they are bitterly opposed. Therefore, cooperation based on confidence must be established. It can be established only by public health measures which place the practicing physician as the important link in a machine delegated to wipe out the venereal diseases. Such measures would divide the duties in such a way that a state staff would furnish the necessary propaganda for education of the public; diagnostic laboratories would be supplied through state appropriation or by education of the physician in the performance of diagnostic tests himself; social hygiene check-up work would be done by individuals in the employment of the state, acting for the physicians to whom they are assigned and directly responsible to him; reports to the state by the social hygiene worker would be impersonal and would not divulge the identity of the individual infected, thus protecting the physician. Wherever possible treatment should lie in the hands of the practicing physician and he, in turn, should be properly educated in therapy of venereal diseases in a postgraduate school furnished by the state, and finally the state should furnish free clinics for indigents who are afflicted. Such measures as roughly suggested above would

be fertile soil in which the fight against venereal diseases could flourish with ultimate control of the disease as the fruit of labor.

Prevention of the venereal diseases calls, therefore, for a complete educational program. This educational program must include the adolescent and the older adult, as well as the young adult. It must include the teacher, the parent and the physician. Obviously the program must be varied so that each group can be reached in the manner which is most understandable to it. Before going further we must admit that we cannot hope to reach everybody - the ability to understand is an art which many lack. We cannot teach understanding, but we can by constant repetition, by pictures, by pamphlets written in many languages, increase the number of individuals who will understand. Further, the ability of the men chosen to distribute the knowledge of venereal disease must be carefully weighed. Recently a man appeared before a high school group in the state of Wisconsin to speak on venereal diseases. He spent the major part of his allotted time talking about the life of the salmon and after he had lulled the students to sleep by this part of his speech, he switched to the subject of venereal disease, and then mentioned it in terms of which 95% of the students found unfamiliar. It is obvious that little success will follow such a method. It is our opinion that the high school student should be given a regular series of lectures or preferably have group discussions, led by members of the faculty who have been instructed by lectures and articles furnished by the public health unit of the state. Most high school students either know nothing of sex or those that do know something about it, have gotten their knowledge from sources which have in

all probability warped their entire opinion of the subject. It is the rare student who has been given the proper instructions concerning sex. We feel that the correct knowledge of sex with an understanding of sex psychology, presented in terms which the average high school student will be able to understand, will not lead to the degeneration of these young people, but rather help them through the uncertainties of youth. Dr. F. S. Farney has said, "If youth is not informed as to the working of nature's second law, is not taught standards of morality and the fibres of self-control, are not carefully nurtured in the process of his character building, there may be some difficulty in convincing him later that his premarital sexual experiences should be labeled as a moral crime. No standard of morality inculcated by a sense of fear can be considered genuine - any standard of morality worthy of the name must be founded upon accurate knowledge of sex physiology and psychology, and a type of character in which the element of self-control is well developed." Tennyson puts it all in a few words, "Self-knowledge, self-reverence, self-control - these three alone lead life to sovereign powers."

It is obvious that this type of educational program requires the cooperation of the parent, as well as the school. The parents should be helped by lectures and by information furnished them by the public health officers. Once such a program has been carried out, the students will be in a receptive mood to listen to a discussion of the venereal diseases. These discussions should be given in such a manner that the average student will find it understandable. They should be neither too mild nor too extreme. Both will lead to defeat. To draw a gruesome,

revolting picture and then have the student meet someone who has had one of the venereal diseases and recovered will disillusion the student and change his whole opinion. On the other hand, too mild a treatment of the subject will leave it as something of too little consequence. These lectures must cover the questions about venereal diseases which the lay person wants to know, mainly, what are they? Can they be cured? How long does it take to cure them? These three questions are the ones usually asked of physicians in general practice, as well as of lecturers on the subject.

We are particularly stressing the necessity for teaching the young people, the adolescent, the boy and girl in the late teens and especially stressing the necessity for informing them in an understandable manner before they are infected, since the greatest incidence of venereal diseases occur in the years between 20 and 24.

We are not idealists enough, nor fools enough, to believe that this increased knowledge is going to prevent all immorality, but we do feel that there will be a decreased amount of it. Our chief aim in this educational program is the better control of the venereal diseases. We feel that this will be accomplished through the individual's realization that he is infected, that he is a menace to his fellow citizens and that neglect in the early stages of the disease will only make the cure more uncertain, and that complete neglect will bring about blindness, deafness, general paralysis, insanity, heart disease, or disease of the large blood vessels.

The next educational step must be directed to all women, parti-

cularly those who have just been married, those who are pregnant, and others still in the child-bearing period. A complete discussion of the venereal diseases, including the possibility of innocent infection, of congenital syphilis and expressing the odds against the delivery of a normal baby unless the syphilitic mother is treated early and adequately should be presented. Women should be urged to insist on a routine Wassermann examination whenever they are pregnant. Outstanding women in the community should lead in this insistence, and by so doing cause the average family physician to include a routine Wassermann, Kahn, or Kline test for every pregnant woman under his care. Remember that the venereal diseases are no respecters of social station, the common laborer's wife and the wife of the banker may both be affected similarly. It is essential that these women realize that eight to ten per cent of women in prenatal clinics have positive Wassermann reactions, that group studies of children born in the United States show that approximately five per cent have congenital syphilis.

As an indication of the value of diagnosis and adequate treatment early in pregnancy we cite the following statistics: In comparing a series of one hundred treated syphilitic pregnant women with one hundred untreated, it was found that in the untreated premature births were twice as frequent, stillbirths three times as frequent, abortions seven times as frequent, and infant deaths up to ten days after birth nine times as frequent than in the one hundred who were treated. It has also been found in comparing the results of treatment given syphilitic women who were pregnant that if the treatment is begun early the chance for a normal delivery is much better.

The ratio of normal deliveries is almost proportional to the number of the treatments given before delivery.

To make our educational plan complete, the general public must receive thorough knowledge of the venereal diseases. We have at present in most of the states only the occasional lecturer and a few pamphlets as our approach to the general public. The theatres occasionally present a lecture merely as sensational box office attraction and obviously these are valueless, their value decreasing in as much as this type of sensational advertising attracts the individuals who come to satisfy a morbid curiosity and not to learn and understand the venereal diseases. However, we know that we have three great media for the dissemination of intelligent details concerning the venereal diseases, namely the radio, the newspaper and the theatre. We have these splendid mediae, but they are kept inactive because of the policy of their executive bodies. The "conspiracy of silence" again is our great obstacle - it must be broken down - we must be permitted to advertise and print articles concerning the venereal diseases in our newspapers. We ask to be permitted to tell the layman what he should know about venereal diseases for his own protection, for the protection of his children and thus indirectly we can better control these diseases. The papers have no qualms about printing sensational stories of emasculation murders, love nests or raids on dens of iniquity, yet the words syphilis or gonorrhoea must be mentioned in whispers, if at all. The radio, especially the large chains, have refused to permit health talks on the subject of venereal diseases. A few stations have permitted the use of their facilities, two in Massachusetts, two in New York City and one in Rochester,

without any detrimental effect on the stations. It is to be hoped that radio executives will soon come to recognize the great opportunity they have to advance public health by giving this question a fair trial. The movie projector has been used by the lecturers on this important health problem and has proven valuable. If this could be extended so as to include all the movie houses in the United States, it would prove a powerful means of enlightening the public. It is obvious that we have all the means necessary for the dissemination of material concerning the venereal diseases, we need only the permission of the executives of some of these to turn over to this public health program every available method for instructing the public.

The discovery of popular education as an instrument in preventive medicine, particularly by the pioneers in the tuberculosis movement has been compared by Professor Winslow "with the discovery of the germ theory of disease" and he has added "it has proved almost as far reaching in its results". Why then not use it in the case of such diseases as syphilis and gonorrhoea? As a method of focusing the attention of the public and dramatizing the subject, it has been suggested that a special month be set aside each year, just as in the case of tuberculosis, to carry on throughout the country, active and intensive health education against the venereal diseases. This is indeed to be considered.

In any discussion of the prevention of disease, prophylaxis must be considered early. Prophylaxis has been studied and various methods were given trials. The United States Navy has been out pet guinea pig and for years have been weighing the advantages of each method tried, in

order to classify each according to its efficiency. A recent study of the marine hospital dispensaries was made by the American Social Hygiene Association, with the cooperation of the United States Public Health Service in reference to (a) the proportion of men reporting for treatment early in the stages of syphilis and gonorrhoea, (b) the use of prophylactic measures by these infected men, (c) the source and nature of their previous treatment, (d) where they were infected, (e) the proportion of infections resulting from paid and from unpaid sources of exposure. The number of cases studied was 654 - gonorrhoea 431, syphilis 170, chancroid 53. Out of this group 202 used prophylaxis of various sorts, as given below.

