AD NUMBER

AD059882

NEW LIMITATION CHANGE

TO
Approved for public release, distribution unlimited

FROM
Distribution authorized to U.S. Gov’t. agencies and their contractors; Administrative/Operational Use; FEB 1955. Other requests shall be referred to Office of Naval Research, Washington, DC.

AUTHORITY

onr ltr 26 oct 1977

THIS PAGE IS UNCLASSIFIED
Because of our limited supply, you are requested to
RETURN THIS COPY WHEN IT HAS SERVED YOUR PURPOSE
so that it may be made available to other requesters.
Your cooperation will be appreciated.

NOTICE: WHEN GOVERNMENT OR OTHER DRAWINGS, SPECIFICATIONS OR OTHER DATA
ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED
GOVERNMENT PROCUREMENT OPERATION, THE U. S. GOVERNMENT THEREBY INCURS
NO RESPONSIBILITY, NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE
GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE
SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY
IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER
PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE,
USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.
TITLE OF PROJECT: "Studies on the Psittacosis-Lymphogranuloma Venereum Group"

Objectives: 1. To search for a specific complement fixing antigen.
   (Investigations completed March 1953)

   2. To study mode of growth and multiplication and
      other biologic characteristics of this group of agents. (Major part of investigations completed
      prior to July 1953)
3. To study the effect of therapeutic agents (antibiotics) on these viruses and on the diseases caused by them.

Abstract of Results:

A. Work Completed and Previously Reported:

This work has been reported through the medium of semi-annual, quarterly and special reports, and publications. The following is a list of publications from 1949 to 1951:


Recent advances in the differential diagnosis and treatment of infections with viruses of the psittacosis-lymphogranuloma venereum group. M. M. Sigel (Paper read before the 5th International Congress of Tropical Medicine and Malaria, Istanbul, Turkey, 1953)

Papers dealing with influenza and Q fever relate to a previous ONR contract.

B. Work Completed But Not Yet Reported:

I. Jamaica, British West Indies

(1) The effect of antibiotic therapy on LGV (two-year follow-up)

The appendix to this report gives a breakdown and a scoring procedure for the comparison of the effects of several therapeutic agents. It is fully realized that the results and the scores may be open to question and should, therefore, be qualified. The following factors and circumstances may have played an important role in determining the final analysis. (1) The patients varied as regards their integrity and intelligence. This factor would influence their regularity and adherence to treatment schedules as well as visits to the clinic for follow-ups. (2) Because of the high prevalence of the disease it is quite possible that during the period of two years, several infections with LGV may have taken place in a given patient,
thus accounting for persistence or elevation of antibodies over a period of time. We attempted to control this factor by differentiating between serologic patterns consisting of "titer increase with previous decrease" (this presumably signifying a reinfection) and "titer increase without a previous decrease" (this presumably signifying a continuing old infection). Even this differentiation is subject to error because the chances of showing a decrease in titer prior to an increase are greater when the number of blood specimens per patient is greater. Thus, a cooperative patient who presented himself for many follow-ups is more likely to show evidence of an antibody decline than a patient who made few visits to the clinic. (3) There was considerable variation in the number of patients treated with various drugs. The determining factor in selecting patients for different drugs was the amount of drug available. (4) The scoring method was selected arbitrarily. It is believed, however, that it reflects the significant differences in various groups. The positive scores were assigned to changes in antibody titer consistent with improvement or cure. In all of these positive scores, a good initial clinical response is implicit.

Whenever the clinical response was only fair a -1 score was assigned to the patient in addition to the score derived from the serologic results. For example, a patient with a fair initial clinical response and a complete serologic reversal was scored -1 and +6.

A questionable initial response had a -2 score.

A poor initial clinical response was designated with a -5 score.

When two negative scores were justified - only one, the stronger negative, was given.
The results presented in the appendix may be summarized in the following ways.