Diagnosis *	Potassium perman- ganate	Argyrol	Speci- fied pa- tented packet	Soap Water	Various kinds	Total
Acute gonorrhoea	17	2	36	16	9	80
Chronic gonorrhoea	3	2	10	2	6	23
Unspecified gonorrhoea	3	4	17	0	3	27
Syphilis	13	2	16	6	14	51
Chancroid	3	0	12	4	2	21
Total	39	10	91	28	34	202

* Diagnosis at time of visit to dispensary.

Under "Various kinds" there are Packet, Navy prophylaxis, neo-silvol, whiskey, calomel ointments, S.O.S., protargol, doughboy (condum), powder, copaiba, calomel powder, perioxide, G.O. 45, injection, listerine, alcohol and lye.

In as much as the above chart deals with the failures of prophylaxis, and as we do not know the number who, though exposed, escaped infection by the use of prophylaxis, the relative effectiveness of prophylaxis cannot be determined. We can, however, conclude that all the measures used failed at sometime, and that the specified patented packet was responsible for the greatest number of failures. In nine of these cases is there evidence of knowledge of the fact that substances which are effective prophylactic agents against syphilis may fail to protect against gonorrhoea and vice versa.

The following table summarizes the statements of seamen as to where infection was acquired and whether from paid or unpaid exposure.

	Where infected			Type of exposure		
	U.S. Port	Foreign Port	Unknown	Paid	Unpaid	Unknown
Gonorrhoea	332	91	6	294	122	15
Syphilis	110	54	14	103	58	8
Chancroid	33	20	0	39	11	2
Total	465	165	20	436	191	25

In any evaluation of the effectiveness of prophylaxis consideration of the 242,000 prophylactic treatments given to the American Expeditionary forces during the World War should be included. These treatments were followed by only 1.3% infections, indicating what can be done where early disinfection is carried out by trained personnel, using approved methods and materials. The British Army distributed prophylactic packets for self-disinfection with some success, yet neither of the above

two systems has achieved any large measure of success in a civilian population.

An English Committee of Enquiry on Venereal Diseases set up in 1923 reported the following:

1. That skillfully applied disinfection after intercourse would often prevent infection,
2. The success of any general public facilities for self-disinfection is likely to be small,
3. That they could find no reason why people should not be allowed to purchase disinfectants for their own use and, therefore,
4. That the English law should be altered "so as to permit properly qualified chemists to sell disinfectants, provided that such disinfectants are sold in a form and with instructions for use approved by some competent authority."

During the past dozen years no competent authority has been found willing to sponsor a set of instructions. It is generally known that an ointment containing 33 per cent calomel will prevent syphilitic infection, providing it is thoroughly applied to the exposed surfaces within a few hours of exposure. It is also generally accepted that the gonococcus has a comparatively low resistance to antiseptics. It seems then that with proper instruction, and with accessible prophylactic agents, a long

step forward in the path of prevention could be made.

There has been a division of opinion concerning the advisability of the widespread use of prophylaxis, with opposition coming from those who believe that such a measure would lead to increased promiscuity. It is obvious that some agreement must be reached before benefit could be derived from such a plan. Further, we want to make clear that even with adequate instruction there will always be some whose lack of intelligence will not enable them to follow instructions, and still others too drunk to understand them.

Prophylaxis has a definite place in the prevention of venereal diseases. It alone, however, is not efficient enough nor do we think it will ever be efficient enough to be the chief means of controlling the venereal diseases.

To successfully prevent the venereal diseases it is essential that environmental and other conditions favorable to transmission of the spirochaete and gonococcus be eliminated. We realize the magnitude of such an undertaking, and the little possibility of its success for many years to come. The problem would include the eradication of slums, the raising of morality through church and school cooperation, the teaching of emotional control, and the elimination of countless other contributing factors making for the dissemination of the disease. Of all the factors responsible for the spread of the venereal diseases one stands out like a sore thumb, namely prostitution. It requires little imagination to see where and how this is possible. To the average layman control of prostitution,

that is, registration of prostitutes plus periodical examination with hospitalization for those who are diseased, seems to be the answer to the question of "How can these diseases be prevented?" This apparent common sense method, however, has been tried in many of the European countries and then been abandoned. The reasons are many and are well given in Flexner's work, "Prostitution in Europe". "In the first place the stricter the regulation, the greater the amount of clandestine prostitution, so that for one registered prostitute undergoing periodical examinations there may be ten or more unregistered practicing their profession secretly under the guise of chambermaids, waitresses, singing girls, and so forth. The danger under a regulation system is that when these women become diseased as they must do sooner or later they conceal their disease for fear of their coming under the notice of the police and becoming inscribed.

Assuming, however, that clandestine prostitution could be abolished one may reasonably ask if periodical medical examination and segregation of women found to be diseased would provide an adequate safeguard. In my opinion, and that of numerous authorities on this subject, it is unlikely to do so because of the difficulty of deciding the question of non-infectivity. Even if one spent half an hour or longer over the examination of each woman and took all the necessary specimens for laboratory examination, one could not guarantee that the woman was free from infection or would not become infected within a day or two following the examination."

Regulation has proven successful at times. The report by P. Mulzer of Hamburg (1933) eulogizing the strict regulation methods practiced in Italy and Greece, and contrasting them with the methods at present

practiced in Turkey, where brothels are being reduced and private prostitution is said to have increased in the incidence of venereal disease. In Italy according to Mulzer's account, the private interests of registered prostitutes are protected, they are examined on scientific lines and brothels are provided with prophylactic appliances, while clandestine prostitution is hunted remorselessly.

The regulation measures in Casablanca has been reported on by E. Lepuray in a favorable manner. Here a prostitutes quarter, five acres in extent, was built by the municipality and provided with theaters, dance halls, cafes, etc. It was walled in and provided with only one gate. Prostitutes entering this quarter are put under strict control, with complete medical examinations, prompt and efficient treatment on detection of disease and, in addition, daily douching plus the application of medicated tampons in the case of practicing women. On first arrival fifty three per cent of the women were found diseased, eight per cent with contagious syphilis and forty five per cent with gonorrhoea or chancroid. In contrast with these figures only fifteen and two tenths per cent of the resident prostitutes are diseased, this being made up of two tenths per cent syphilis and fifteen per cent gonorrhoea or chancroid. Other successful attempts at regulation have resulted from the abandonment of attempts to isolate infected women and instead assuming that all prostitutes are infected and then concentrating on measures designed to prevent the spread of contagion.

Naturally, opposition to a regulation method must arise especially in countries with an Anglo-Saxon tradition. Opposition by those who

reflect - -

"How oft the sight of means to do ill deeds
Makes ill deeds done."

On the other hand attempts to completely prohibit prostitution have been met with failure, and while there is no means for checking the incidence of venereal diseases following prohibitory methods, it is known that these methods have never wiped out prostitution, it has persisted and seemingly thrived. The forbidden fruit became more desirable.

All types of regulation have been discarded in the past years. Certainly in communities where there is greater freedom of the population and there is an insufficient medical staff, it is not likely to prove of any value. However, with perfect control, a sufficient medical staff and liberal provision of prophylactic disinfectants on the premises, regulation may work.

The above is a field of prevention, which while it is potentially an important weapon for control of the venereal diseases must first overcome its various handicaps already stated, before it can be of any real use.

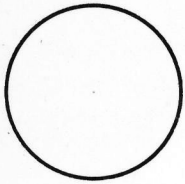
Whenever a case of small pox or typhoid fever is found, there is an immediate effort to find out where the infection started, what contacts were made during the incubation period and later. The doctor sees the case first. The public health officials are then informed and they, in turn, send out a nurse who advises the patient as to what is to be done to prevent the spread of infection, hygiene is taught and quarantine is enforced. Then the public health department asks for information as

to possible sources of infection, and whether or not others have been exposed through contact with the infected person. When it comes to syphilis and gonorrhoea we hush it and pass it by. We begin to qualify with "ifs" and "ands" and "buts" - we wonder if it is not too delicate a thing really and purposefully to investigate. The result of this line of reasoning leaves an active source of infection which can continue to infect others, who in turn infect still others. We can readily see that should this process of infection be permitted to go on, it would not be long before most of the people in the world would be infected with one or the other of the venereal diseases. Treatment alone can scarcely combat the diseases, especially since the estimated number under treatment is only five per cent of the total number infected. The conspiracy of silence must come to an end. We must adopt epidemiologic methods if we intend to hold the spirochaete and the gonococcus in check. This is our real hope for the prevention of the diseases. It is essential that epidemiology and therapy work hand in hand. How is epidemiology going to work? First, leads must be found upon which investigators can work. The investigator must learn that every human activity is of interest to him when he is on the hunt, and from these activities be able to differentiate the spurious from the real information. According to Dr. Munson "the greatest source of information is the public health nurse. She is one person who knows most of the troubles and difficulties of the families under her care, and she is the one who does most toward the solution of these problems. Physicians, if you are on friendly terms with them, will give leads that are of the greatest value. Looking up the card reports of clinics is profitable; they are worth careful scrutiny. Laboratory

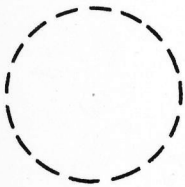
reports, too, should always be consulted."

The following series of tracings are taken from Dr. Munson's article in the American Journal of Public Health, August, 1933, and are selected from nineteen investigations recently made.

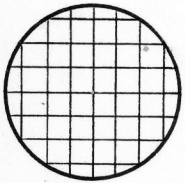
KEY TO READING OF TRACINGS



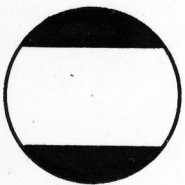
CONTACT NOT INFECTED



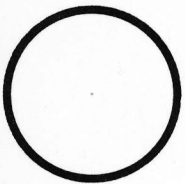
CONTACT INFECTION NOT DETERMINED



CASE NOT UNDER TREATMENT AT ALL



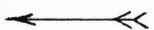
CASE BROUGHT UNDER TREATMENT
BY INVESTIGATION



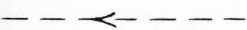
CASE UNDER TREATMENT WHEN
INVESTIGATED



ROUTE OF INFECTION

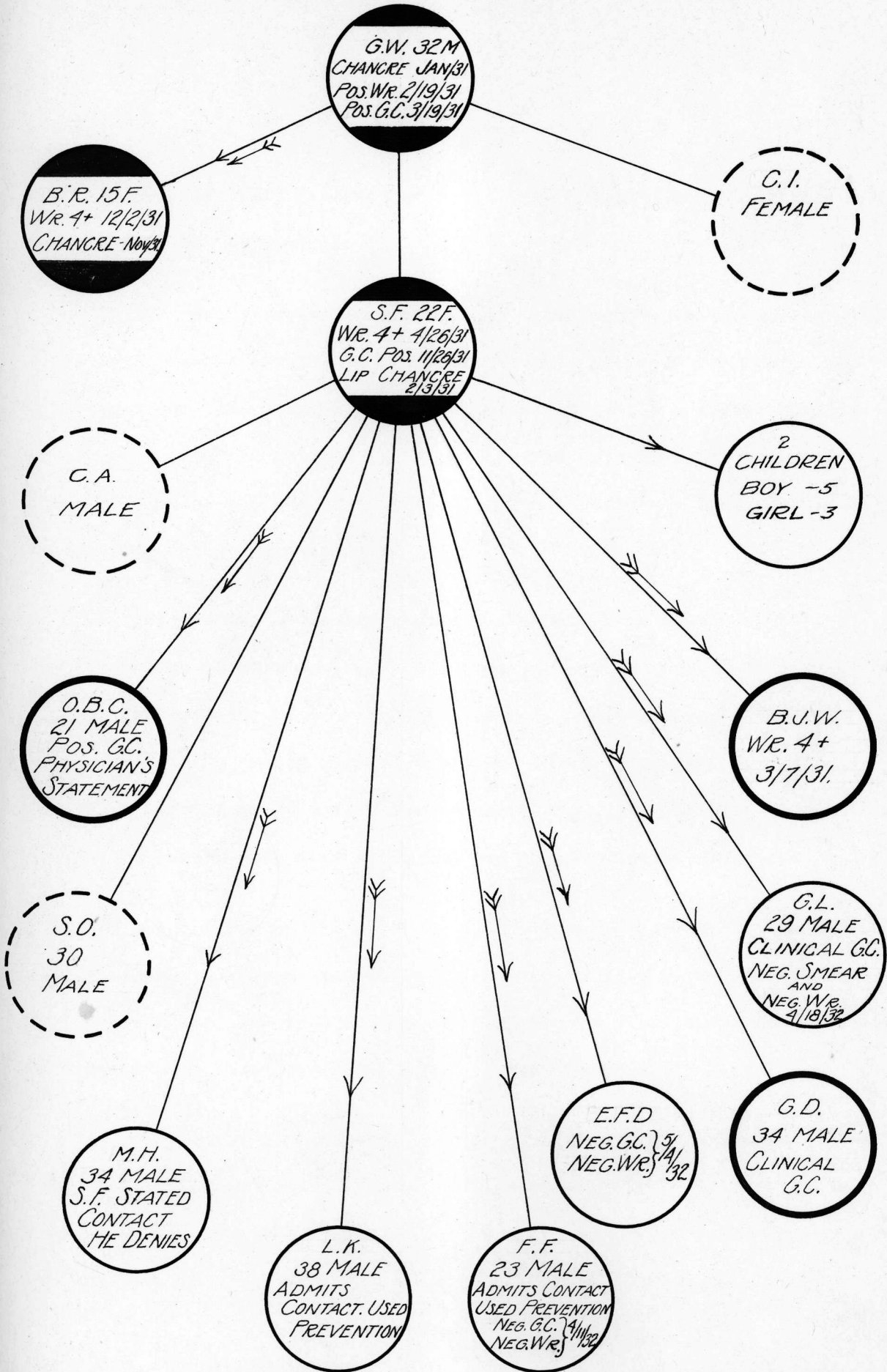


ROUTE OF INVESTIGATION



POSSIBLE ROUTE OF INFECTION

TRACING I



TRACING I

This outbreak occurred in a village, population about 6,000 and a city of 20,000 population.

The investigation of these cases resulted from a discussion with the local nurse concerning the prevalence of syphilis in her community. She stated that she knew S.F. as a person who might be a source of infection. She made the initial investigation and interviews with this person. The data acquired were turned over to a nurse and trained worker who continued the investigation.

Information indicated that G.W., a male in a nearby city, was the first case in this series. His chancre occurred sometime in January 1931. The infection was transmitted to S.F., a female, and she had a lip chancre in the early part of February, 1931. She was given some treatment at that time, but it was not continued. The investigation brought her under treatment again and she has adhered to it since.

The tracing indicates the contacts S.F. made, some of whom developed gonorrhoea. These cases were taken care of by a physician who admitted the diagnosis, but would give no further data. This woman had a positive gonococcus smear April 26, 1931.

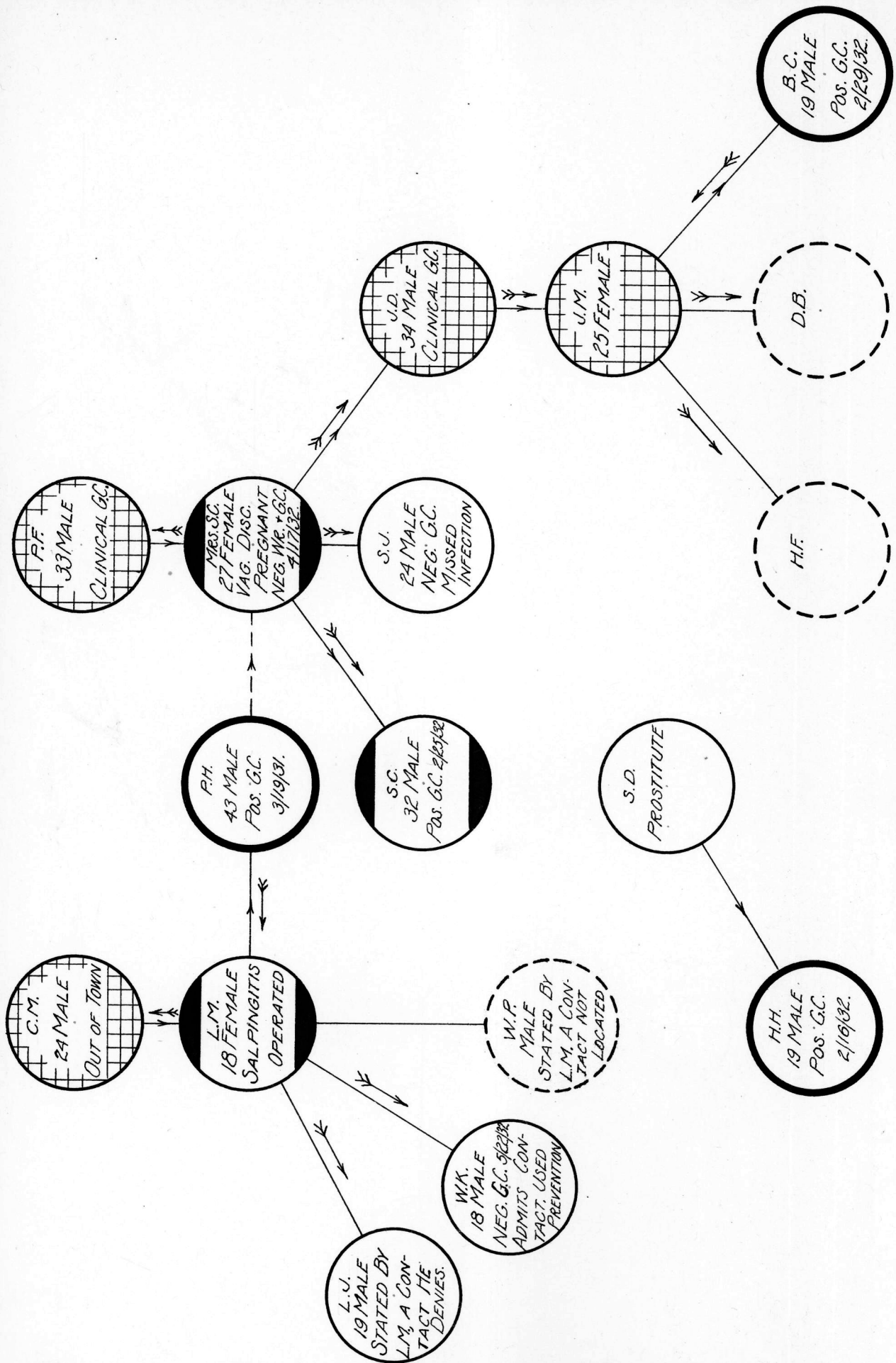
Of particular interest is the fact that E.F.D., a contact, was found to have moved to Newark, New Jersey. This was taken up with the health commissioner, Dr. Craster, of that City and he reported that the man had been located, examined and found negative. This was fortunate

for him, for he admitted having been exposed to the disease. Thank you for advising us of this possible menace."