Based on the complete period of observation, the average scores are:

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aureomycin</td>
<td>2.7</td>
</tr>
<tr>
<td>Triplesulfonamide</td>
<td>2.6</td>
</tr>
<tr>
<td>Terramycin</td>
<td>1.6</td>
</tr>
<tr>
<td>Chloromycetin</td>
<td>1.5</td>
</tr>
<tr>
<td>Ilotycin</td>
<td>-0.1</td>
</tr>
<tr>
<td>Sulfathiazole</td>
<td>-1.2</td>
</tr>
<tr>
<td>Magnamycin</td>
<td>-2.7</td>
</tr>
</tbody>
</table>

If the scoring is limited to patients with regular attendance, the average scores are:

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aureomycin</td>
<td>3.9</td>
</tr>
<tr>
<td>Terramycin</td>
<td>3.0</td>
</tr>
<tr>
<td>Triplesulfonamide</td>
<td>3.0</td>
</tr>
<tr>
<td>Ilotycin</td>
<td>2.2</td>
</tr>
<tr>
<td>Chloromycetin</td>
<td>2.1</td>
</tr>
<tr>
<td>Magnamycin</td>
<td>1.8</td>
</tr>
<tr>
<td>Sulfathiazole</td>
<td>2.5</td>
</tr>
</tbody>
</table>

In the "irregular" patients or patients where regularity is unknown, the scores are:

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triplesulfonamide</td>
<td>2.0</td>
</tr>
<tr>
<td>Aureomycin</td>
<td>-0.8</td>
</tr>
<tr>
<td>Chloromycetin</td>
<td>-0.5</td>
</tr>
</tbody>
</table>
Based on analysis of serologic patterns during a period of the first 3-6 months following commencement of treatment, the average scores are: (On the basis of serologic pattern alone)

<table>
<thead>
<tr>
<th></th>
<th>OVERALL</th>
<th>REGULAR PATIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfathiazole</td>
<td>-2.1</td>
<td>-2.1</td>
</tr>
<tr>
<td>Terramycin</td>
<td>-2.5</td>
<td>-2.5</td>
</tr>
<tr>
<td>Ilotycin</td>
<td>-4.0</td>
<td>-4.0</td>
</tr>
<tr>
<td>Magnamycin</td>
<td>-4.0</td>
<td>-4.0</td>
</tr>
</tbody>
</table>

A similar trend is shown by the following ratios of sera (taken during the period of the first 3-6 months) showing a decrease in antibody titers:

- Triplesulfonamide: 9/9
- Aureomycin: 13/17
- Terramycin: 5/7
- Chloromycetin: 7/13
- Ilotycin: 7/17
- Magnamycin: 1/4
- Sulfathiazole: 2/5
Two findings emerged as by-products of this investigation.

1. The higher antibody titers usually reflected more severe or more extensive types of infection.  
2. It was rather difficult to reduce or eliminate high titers (i.e., 1:320 and higher).

(2) Epidemiological studies

a. Development of antibodies to LGV in school children

As was stated in the summary of the initial phase of study in Jamaica: "Very little is known about the existence of psittacosis or trachoma in Jamaica. It was felt that continued examination of sera from children may throw some light on the question as to what proportion of LGV antibodies represents venereally acquired infections." The findings would also help answer the question as to whether LGV is a truly venereal disease.

**Calabar School, Kingston, Jamaica**

Starting number 102. At the end of two years, 56.

50 negative*

5 gave fluctuating reactions in the range of 1:10 and negative 1 appeared to show a slight rise from negative to 1:20

**St. Joseph School, Kingston, Jamaica**

Starting number 49. At the end of two years 21.

21 negative

**St. Aloysius School, Kingston, Jamaica**

Starting number 18. At the end of 2 years, 8.

7 negative

1 slight rise (negative to 1:10)

*Negative means less than 1:10
Vere  
Starting number 80. At the end of 2 years, 37.  
30 negative  
2 fluctuating (negative to 1:20 to 1:10, negative to 1:10 to negative)  
4 slight rise negative to 1:10  

Maypen  
Starting number 73. At the end of 2 years, 31.  
24 negative  
1 fluctuating (negative to 1:20 to negative)  
5 slight rise negative to 1:10  
1 significant rise, negative to 1:640  

Watermount  
Starting number 62. After 2 years, 35.  
30 negative  
1 fluctuating (nonspecific to 1:20 to 1:10)  
1 slight rise, negative to 1:10  
2 rise, (1 negative to 1:40, 1 negative to 1:80)  
1 incomplete (negative to positive, exact titer unknown).  