G.W. was also the source of infection for B.R., fifteen years of age, female, residing in the city, who had a chancre November, 1931, and positive Wassermann December 2, 1931. When the nurse discovered this girl she had a temperature of 103⁰F., which followed the birth of a live child which her mother had burned up in the furnace. No physician had been in attendance and apparently a premature birth had been produced. The nurse felt it her duty to obtain a physician to care for this unfortunate girl. In attempting to do this a very interesting side-light on syphilis was obtained. The nurse called upon a doctor and asked him to take the case. He refused, saying that he did not care for that kind of a case. He, however, plied the nurse with questions and continued the conversation with her saying, "You are going at this syphilis business in the wrong way, you should try to prevent it." Not long before, he had had a letter from the dean of the college attended by his son stating that the boy had syphilis and was under treatment. The girl with whom the boy kept company had been sick for two months, but syphilis in this family was a thing not to be thought of, and no Wassermann had been taken. The doctor told the nurse that he did not know what to do, but finally he went to the girl's physician and stated the facts. A Wassermann was then taken which was +++. Treatment was started and the girl promptly began to get well. Syphilis is no respecter of persons. Every once in a while, every doctor should read Osler's dictum, "Know syphilis in all its manifestations and all things else clinical will be added unto you."

This was the only instance in this series in which the police power was used. G.W. was taken in by the police, told that unless he continued his treatment he would be put under arrest, and the facts of his relations with B.R. were given to the district attorney of the county.

While most of these contacts occurred in the village of 6,000 population, the first three cases (B.R., G.W. and C.I.) were in an adjoining community of about 20,000 population.



TRACING II

This is a gonorrhoeal outbreak in a rural population of about one hundred. The situation in this community was brought to light when I was discussing with persons in another county the situation as regards the control of syphilis and gonorrhoea. We were then investigating an outbreak of syphilis in that community. The remark which caused this investigation was, "We are no worse in this county than they are in ----- county. There is one community there where everyone has it." Inquiry determined the location of this community and investigation with the health officer brought to our knowledge the situation here detailed. Later a trained worker from the department, Julia Mac Phillips, completed the investigation. She is the worker employed on most of these investigations. It is upon her data that the tracing is based.

L.M. came to the home of P.H., a well to do farmer, as his housekeeper. Within a short time this man was required to go to the hospital due to a severe urethritis, which was found to be gonorrhoeal. Interviews with the eighteen year old housekeeper brought out the story that she had received her infection from C.M. before she had come to her present location, while living in another community some 22 miles distant. She gave the names of the contacts to the nurse, who was able to see that she got to her physician who continued treatment.

Mrs. S.C., whose husband S.C. developed gonorrhoea with a positive smear, was thought by the investigator to have received her infection from P.F. The infection may have come from P.H. because of happenings which occurred in the fall of 1931. It appears that Mrs. S.C. had carried on

some negotiations with P.H. which had been discovered by her husband. He became very much incensed, but later when the depression became more acute, suggested to his wife that she reestablish relations with P.H. and "shake him down for some coin". I am inclined to think this was the cause of the infection.

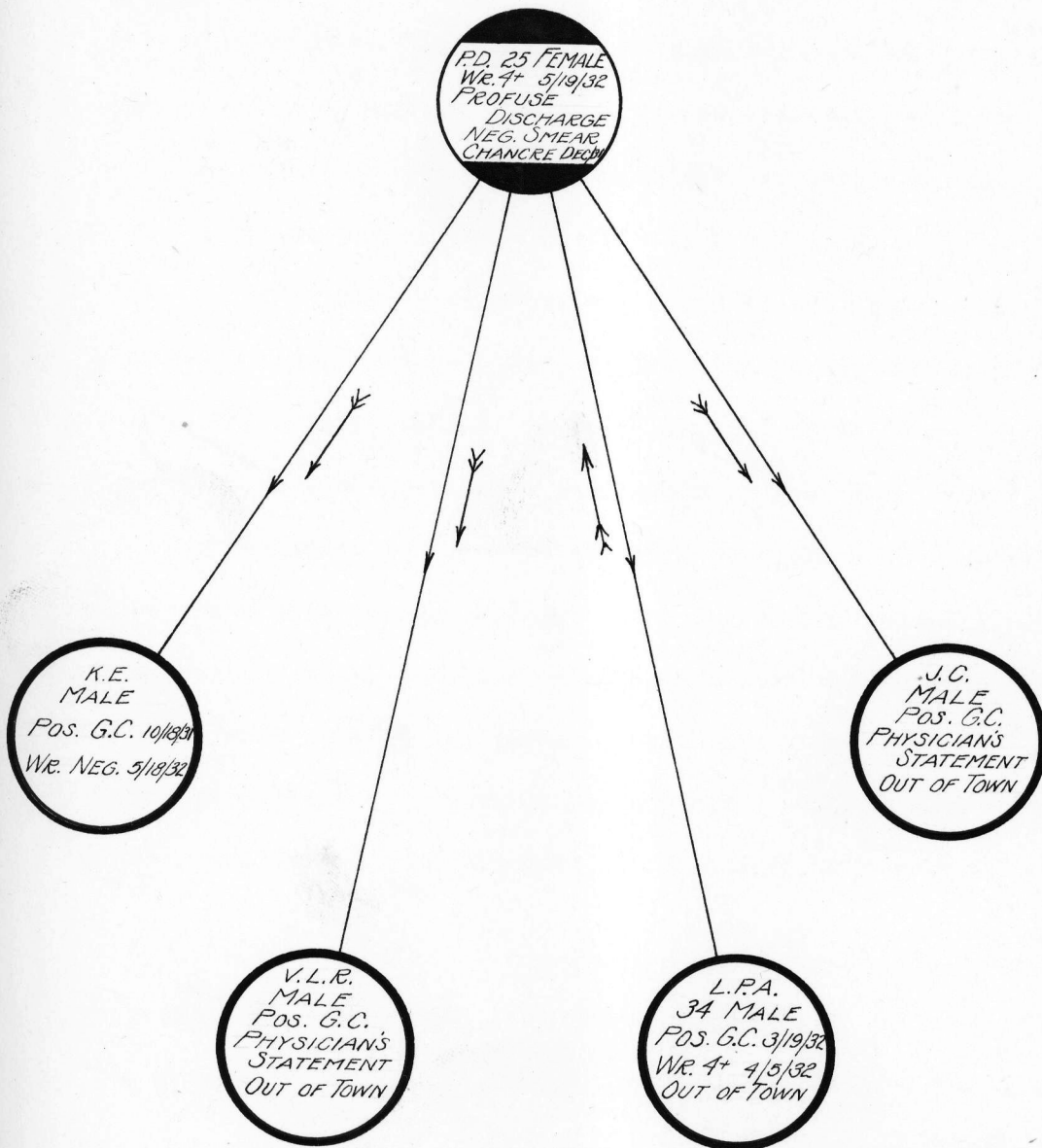
J.D. received his infection from Mrs. S.C. and apparently transmitted it to his wife, J.M. Neither of these persons was under treatment except what they gave themselves. Mrs. J.M., in turn, transmitted the infection to B.D., who had a positive smear.

At the same time another case, H.H., age 19, appeared, which to all indications had nothing to do with the epidemic. His story shows that he had gone to a nearby city and three days after his visit had gonorrhoea with a positive smear. From the evidence, there can be no question that this case was an infection got in the city from a prostitute.

In the case of the housekeeper for P.H. there seemed to be some difficulty on the part of his sister to understand that the investigation was solely for the purpose of controlling gonorrhoea. Apparently she thought that there was an attempt being made to get her brother into trouble because of the hired girl being a minor. At any rate, P.H. was married to L.M., apparently at the insistence of his sister.

In this tracing there is evidence that gonorrhoea was introduced into this community on two occasions - by L.M. and by H.H. I believe that the investigation was potent in stopping further spread. The mere fact that the inquiry was being conducted acted as a deterrent.