Salt Spring  
Starting number 62. After 2 years, 33.  
31 negative  
2 decrease 1:20 to negative  

These results indicate that the antibodies to LGV occur with very low frequency in children as compared to adults in Jamaica. In only four instances can the results be regarded as indicating acquisition of an infection. The significance of slight rises, low titers (1:10 to 1:20) and fluctuating titers remains undetermined. It is planned
to repeat tests on as many sera as possible in those instances where there appeared to have been a slight increase or fluctuation. It is also proposed to obtain information about any clinical findings on the children with relative high increases in antibody titers. These observations are in accord with previously stated impressions (see report of January 1954) that the acquisition of antibodies to the psittacosis-LGV group of viruses in Jamaica comes as a result of sexual activity.

b. St. Louis encephalitis

In the course of the investigations on LGV, serologic tests were carried out for the purpose of determining what other virus infections were prevalent in Jamaica. A few sera showed the presence of antibodies to influenza and mumps viruses, and typhus and the spotted fever-rickettsialpox group of rickettsiae (usually in low titers). What was more impressive was the finding that children in the areas of Maypen and Vere had experienced infections with a member of the St. Louis encephalitis group. Because of this finding, it was considered advisable to search for evidence of infection in potential reservoirs and vectors. Field collections of bird and animal bloods and of mosquitoes were therefore carried out in December 1954. Neutralization tests have revealed antibodies to a virus of the St. Louis encephalitis group in the great majority of sera of mules and donkeys, and in several sera of wild birds collected in the areas of Maypen and Vere. Virus
was, however, not isolated from three pools of mosquitoes. These results suggest that SLE virus or another member of its group which is infectious for man, mules and birds is present in Jamaica.

II. Work in the United States

(1) **Interaction of Krebs-2 ascites tumor and meningopneumonitis virus**

Although the more recent investigations on this problem were done as part of the activities of the Communicable Disease Center, USPHS, the ground work as well as all of the earlier experiments were accomplished with the support of the ONR. The results of this investigation have provided a new concept of virus-tumor interaction. While other virus-tumor systems studied are associated with virus multiplication in the tumor cells and the resulting destruction of the cells, in this system tumor inhibition appears to be the result of competition between virus and tumor cells for a common substrate. This assumption is based on several types of evidence including the observation that under certain conditions it is possible to reverse the phenomenon and cause inhibition of virus multiplication by growing tumor.

(2) **Psittacosis virus in the rabbit skin**

Attempts were made to establish an allergic type of sensitivity to psittacosis virus in rabbits. Determinations of sensitivity were complicated, however, by the development of reactivity to normal tissue components present in the sensitizing antigens. It was found that interchange of antigen sources (for example, primary sensitization
with virus grown in chick embryo and challenge with virus grown in mouse brain) could not be accomplished because of the relatively low concentration of virus in tissues other than chick embryo membranes and fluids. These experiments yielded, however, an interesting by-product. It was found that psittacosis virus was capable of causing local lesions in the skin of rabbits. These reactions were suppressed by immune serum.

C. Work Not Completed

The epidemiological investigations embracing adults and children and pertaining to the questions of development, stability, and magnitude of antibody titers to LGV virus require more extensive observations.

The pathogenesis of LGV in the female and the mechanism of development of rectal lesions are still not well understood. The observations by Dr. Miles suggest that the rectal lesions are not the result of spread by way of the pelvic lymphatics. Dr. Miles and a group of gynecologists are interested in pursuing this problem further. Whether it will be possible to continue or extend the therapeutic experiments will depend on the availability of funds and/or drugs.

Some of the completed phases of the work will be published in the near future. It is also planned to prepare a monograph incorporating all of the pertinent studies in Jamaica. This project may have to await completion of the clinical, gynecological, and surgical studies.
METHOD OF SCORING

6 complete reversal
5 greater than 8 fold decrease in titer
4 8 fold decrease or persistently low titer (persistent negative titer not scored because of uncertainty that case was LGV)
3 4 fold decrease (persistent)
2 decrease (greater than 4 fold or complete reversal) followed by rise

1 fluctuation in titer
0 no change in titer
-1 fair initial clinical response
-2 questionable initial clinical response
-3 reappearance of gland after 3 months and with no previous decrease in titer
-4 late symptoms
-5 poor initial response and/or rupture of gland after 5th day of treatment
-6 rise in titer - beyond 3 months of initiation of treatment and with no previous decrease
## Table: Complement Fixation Test Results