TRACING III



EPIDEMIOLOGY OF SYPHILIS - CITY POPULATION, 20,000.

TRACING III

This series of cases was found by the nurse, a trained worker, after Dr. B. had told her that one of his patients, had acquired disease out of town. The doctor did not want to give the name of the patient. The only information was that the girl who was the source of the infection worked in a restaurant in a nearby city; that the girl's sickname was Peggy, and that she had a sister who probably worked in a factory in the same city. With this information the nurse located P.D., age 25, and found that she had gone to a clinic in the city in September, 1931, had requested a Wassermann, and had returned several times to get a copy of the report, which was negative. Her desire to have this report was stated to be that some man had accused her of giving him a disease and she wanted to prove that she was alright. The nurse then called at the girl's home and on the family, which is considered a very respectable one. Arrangements were made by the nurse to have a personal interview with this girl. She gave the names of three other persons, all of whom were checked up and found to be under the care of the clinic or a private physician.

While this girl was never found to have a positive smear, she had infected L.P.A. with both gonorrhoea and syphilis. This was the only possible source of infection he had had. When he presented himself first the doctor considered that he had just a gonorrhoeal infection which seemed to persist, and at a later date the patient showed a secondary syphilitic rash and it was not until this time that a Wassermann was taken. This points out the necessity of taking a Wassermann on all patients with a venereal history. The doctor thinks that probably his patient has an

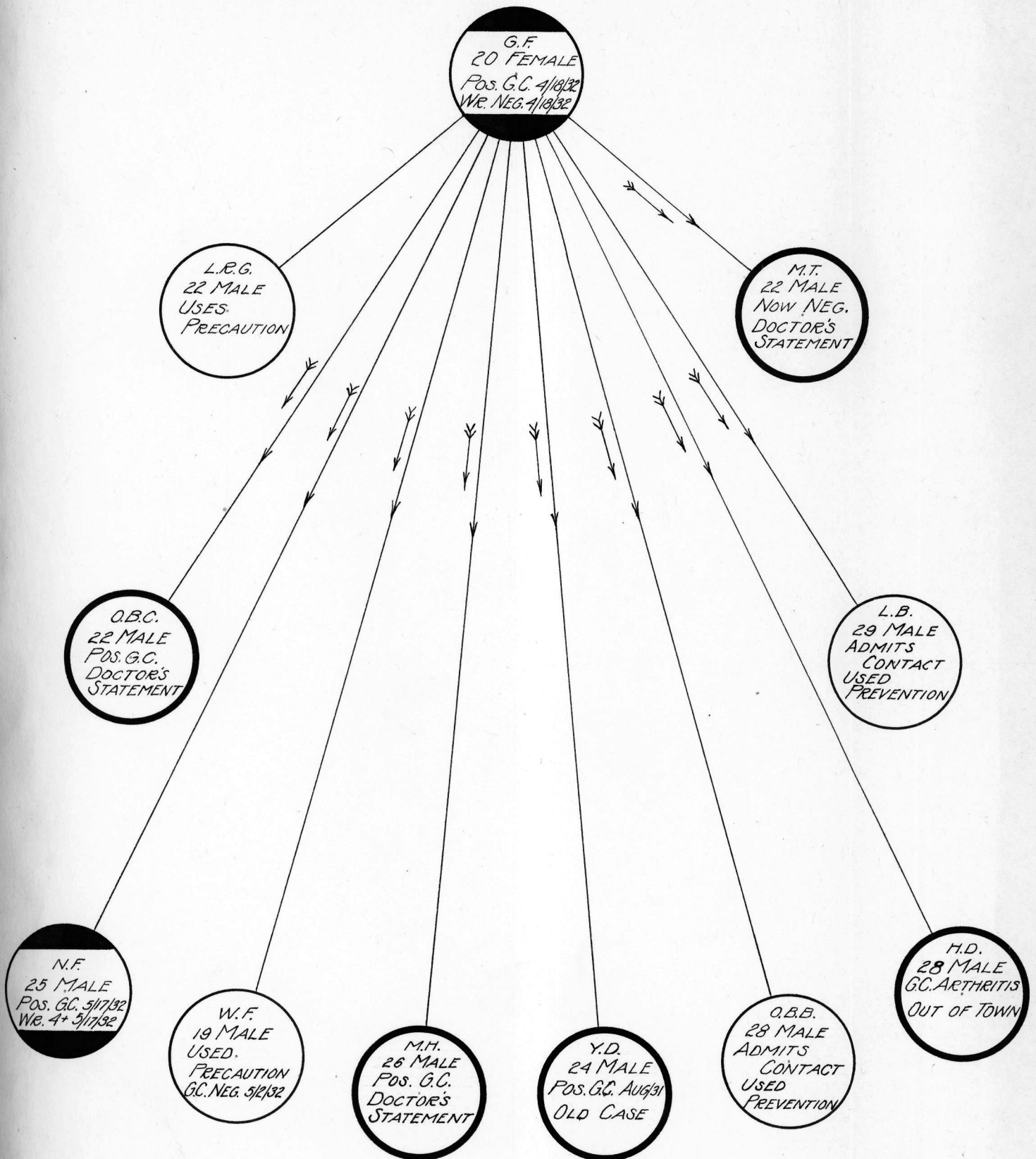
intra-urethral chancre, which he missed at the time of his first examination.

There is a history that the girl, P.D., at Christmas, 1931, had a sore in the vagina which lasted for some time and which was probably a primary chancre, although at that time she attributed it to the use of a douche which was too hot. She has been put under treatment, which she is faithfully following in the clinic in the city.

The important lessons of this investigation are:

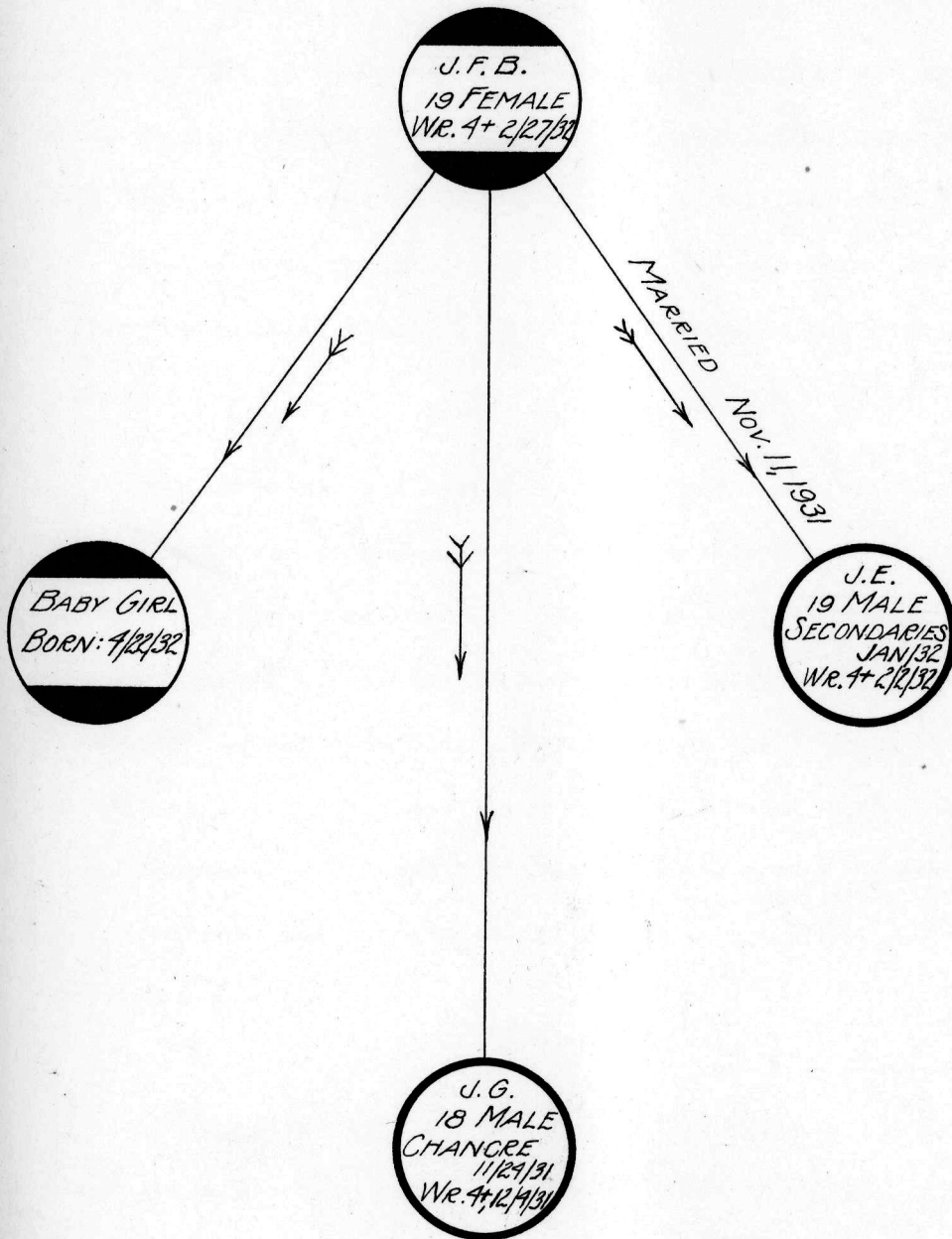
1. Always take a Wassermann
2. That physicians will refer their private cases for investigation if they have confidence in the worker.

TRACING IV



EPIDEMIOLOGY OF GONORRHEA - VILLAGE, 6,000.

TRACING V



TRACING IV

This series of cases occurred in a village of approximately 6000 population. The girl who was the source of infection was discovered because in making another investigation the nurse heard her name mentioned several times, and local inquiry brought out the fact that she was promiscuous. She had come in June, 1931, from a village some thirty miles distant from her present abode. She stated that she has been infected for two years.

The nurse pointed out to her the danger she was in the community, and stated that her only object in coming to see her was to be of service and to get her under treatment. She gave complete confidence to the nurse and informed her of the contacts which are noted. Arrangements were made by the nurse to have her treated by the private physician of her choice and at her own expense since she was earning a good salary. She has conscientiously followed her treatment and so far as we have been able to ascertain has infected no one since.

TRACING V

This tracing represents family syphilis in a group of people living three miles off the State Road in a rural section. The source of infection of these cases came from out of the state in March, 1931, to live with her mother who was the housekeeper in the family. This girl had contact with J.G. who developed a chancre November 24, 1931, and a Wassermann taken December 9, 1931 was positive. On November 11, 1931, she married a cousin of J.G., who developed secondaries in January, 1932,

and had a positive Wassermann February 2, 1932. Primary chancre was not noted in this case. The girl is full blooded white, while the two men are each quarter-colored.

These men both reported to a doctor in a nearby village when their trouble began and have been under treatment by him. This doctor worked out the epidemiology involved and suggested that the girl come in for treatment, but this she failed to do. The next known of the situation was when the county nurse obtained information which led her to make a prenatal visit on this girl. She made inquiries which aroused her suspicions and consulted with me. I then checked up with the doctor and found out the story detailed here. The prospective mother was promptly put under treatment, but not sufficiently early to prevent syphilis in her baby, born April 2, 1932. This baby had snuffles, was puny, marasmic, had cranio-tabes and also a peculiar rash which looked like sudamina. It was promptly put under treatment. The skin cleared up, the snuffles ceased and the marasmic condition improved until the child became the picture of health.

This series of cases points out one of the difficulties which private physicians feel - that they do not think they can go ahead and make investigations looking to get contacts under treatment lest they be accused of having a commercial interest. It seems to me also to prove the necessity for the investigation of cases of syphilis. The probabilities are that if this nurse had not found the girl as a prenatal case she would have continued without treatment; the baby would have had no treatment, and would have died. Further, it shows again that syphilis is car-

ried from one community to another, and in this instance from one state to another."

The above tracings and explanations are proof of what can really be accomplished in the field of epidemiology. We do not believe that in each case of investigation we will be able to find the original source of infection, but in the nineteen investigations conducted by Dr. Munson only four investigations failed to disclose the original source of infection. However, even though the original source of infection was not disclosed, contacts were determined and helped.

The problem at present resolves itself chiefly in the proper method of approach. How are we going to conduct the epidemiology of individual cases? There are two possibilities. First, a uniform method of reporting all cases of venereal diseases to a state organization, which in turn will conduct these investigations. While this could work, we are nevertheless faced with an obstacle. Public policy, the natural shrinking of the patient with a venereal disease from the public eye, and the physicians proper hesitation to expose his patient to official interview, constitute a real barrier to the identification of the majority of these patients to the health officer. Without a report of all cases this method must fail. The other means at our disposal lies in the utilization of the only individual who knows the patient. That individual is the patient's own physician. Now we realize that the physician can scarcely be expected to spend hours investigating each case of venereal disease he encounters. He hasn't the time and it isn't his work in the first place. Somewhere, then, a service must be provided which will serve the

double purpose of helping the private physician keep his patient under treatment and to reach back to the contacts and sources of infection without requiring the official identification of the patient. It is here that the administrators must seek the assistance of social service as a method.

The method proposed by Dr. Nelson would do away with the unimportant privilege of identifying the patient. This could be done by offering the physicians the services of communicable disease nurse or social worker. She should represent the physician rather than the official agency, and work out of his office. The same result is attained as if she walked out of the health office in the first place with the name and address of the patient in her hand.

However, we must first realize that the physician is not accustomed to using trained investigators in his private practice and such being the case merely offering this service to physicians is to invite failure. In Massachusetts a few physicians who are approachable because of their clinic associations and their interest in the control of venereal disease, have been asked to give the service a trial. The social worker called on twenty three doctors and succeeded in interesting six. For these six she has followed seventy one cases. Forty seven of these cases had lapsed treatment for gonorrhoea and five had lapsed treatment for syphilis. There were nine alleged sources of infection of gonorrhoea and one alleged source of infection of syphilis. Four males were followed to complete diagnosis, two of gonorrhoea and two of syphilis. Four family contacts were followed, two for gonorrhoea and two for syphilis. One female was followed for operation for pus tubes.

As a result of the Social Service worker's investigation, one physician had restored to him thirteen of the sixteen male patients who had lapsed treatment for gonorrhoea. Two more of these sixteen resumed treatment under another physician. All of the fifteen female patients were returned to treatment, eleven to the referring physician. Four of his five syphilitic patients were returned to treatment, two of them to him. One could not be located. Seven of the eight alleged sources of infection of gonorrhoea were examined. All are under medical care. The single source of syphilis was examined by the referring physician and is still under medical care. Her husband and brother in the course of investigation were found to have lapsed treatment, one for syphilis and the other for gonorrhoea. Both were returned to medical care. The four family contacts were examined and found free of disease.

The other referring physicians received similar results from their cooperation with the social worker, yet in spite of the good results obtained only one doctor made a point of calling in the social worker on new cases. The others are content to wait until she calls on them for more work. Further, her full value has not been appreciated. She has not been permitted to interview patients for the identification of the source of infection or to arrange for the examination of family contacts, with the exception of two cases in which this privilege had been granted.

Patients who were questioned concerning their attitude toward the investigation, with one exception, were not finding them objectionable, and in fact some of them made statements indicating that they appreciated this unusual interest.

The social worker in all these cases approached the patient as a representative of the referring physician. Except for statistical summaries the department has no information concerning the work she has done. By this is meant that the department would not be able to identify a single one of the individuals followed. Further, the social worker took no action in any case except as she was directed by the physician. For example, if a patient was no longer able to pay, the physician decided whether or not he should be referred to a public clinic. In other words, the social worker was completely the agent of the physician, even though in following his direction she may have left things undone or which might even have been required by the Department's regulation. This is very important, for unless the physician may have complete confidence that he is directing the affairs of his own practice and is not losing patients unnecessarily to public clinics or being steered into social situations that make for trouble, he would soon dispense with the service.

Thus we have a workable system which needs to be sold to the practicing physician, sold to him first of all as an idea worth trying and then selling him on the end results. Naturally a system such as this brings up questions as to plans of execution. Each question must be met and a decision made.

Regardless of what system we adopt we realize that whatever success we may have in the control of the venereal diseases will be powerfully augmented by a working system of epidemiology.

With the four weapons mentioned above, namely a thorough well directed, educational policy, accessible prophylactic measures with proper directions for their use, control of prostitution, and lastly epidemiologic investigation of all cases discovered, we believe that the control of the venereal diseases would become a reality. It would be another monumental piece of medicine. It would mean a saving of millions of dollars to the tax payers. It would mean a decrease in the mortality rate. Will the necessity for action make itself felt? It is obviously essential that action be forth coming in the near future - the condition is too serious to endure continued neglect. It must be faced. It is a medical and sanitary problem and should be dealt with as such.

Prevention of any disease is certainly handicapped unless all existing cases can undergo treatment. In the case of the venereal diseases, this is especially true. Realize again that only about five per cent of all the venereal diseases are under treatment, that of the ninety five per cent remaining approximately fifty per cent are not aware of their infection, that of the other forty five per cent many are being made worse by quacks and drugstore therapy as well as self-therapy.

Our first problem in establishing proper therapy for all those infected with venereal diseases is to establish some means for bringing the ninety five per cent of untreated cases to doctors for proper care. A campaign must be begun, stressing the diagnosing of all venereal diseases. In this campaign all authorized agencies whose function is to conduct periodic or occasional health examination should include a thorough diagnostic search for venereal diseases. The following are some of the

agencies which could help in this movement:

1. Private physicians
2. Hospitals and clinics,
3. Five great federal government medical services
with enormous diagnostic facilities,
4. State Department of Health,
5. City and county medical services
6. Special Groups,
 - a. elementary and advanced school medical service,
 - b. penal and other state and city institutions,
 - c. Insurance companies
 - d. Industrial Medical services,
 - e. Social service agencies,
 - f. Family consultation services
 - g. Public health nurses and many others.