### Aureomycin

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>66 32</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>28 64</td>
<td>R</td>
<td>?</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>12 100</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>48 64</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td>6</td>
<td>48 52</td>
<td>L</td>
<td>R</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>20 92</td>
<td>B</td>
<td>R</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>56 16</td>
<td>L</td>
<td>T</td>
<td>22nd day ruptured</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>25 56</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>10</td>
<td>60 120</td>
<td>B</td>
<td>T</td>
<td>23rd day ruptured</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>160</td>
<td>320</td>
</tr>
<tr>
<td>11</td>
<td>44 68</td>
<td>B</td>
<td>R</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>160</td>
<td>80</td>
</tr>
<tr>
<td>12</td>
<td>24 56</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>160</td>
<td>10</td>
</tr>
<tr>
<td>13</td>
<td>24 48</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Neg.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>16 24</td>
<td>L</td>
<td>T</td>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>15</td>
<td>24 88</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>640</td>
<td>640</td>
</tr>
<tr>
<td>16</td>
<td>44 64</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td>10</td>
</tr>
</tbody>
</table>

### Notes:

- *Reappearance of adenitis*
- **Except when at hospital for 6 days at inception of treatment**
- ***Bilateral lymphadenopathy***
- $&$ Gland reappeared. Placed on sulfathiazole

### Dosage:
- Capsules: C - Clinic; H - Home

### Location of bubo:
- L - Left; R - Right

### Clinical Response:
- G - Good; F - Fair; P - Poor

### Regularity:
- R - Regular; I - Irregular; ? - Questionable

### Score:
- Whenever several titers are given in one box, they usually represent results on successive serum specimens. Neg. signifies $< 1:10$. 
<table>
<thead>
<tr>
<th>NO.</th>
<th>DOSAGE</th>
<th>LOC.</th>
<th>REG.</th>
<th>CLIN. RESPONSE</th>
<th>COMPLEMENT FIXATION TEST RESULTS</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C. R.</td>
<td></td>
<td></td>
<td></td>
<td>Initial 1 Wk. 2 Wk. 1 Mo. 1 1/2 - 3 Mo. 3 1/2 - 6 Mo. 6 1/2 Mo. 1 Yr. 13 - 18 Mo. 19 - 30 Mo.</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>0 40</td>
<td>R</td>
<td>R</td>
<td></td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>54</td>
<td>40 68</td>
<td>L</td>
<td>R</td>
<td>F</td>
<td>80</td>
<td>10</td>
</tr>
<tr>
<td>55</td>
<td>44 52</td>
<td>B</td>
<td>T</td>
<td>17th day ruptured</td>
<td>160</td>
<td>10</td>
</tr>
<tr>
<td>56</td>
<td>40 80</td>
<td>L</td>
<td>T</td>
<td>11th day ruptured</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td>61</td>
<td>32 116</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td>89</td>
<td>28 84</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>92</td>
<td>20 28</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>Neg.</td>
<td></td>
</tr>
<tr>
<td>93</td>
<td>44 68</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>Neg.</td>
<td></td>
</tr>
<tr>
<td>95</td>
<td>40 72</td>
<td>B</td>
<td>R</td>
<td>G</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>96</td>
<td>36 68</td>
<td>B</td>
<td>T</td>
<td>G</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>102</td>
<td>28 56</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td>123</td>
<td>20 92</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>126</td>
<td>40 72</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>139</td>
<td>32 56</td>
<td>B</td>
<td>R</td>
<td>G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>140</td>
<td>32 64</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>141</td>
<td>48 64</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>148</td>
<td>44 80</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>149</td>
<td>20 60</td>
<td>L</td>
<td>T</td>
<td>G</td>
<td>160</td>
<td></td>
</tr>
</tbody>
</table>

Repeated testing of a serum is indicated by the letter R, preceding the titer.
### Terramycin

<table>
<thead>
<tr>
<th>NO.</th>
<th>Dosage</th>
<th>LOC.</th>
<th>REG.</th>
<th>Clin. Response</th>
<th>Complement Fixation Test Results</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C.</td>
<td>H.</td>
<td></td>
<td></td>
<td>Initial</td>
<td>1 Wk.</td>
</tr>
<tr>
<td>16</td>
<td>40</td>
<td>56</td>
<td>B</td>
<td>R</td>
<td>G</td>
<td>40</td>
</tr>
<tr>
<td>17</td>
<td>28</td>
<td>40</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>150</td>
</tr>
<tr>
<td>18</td>
<td>72</td>
<td>88</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>40</td>
</tr>
<tr>
<td>19</td>
<td>28</td>
<td>44</td>
<td>L</td>
<td>I</td>
<td>6th day ruptured</td>
<td>80</td>
</tr>
<tr>
<td>20</td>
<td>16</td>
<td>96</td>
<td>R</td>
<td>I</td>
<td>G</td>
<td>20</td>
</tr>
<tr>
<td>21</td>
<td>8</td>
<td>40</td>
<td>L</td>
<td>I</td>
<td>Unknown</td>
<td>150</td>
</tr>
<tr>
<td>22</td>
<td>28</td>
<td>124</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>20</td>
</tr>
<tr>
<td>97</td>
<td>32</td>
<td>96</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>40</td>
</tr>
<tr>
<td>98</td>
<td>20</td>
<td>48</td>
<td>L</td>
<td>?</td>
<td>G</td>
<td>80</td>
</tr>
<tr>
<td>99</td>
<td>8</td>
<td>48</td>
<td>L</td>
<td>I</td>
<td>Unknown</td>
<td>80</td>
</tr>
<tr>
<td>104</td>
<td>24</td>
<td>72</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>20</td>
</tr>
<tr>
<td>105</td>
<td>36</td>
<td>76</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>80</td>
</tr>
</tbody>
</table>

Dosage in capsules: C - Clinic; H - Home
Loc. - Location of bubo
Reg. - Regularity: R - Regular; I - Irregular; ? - Questionable
Clin. Response - G - Good

Whenever several titers are given in one box, they usually represent results on successive serum specimens. Repeated testing of a serum is indicated by the letter R, preceding the titer. Neg. signifies <1:10.
## TRIPLESULFONAMIDE

<table>
<thead>
<tr>
<th>NO.</th>
<th>DOSAGE</th>
<th>LOC.</th>
<th>REG.</th>
<th>CLIN. RESPONSE</th>
<th>COMPLEMENT FIXATION TEST RESULTS</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C.</td>
<td>H.</td>
<td></td>
<td></td>
<td>Initial</td>
<td>1 Wk.</td>
</tr>
<tr>
<td>31</td>
<td>40</td>
<td>60</td>
<td>L</td>
<td>I</td>
<td>G</td>
<td>80</td>
</tr>
<tr>
<td>32</td>
<td>40</td>
<td>72</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>40</td>
</tr>
<tr>
<td>35</td>
<td>120</td>
<td>R</td>
<td>?</td>
<td>G</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>36</td>
<td>20</td>
<td>68</td>
<td>L</td>
<td>?</td>
<td>G</td>
<td>80</td>
</tr>
<tr>
<td>37</td>
<td>28</td>
<td>68</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>160</td>
</tr>
<tr>
<td>38</td>
<td>16</td>
<td>80</td>
<td>L</td>
<td>?</td>
<td>G</td>
<td>160</td>
</tr>
<tr>
<td>39</td>
<td>20</td>
<td>52</td>
<td>L</td>
<td>I</td>
<td>G</td>
<td>160</td>
</tr>
<tr>
<td>42</td>
<td>28</td>
<td>36</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>40</td>
</tr>
<tr>
<td>44</td>
<td>48</td>
<td>64</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>40</td>
</tr>
<tr>
<td>45</td>
<td>48</td>
<td>64</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>160</td>
</tr>
<tr>
<td>46</td>
<td>48</td>
<td>64</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>160</td>
</tr>
<tr>
<td>47</td>
<td>48</td>
<td>64</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>160</td>
</tr>
</tbody>
</table>

# Reappearance of gland. Placed on triplesulfonamide again.

Dosage in tablets: C - Clinic; H - Home
Loc. - Location of bubo
Reg. - Regularity: R - Regular; I - Irregular; ? - Questionable
Clinical Response: G - Good; F - Fair; P - Poor

Whenever several titers are given in one box, they usually represent results on successive serum specimens. Neg. signifies < 1:10.
## ILOTYCIN