Urethral smears, Wassermann, Kline and Kahn tests, and dark field examination should be made available. If all the above groups would resort to the use of the routine Wassermann test alone, a greater share of the fifty per cent of unknown infections would be discovered and treatment started. Further, a certain part of the remaining forty five per cent would be picked up as they undergo examinations. The potentialities are enormous here.

To inaugurate the above campaign it will be necessary to establish diagnostic laboratories which are accessible to the average physician. Those doctors who prefer to conduct their own diagnostic test should be instructed in postgraduate courses, so that they receive proper training

in the performance of these tests. We must next obtain the cooperation of all the above agencies, and they must become venereal disease conscious. They should adopt the policy that every patient has syphilis until it can be positively ruled out.

The doctors who cooperate in such a campaign will not only be doing a humanitarian thing, but they will be aiding themselves financially. Every case of syphilis they uncover gives them, potentially speaking, a patient who will be his for a period of very nearly five years and while "to inject the note of profit into a discussion of medical practice is a heinous sin, the enormity of which I realize, yet money, or its lack, is the rock upon which even the best instructed medical profession splits in the practical management of the syphilis problem." (Moore). The average case of syphilis treated properly costs from \$200 to \$350. Only twenty per cent of the cases unearthed will be able to pay for treatment. An additional fifty per cent will be able to afford the cost at a pay clinic, and that approximately one-third of the cases must receive treatment free or for nominal amounts. Thus the doctor may expect that approximately two out of every ten patients upon whom he has made a diagnosis of venereal disease will pay him enough to make his efforts in the direction of diagnosis worth while.

Before going further into the field of therapy, we feel that the average practicing physician is in need of further knowledge in the treatment of venereal diseases. Ignorance by the doctors has led to the cauterization of a chancre or the application of strong medicine which will jeopardize a satisfactory dark field examination. Some have failed to

recognize the clinical signs of a chancre. The practice of administering antisyphilitic drugs to a patient with a genital sore that has not received a definite diagnosis is wrong, as it creates a doubt as to whether to continue thorough treatment as if it were syphilis or to stop. The practice of treating a patient according to the Wassermann reaction, that is, stopping when negative and resuming treatment when it is positive, when it is commonly accepted that continuous treatment over a long period of time regardless of what periodic blood tests show, is the most important consideration in the syphilis therapy. These errors and the far greater errors in the treatment of gonorrhoea show the necessity for the further education of physicians. Education by postgraduate courses and demonstrations given gratis by the state to its physicians is the best policy. This educational policy for doctors should begin right in the state and city controlled public health clinics. Dr. J. E. Moore has said "we have had available for a decade or more the means of dealing with the syphilis problem.....they are not being applied. There is, I think, no use in blinking the fact that by and large syphilis is badly managed by the average practitioner, and that by and large the service is provided in the average general venereal disease clinic, whether run under public or private auspices, is not much better."

The educational program, of course, begins in the medical schools, the present teachings are inadequate and some feel that public health authorities should outline to the deans of the several medical schools the magnitude of the problem and the necessity for expanding and utilizing the facilities for teaching syphilis. It would require a generation to make

this improvement felt. A more rapid action can be obtained if the standards of physicians actually in practice can be improved. There are two methods available, the first through medical journals and medical meetings. This has been tried and found wanting, nevertheless we advise that this be continued and expanded. The second method is one that has scarcely been tried. The public health official is the one person who is in contact with every other physician in the community. He has made it a practice to shower the medical practice with bulletins on the various diseases and has accomplished much by it. Let him adopt this same measure for the venereal diseases. Let him issue bulletins weekly, even daily, in a steady stream, bulletins which will urge the more widespread use of the Wassermann service, of free arsphenamine when it is available, and by constant repetition let him teach the profession such accepted procedures of treatment as those advocated by the Cooperative Clinical Group. Then let him clean his own house by making sure that his own venereal clinics meet a minimum required standard. Then make arrangements for practicing physicians, who are so inclined, to visit the clinic and here obtain a free postgraduate course in the diagnosis and therapy of venereal diseases.

We must of necessity make the following discussion of therapy appear rather dogmatic, chiefly because there are so many variations in the therapy of venereal diseases used today, that an attempt, even if it were possible, to include them all, would tend toward confusion rather than enlightenment.

In the treatment of gonorrhoea, those who have worked longest on the problem have reached the conclusion that two principles are of para-

mount importance, namely the maintainance of efficient drainage and the stimulation of an adequate resistance to the gonococcus. For example, those who treat gonorrhoea rationally know that it does not pay to traumatize the tissues with strong chemicals and the patient must not attempt to do things which tend to lower his general fitness. There are also cases on record where complications, such as epididymitis or a peri-urethral abscess, have brought an attack of gonorrhoea abruptly to an end, probably as a result of the generation of a large production of antibody which has been able to annihilate the micro-organism.

The efficacy of vaccine therapy is determined by the ability of the vaccine to raise the titre of the complement fixation test for the specific case in question. Further, if the complement fixation reaction was strong, but the disease persisted, one could be practically certain that to establish a cure one had only to discover and treat badly draining foci.

A sound treatment of the average case of gonorrhoea follows: In the acute gonorrhoea of males, little other than the washing of the urethra with a mild lotion twice daily is necessary. This is better done with an irrigator than a syringe, providing low pressure is used, that is with the irrigator at a height of three to three and one-half feet. The lotion commonly used is potassium permanganate in dilutions of 1:12,000 to 1:8,000. This is the choice, but as changes acriflavine (1:5,000), mercurochrome 1 in 2,000 to 1 in 1,000, mercury oxycyanide 1 in 8,000 to 1 in 4,000, protargol in 1 in 1,000 and silver nitrate 1 in 20,000 to 1 in 10,000 may be found useful. The general treatment should consist of regular hours,

mild unspiced foods and abstinence from alcohol and spiced drinks. A sedative diuretic with belladonna in it often proves helpful in allaying spasm.

If symptoms have abated and a morning gleet persists and there is no evidence of further progress towards recovery, it is essential to determine the cause. It is either due to defective resistance or in one or more badly draining foci. A complement fixation test is made and if not strongly positive, vaccine treatment is instituted. Vaccines are better given via the intracutaneous route and should be started with small doses, increasing the dose fifty per cent at intervals of three or four days, until there is irritation at the site of the injection, slight elevation of temperature and increase in the urethral discharge. Thereafter, the vaccine is given once a week in gradually increasing doses. Check your reaction by the C.F.T. and if no increase, change the vaccine or method of administration.

If there is a badly draining focus, a systematic check will often aid you. Check the anterior urethra by washing it thoroughly before the specimen of urine is taken. If this specimen is perfectly clear and threadless and the prostatic and vesicular fluids are free from pathogenic elements, one can concentrate on the anterior urethra with reasonable certainty of discovering the defect. Palpation may aid you by picking up abnormal thickening. When the focus is discovered it should be opened, preferably by electro-cautery and following this with systematic dilatation at intervals of five to seven days with a Kollman dilator. If the prostate or vesicles are at fault, periodic massage plus diathermy is the mode of treat-

ment and to this we often supplement high irrigations.

In the female similar principles are observed. Drainage is aided by douching the urethra and vagina daily and by the insertion into the vagina of a dressing of gauze soaked in medicated glycerine. If the patient is unable to attend frequently for therapy on these lines, the application of a freshly prepared mercurochrome 220 every five to seven days is helpful. First the vagina and cervical canal are cleansed and then an urethroscopic swab soaked in mercurochrome is inserted into the cervical canal and left there a few minutes while the vagina is painted with mercurochrome, then the swab is replaced by a fresh one for another few minutes. The patient is instructed to douche daily with mild antiseptics. Vaccine therapy is based on the same principles that applies to the male.

In testing for cure in gonorrhoea, a full regime of therapy should first be employed, this to be checked by frequent smears and wherever possible by the C.F.T. After a complete disappearance of symptoms and a repeated series of negative smears, provocative tests should be employed to reach a positive conclusion. Such provocative tests are the use of alcoholic beverages, use of a fairly strong antiseptic, passage of an urethral sound, etc. After a series such as this have been completed with a persistent negative smear, you are in a position to pronounce the individual cured.

In the treatment of syphilis perhaps the most important factor to be remembered the advantage gained by making a diagnosis of syphilis during the sero-negative stage of the disease. This requires the use of the

dark field examination. It should be made available to every physician. If he hasn't the necessary equipment to make the examination himself, he ought to at least know how easy it is to scrape a sore and then let the juice run into a capillary tube and then send it to a laboratory for diagnosis. Treatment should be started immediately upon the diagnosis, preferably while the condition is in the sero-negative stage. The percentage of cures would definitely be increased were this universally adopted and successfully carried out.