<table>
<thead>
<tr>
<th>NO.</th>
<th>DOSAGE C. H.</th>
<th>LOC.</th>
<th>REG.</th>
<th>CLIN. RESPONSE</th>
<th>COMPLEMENT FIXATION TEST RESULTS</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Initial</td>
<td>1 Wk.</td>
</tr>
<tr>
<td>63</td>
<td>36 76</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>80</td>
<td>160</td>
</tr>
<tr>
<td>64</td>
<td>40 72</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td>65</td>
<td>24 70</td>
<td>L</td>
<td>T</td>
<td>G</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>66</td>
<td>36 60</td>
<td>B</td>
<td>R</td>
<td>G</td>
<td>320</td>
<td>320</td>
</tr>
<tr>
<td>67</td>
<td>40 92</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td>69</td>
<td>8 16</td>
<td>L</td>
<td>R</td>
<td>F</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>70</td>
<td>34 50</td>
<td>L</td>
<td>I</td>
<td>F</td>
<td>10</td>
<td>Neg.</td>
</tr>
<tr>
<td>71</td>
<td>4 4</td>
<td>R</td>
<td>T</td>
<td>Unknown</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>90</td>
<td>78 90*</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>91</td>
<td>66* 78*</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>100</td>
<td>72* 96*</td>
<td>B</td>
<td>R</td>
<td>G</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>112</td>
<td>66* 104*</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>113</td>
<td>96* 132*</td>
<td>R</td>
<td>T</td>
<td>14th day</td>
<td>40</td>
<td>160</td>
</tr>
<tr>
<td>114</td>
<td>72* 96*</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>115</td>
<td>72* 96*</td>
<td>R</td>
<td>R</td>
<td>p^8</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>117</td>
<td>30* 90*</td>
<td>R</td>
<td>T</td>
<td>F</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>118</td>
<td>54* 90*</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>120</td>
<td>30* 66*</td>
<td>B</td>
<td>R</td>
<td>G</td>
<td>320</td>
<td>320</td>
</tr>
<tr>
<td>125</td>
<td>125 198</td>
<td>L</td>
<td>R</td>
<td>F</td>
<td>320</td>
<td>320</td>
</tr>
</tbody>
</table>
**ILOTYCIN (Continued)**

<table>
<thead>
<tr>
<th>NO.</th>
<th>DOSAGE</th>
<th>LOC.</th>
<th>REG.</th>
<th>CLIN. RESPONSE</th>
<th>COMPLEMENT FIXATION TEST RESULTS</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C.</td>
<td>H.</td>
<td></td>
<td></td>
<td>Initial</td>
<td>1 Wk</td>
</tr>
<tr>
<td>127</td>
<td>32</td>
<td>108</td>
<td>L</td>
<td>I</td>
<td>P&lt;sup&gt;8&lt;/sup&gt;</td>
<td>***</td>
</tr>
<tr>
<td>128</td>
<td>34</td>
<td>74</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>40</td>
</tr>
<tr>
<td>131</td>
<td>44</td>
<td>60</td>
<td>R</td>
<td>R</td>
<td>G&lt;sup&gt;6&lt;/sup&gt;</td>
<td>40</td>
</tr>
<tr>
<td>132</td>
<td>46</td>
<td>88</td>
<td>L</td>
<td>R</td>
<td>G&lt;sup&gt;6&lt;/sup&gt;</td>
<td>20</td>
</tr>
<tr>
<td>133</td>
<td>12</td>
<td>28</td>
<td>R</td>
<td>I</td>
<td>P</td>
<td>160</td>
</tr>
<tr>
<td>151</td>
<td>24</td>
<td>28</td>
<td>L</td>
<td>I</td>
<td>5th day ruptured&lt;sup&gt;8&lt;/sup&gt;</td>
<td>40</td>
</tr>
</tbody>
</table>

*100 mg

**Gland reappeared. Placed on 24 tablets Ilotycin (200 mg) and aureomycin 36C; 60H with good response

***Because of poor response, placed on chloromycetin 16C; 76H

† Enlarged left node, no pain. Given aureomycin 90H

a - side effects

Dosage in capsules and tablets:  C - Clinic; H - Home
Loc. - Location of bubo
Reg. - Regularity: R - Regular; I - Irregular
Clinical Response - G - Good; P - Poor; F - Fair

Whenever several titers are given in one box, they usually represent results on successive serum specimens. Repeated testing of a serum is indicated by the letter R preceding the titer. Neg. signifies <1:10.
# Chloromycetin

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C. H.</td>
<td></td>
<td></td>
<td></td>
<td>Initial 1 Wk. 2 Wk. 1 Mo. 1½-3 Mo. 3½-6 Mo. 6½ Mo. 1 Yr. 13-18 Mo. 19-30 Mo.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>16 40</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>10 20 40 40 10 10</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>48 64</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>20 40 40 10 Neg. 10 Neg.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>32 56</td>
<td>B</td>
<td>I</td>
<td>F</td>
<td>80 40 40 10 Neg. 10 Neg. 10</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>32 52</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>160 160 320 320 80 40 40 40 40</td>
<td></td>
</tr>
<tr>
<td>73</td>
<td>24</td>
<td>B</td>
<td>I</td>
<td>Unknown</td>
<td>10 40 40 40 80 40 40</td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>24 32</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>40 40 40 10 Neg. 40 Neg.</td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>28 38</td>
<td>L</td>
<td>I</td>
<td>G</td>
<td>20 20 10 40 Neg. 40 Neg. 160 Neg.</td>
<td></td>
</tr>
<tr>
<td>76</td>
<td>36 76</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>20 20 10 40 Neg. 40 Neg. 160 Neg.</td>
<td></td>
</tr>
<tr>
<td>77</td>
<td>48 64</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>10 40 40 10 10 10</td>
<td></td>
</tr>
<tr>
<td>78</td>
<td>48 64</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>40 40 10 10 10 10</td>
<td></td>
</tr>
<tr>
<td>79</td>
<td>48 64</td>
<td>U</td>
<td>R</td>
<td>G</td>
<td>40 40 40 10 Neg. 640 Neg.</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>32 80</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>10 10 10 10 160 40 40</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>32 72</td>
<td>B</td>
<td>R</td>
<td>G</td>
<td>40 10 10 10 10 10 10 10 10</td>
<td></td>
</tr>
<tr>
<td>83</td>
<td>36 76</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>10 10 10 10 10 10 10 10</td>
<td></td>
</tr>
<tr>
<td>107</td>
<td>12 43</td>
<td>L</td>
<td>I</td>
<td>Unknown</td>
<td>80 80 80 80 80 80 80</td>
<td></td>
</tr>
<tr>
<td>109</td>
<td>48 60</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>80 80 80 80 80 80 80</td>
<td></td>
</tr>
<tr>
<td>134</td>
<td>48 64</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>80 80 80 80 80 80 80</td>
<td></td>
</tr>
<tr>
<td>135</td>
<td>28 36</td>
<td>L</td>
<td>I</td>
<td>P</td>
<td>80 80 80 80 80 80 80</td>
<td></td>
</tr>
</tbody>
</table>

*Urethral stricture*  
**Right gland enlarged - Chloromycetin therapy repeated**  
***Resumption of gland - Chloromycetin therapy repeated***  
†Gland still enlarged - placed on trimethylaminamide: 360; hH  
* Dysuria

**Dosage in capsules:**  
C - Clinic; H - Home  
**Loc.** - Location of bubo  
**Reg.** - Regularity: R - Regular; I - Irregular  
**Clin. Response** - G - Good; F - Fair; P - Poor; ? - Questionable
## Magnamycin

<table>
<thead>
<tr>
<th>No.</th>
<th>Dosage</th>
<th>Loc.</th>
<th>Reg.</th>
<th>Clinical Response</th>
<th>Complement Fixation Test Results</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C. H.</td>
<td></td>
<td></td>
<td></td>
<td>Initial 1 Wk. 2 Wk. 1 Mo. 1½ - 3 Mo. 3½ - 6 Mo. 6½ Mo. 1 Tr. 13 - 18 Mo. 19 - 30 Mo.</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>36</td>
<td>R</td>
<td>R</td>
<td>P</td>
<td>20 20 40* 40* 10 10 Neg. Neg. Neg.</td>
<td>-5</td>
</tr>
<tr>
<td>27</td>
<td>12</td>
<td>L</td>
<td>?</td>
<td>G</td>
<td>10 40 40 40 40 10 10 10 10</td>
<td>-6</td>
</tr>
<tr>
<td>103</td>
<td>52**</td>
<td>R</td>
<td>R</td>
<td>F</td>
<td>160 160 160 160 160 160 160 160 160</td>
<td>6</td>
</tr>
<tr>
<td>105</td>
<td>21**</td>
<td>R</td>
<td>R</td>
<td>G</td>
<td>120 120 120 120 120 120 120 120 120</td>
<td>-1</td>
</tr>
<tr>
<td>110</td>
<td>30</td>
<td>L</td>
<td>I</td>
<td>F</td>
<td>160 160 160 160 160 160 160 160 160</td>
<td>-1</td>
</tr>
<tr>
<td>111</td>
<td>48</td>
<td>L</td>
<td>R</td>
<td>G</td>
<td>96** 96** 96** 96** 96** 96** 96** 96** 96**</td>
<td>-5</td>
</tr>
<tr>
<td>122</td>
<td>66**</td>
<td>B</td>
<td>I</td>
<td>P</td>
<td>96** 96** 96** 96** 96** 96** 96** 96** 96**</td>
<td>6</td>
</tr>
</tbody>
</table>