It has definitely been established that the body tends to build up an immunity against the spirochaete. This has been shown by the period of latency established by the production of immunizing substances which hold the organism in check, either temporarily or permanently; most frequently only temporarily. This immunity is established in the primary stage of the disease and treatment at this time interferes with its production. However, this is of no concern if treatment is adequate. The experimental studies have shown that early institution of therapy is the procedure of choice providing that therapy is adequate. Dr. Ormsby states, "Interference with the establishment of this partial or complete immunity by inefficient treatment may advance the late serious developments in the central nervous system and viscera appreciably.

Early and adequate treatment of syphilis will bring down the incidence of both the early and late manifestations of the spirochaete. Dr. Moore in collaboration with the university group published a schematic outline of treatment for early syphilis which we consider adequate. This scheme calls for alternate periods of arsphenamine and bismuth compounds

for seventy weeks without any rest periods. There are essentially five courses each of arsphenamine and bismuth. Each course of arsphenamine includes six weekly injections with the exception of the first, at which time eight are given, the first three of which are given at five day intervals. Each course of arsphenamine is followed by one of bismuth. The bismuth courses increase progressively, that is, first course four injections, second course six injections, third course eight injections, and in the fourth and fifth courses ten injections each. Potassium iodide is given with the bismuth in the first series of injections. The same holds true if mercurial ointments are substituted for bismuth.

In sero-negative primaries in which a positive Wassermann reaction does not develop, treatment may be suspended at the end of the fourth course. A spinal fluid examination is recommended following the completion of the second course. During the year of observation after the cessation of treatment, several blood Wassermann examinations are made and at the end of the year a complete neurological examination, including spinal fluid, and a complete physical examination with special stress being laid on the cardio-vascular system should be made. Thereafter, there should be an annual Wassermann and physical examination.

For those who would prefer to use neocarsphenamine the procedure as given above can be followed, substituting neocarsphenamine for the arsphenamine. Another procedure which has proven successful, and in which neocarsphenamine is used, is presented by Dr. Ormsby in a recent paper. It is an outline of the treatment carried out at the syphilis clinic of the Central Free Dispensary under the supervision of Dr. Skolnik.

Five courses of neocarsphenamine are given covering a period of twenty seven months. Here the first three injections are given the first week, then three at intervals of five days, then four combined injections of neocarsphenamine and bismuth at weekly intervals, this being followed by alternating series of bismuth and neocarsphenamine separately throughout the following course. The object of using bismuth with the first few injections is to increase the natural defense forces, which have been held in abeyance by the arsenical.

In the use of any of the approved methods of therapy of syphilis, and especially of those considered unwarranted or at least those not experimentally proven, there is always the danger of side reactions, which may be either local or general, many of those requiring attention. In a paper of this length we can only list some of these reactions. They are as follows: Jarisch-Herxheimer reaction, pain and thrombosis from the injection itself, the results of using acid arsphenamine, ether odor, gastro-intestinal symptoms, nitritoid crisis, shock reactions, cutaneous eruptions, polyneuritis, postarsphenamine encephalitis and postarsphenamine jaundice.

While some men may consider arsphenamine the therapy of choice, nevertheless it requires more time and skill in its administration and untoward results are more likely to occur. Neocarsphenamine practically fulfills all the necessary requirements and its simplicity of preparation for injection and administration commends it to the average practitioner. We believe that by the use of neocarsphenamine the practitioner will have fewer and less serious reactions to contend with.

In order to establish a one hundred per cent cure it seems wise to have at least four such courses of treatment, if the serum reactions are negative. If they are positive, it is wise to advise three after that course which ends with a negative reaction.

It is usually necessary to continue treatment for years before a negative serum reaction is obtained. A positive spinal fluid in a case of three or four years duration will not usually respond to the above treatment. Therefore, after an initial dose of arsphenamine plus bismuth it seems best to change over to courses of tryparsamide (one injection of 2 gms. and nine injections of 3 gms at weekly intervals) along with bismuth.

A considerable reduction in central nervous system lues is expected with further advancement in the malarial treatment. At present it is rather inconvenient and not used to any great extent.

In treating the pregnant syphilitic woman the following treatment has been suggested by the cooperative clinics. If the diagnosis is made early, an intravenous injection of arsphenamine (from 0.2 to 0.4 gm.) or neoarsphenamine (from 0.3 to 0.6 gm.) given every week for from twelve to fifteen weeks, followed by ten weekly injections of either potassium bismuth tartrate (0.2 gm.), bismuth salicylate (0.2 gm.) or sodium potassium bismuth tartrate suspended in oil, each dose yielding from 0.05 to 0.1 gm. of metallic bismuth each. If possible, the schedule should be arranged to finish up with an arsenical, and treatment should be continued to term. If the treatment is begun late in pregnancy, combined arsenical

and bismuth treatment is indicated. Even late inadequate treatment may mean a living, possibly non-syphilitic, child. Adequate therapy in the pregnant syphilitic woman means one of the above regimes of treatment started before the fifth month of pregnancy.

Other methods of treatment for both conditions can be found by the hundreds. One is especially worthy of mention at this time. Artificial fever therapy in the treatment of gonorrhoea has been experimented with at the Mayo Clinic with rather remarkable cures. The procedure consists of placing an individual in a chamber which can be heated. The temperature is raised gradually to 106° or 107° F. and maintained for from five to six hours. They are given salt water to drink throughout the procedure. The water preventing the loss of weight and the chloride preventing the loss of strength. Two to five liters of 0.6% solution of sodium chloride are drunk during each session. The average number of sessions necessary for cure was 5.4. This opens up a big field of therapy, but at present it is a treatment only adaptable for institutions. This as well as hot baths has been tried in treatment of syphilis with some success.

The plans for the prevention of venereal diseases and the treatment of these diseases have been presented above. They are meant to show the potentialities of controlling the spirochaete and the gonococcus in the near future. We have tried to indicate that the physician assisted by the public health man be given the important part in the program suggested. Dr. Moore states, "We are faced with a situation in which we must improve our status both as physicians and as economists.

We must effect not only a widespread betterment in the way in which the disease is managed, but also in the way in which that management is paid for. Unless we are equal to both of these tasks there remains but two alternatives to continue the conspiracy of silence, to make no progress in the control of the major infectious disease problem; or by the breaking down of the conspiracy and the awakening of an enlightened public opinion, to see the problem taken from our hands and given over to those of the state. Perhaps one of these two alternatives, both distasteful to all physicians, is inevitable. The effort to avoid this led by public health officials, is worth the trial."

BIBLIOGRAPHY

1. Moore, Joseph Earle: American Journal of Public Health, 25:31, January, 1935.
2. Harrison, L. W.: Practitioner. October, 1933, page 443.
3. Lehmann, P. F.: Texas State Journal of Medicine, 30:539.
4. Leonard, Thomas B.: Virginia Medical Monthly, Vol. 61:596.
5. Fox, Everett C.: Texas State Journal of Medicine, Vol. 29, page 577.
6. Desjardins, Statiler and Popp: Journal of the American Medical Association, Vol. 104:873.
7. Chargin, Leifer, Hyman: Journal of the American Medical Association. Vol. 104, page 787
8. MacDonald, Carolyn M.: Illinois Medical Journal, Vol. LXIV, page 288.
9. Donderlehr, R. A.: Virginia Medical Monthly, Vol. 60, page 309
10. Butler, P.S.: Medical Record, December 5, 1934, page 592.
11. Rice, John L.: New York State Journal of Medicine, Vol. 35, page 533.
12. Parney, F.S.: Canada Public Health Journal, Vol. 24, page 316.
13. Earp, J. Rosslyn: American Journal of Public Health, Vol. 24, page 1103.
14. Clarke, Walter: Venereal Diseases. Volume 14, page 87.
15. Harrison, L.W.: Lancet. Volume 1, 1934, page 1021.
16. Nelson, N. A.: New England Journal of Medicine, Vol. 208, page 1153, 1933.
17. King, A.V.: Jour. of Amer. Med. Assn. 104:178, 1935.

18. Bierman and Horowitz; Jour. of the Amer. Med. Assn. 104:1797, 1935.
19. Barringer, Emily D.; Jour. of the Amer. Med. Assn. 103:1825, 1934.
20. Lyodd, V.E. and Lyodd, N.L.; The British Medical Journal, Vol. 1,
page 44, 1934.
21. Ormsby, O. S.; Jour. of the Amer. Med. Assn., Vol. 106, No. 15,
April 11, 1936.
22. Cooperative Clinical Studies; Jour. Amer. Med. Assn. Vol. 106, No. 6,
Feb. 8, 1936.
23. Summary Report of an Advisory Committee; Jour. Amer. Med. Assn. Vol.
106, No. 2, January 11, 1936.
24. Nelson, N. A.; Jour. of the American Med. Assn. Vol. 106, No. 2,
January 11, 1936.

Approved by

J. P. Evans
Professor of Medicine

Date

May, 8th, 1936