*Gland still enlarged. Placed on aureomycin. Good response

**100 mg. per capsule

***Enlargement of gland still present. Put on chloromycetin with good response. No follow-up available.

Dosage in capsules: C - Clinic; H - Home
Loc. - Location of bubo
Reg. - Regularity: R - Regular; I - Irregular; ? - Questionable
Clinical Response: P - Poor; G - Good; F - Fair

Whenever several titers are given in one box, they usually represent results on successive serum specimens. Repeated testing of a serum is indicated by the letter R preceding the titer. Neg. signifies 1:10.
# Sulfathiazole

## Complement Fixation Results

<table>
<thead>
<tr>
<th>No.</th>
<th>Dosage C. H.</th>
<th>Loc.</th>
<th>Reg.</th>
<th>Clinical Response</th>
<th>Initial</th>
<th>1 wk.</th>
<th>2 wk.</th>
<th>1 mo.</th>
<th>1½ - 3 mo.</th>
<th>3½ - 6 mo.</th>
<th>6½ mo.</th>
<th>1 yr.</th>
<th>13 - 18 mo.</th>
<th>19 - 30 mo.</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>8</td>
<td>112</td>
<td>L</td>
<td>G</td>
<td>20</td>
<td>10</td>
<td></td>
<td></td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>8</td>
<td>104</td>
<td>L</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td>10</td>
<td></td>
<td>10</td>
<td>10</td>
<td></td>
<td>-1</td>
</tr>
<tr>
<td>33</td>
<td>78</td>
<td>L</td>
<td>?</td>
<td>P</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td>40*</td>
<td>10</td>
<td></td>
<td></td>
<td>(R Neg.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>84</td>
<td>R</td>
<td>?</td>
<td>P</td>
<td>150*</td>
<td>50</td>
<td></td>
<td></td>
<td>640</td>
<td>640</td>
<td>160</td>
<td></td>
<td>-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>30</td>
<td>R</td>
<td>?</td>
<td>P</td>
<td>640**</td>
<td>640</td>
<td>640</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>108</td>
<td>B</td>
<td>R</td>
<td>G</td>
<td>40</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>120</td>
<td>B</td>
<td>?</td>
<td>G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>36</td>
<td>R</td>
<td>?</td>
<td>G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>56</td>
<td>B</td>
<td>R</td>
<td>9th day ruptured</td>
<td>640</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>94</td>
<td>80</td>
<td>R</td>
<td>?</td>
<td>P</td>
<td>10***</td>
<td>40</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>108</td>
<td>72</td>
<td>R</td>
<td>?</td>
<td>P</td>
<td>150ff</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>130</td>
<td>72</td>
<td>L</td>
<td>?</td>
<td>G</td>
<td>160</td>
<td>160</td>
<td>160</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Gland still enlarged. Placed on triplesulfonamide.

**Gland still enlarged. Put on triplesulfonamide, sulfamethazine, and sulfathiazole - 20C; 6hH. Poor response. After 20 days, put on aureomycin - 16C; 96H. Good response.

***Gland still enlarged. Put on aureomycin 36C; 60H. Good response.

††Gland still enlarged. Put on chloromycetin 24C; 6hH. Good response.

**Dosage in tablets: C - Clinic; H - Home
Loc. - Location of bubo
Reg. - Regularity
Clinical Response: G - Good; F - Fair; P - Poor

Whenever several titers are given in one box, they usually represent results on successive serum specimens. Repeated testing of a serum is indicated by the letter R, preceding the titer. Neg. signifies <1:10.