

**Dr. R. Bruce Low's report to the Local Government Board on the arrangements made in Germany for the isolation of small-pox cases.**

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Dr. R. Bruce Low's Report to the Local Government Board  
on the arrangements made in Germany for the isolation  
of Small-pox cases.

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W. H. POWER,  
Medical Officer,  
10th March, 1904.

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Conflicting statements having been made from time to time in the public press as to the methods employed in Germany in dealing with small-pox patients, the President of the Local Government Board determined to obtain through his medical staff information, collected personally in Germany, of a sort to enable him to contrast the actual methods employed there with those existing in England and Wales. The mission was entrusted to me, and I visited a number of the principal towns in Germany during the autumn of 1903.

As a preliminary to my inquiry I proceeded to Berlin to confer with the officials of the Central Imperial Health Office,\* and to ascertain from them if it were possible to see current small-pox cases undergoing isolation. But as no cases of the disease existed in Germany, so far as the Central Health Office were aware at the time of my visit, it was arranged that I should visit representative towns in the four chief States of the German Empire, viz., Berlin, Cologne, Frankfort-on-Main, Wiesbaden, and Mainz, in the kingdom of Prussia; Munich and Nuremberg, in the kingdom of Bavaria; Dresden and Leipzig, in the kingdom of Saxony; and Stuttgart, in the kingdom of Württemberg. I accordingly visited these ten towns, conferred—except at Mainz where circumstances compelled me to be content with the evidence of lay officials—with the physicians of the hospitals at each place, inspected the accommodation provided for small-pox cases, and obtained also information on the subject of my inquiry from local medical men, municipal officials, and others. While in Berlin I had the advantage of conferring with Dr. Pistor (Geheimer Ober-Medicinalrat und vortragender Rat im Ministerium der Geistlichen Unterrichts und Medicinal Angelegenheiten), from whom I received valuable documentary evidence.

At the Central Imperial Health Office at Berlin I obtained the following general information on the subject of my inquiry:—

The regulations as to notification and isolation of small-pox cases in the German Empire are drawn up in compliance with the "Law concerning the combating of diseases which constitute a common danger." This law is dated June 30th, 1900.† The regulations in force prior to the law of 1900 did not differ in any essential features.

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\* Kaiserliches Gesundheitsamt.

† Gesetz betreffend die Bekämpfung gemeingefährlicher Krankheiten, vom 30 Juni, 1900.

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The notification of small-pox is obligatory throughout the German Empire, and the persons required to notify the disease to the police authorities are: (1) the attending medical practitioner, (2) the head of the household, (3) any person who has attended on or nursed the patient, (4) the person in whose dwelling or lodging the case or death has occurred, and (5) the Coroner. "Those named in (2) to (5) are only bound to give notice if the first-named is not at hand." As soon as the police authorities of the district have received notification of the occurrence of small-pox, the information is at once communicated to the Medical Officer of Health, whose duty it is to examine immediately into the circumstances of the case, and to make a report thereon. All persons suffering from small-pox, or suspected to be suffering from small-pox, can be ordered to hospital for isolation if, in the opinion of the medical adviser of the local authority, the patient cannot be properly isolated at his home. In particular cases where the condition of the sick person is so grave as to make, in the view of his medical attendant, his removal to hospital dangerous to life, he may be allowed to remain at home. I was informed also that in rural districts remote from any hospital the patient might also, with the consent of the Medical Officer of Health, be permitted to remain at home during his illness.

On the occurrence of a case of small-pox in a house, the "contacts" are immediately vaccinated or re-vaccinated. In some towns the "contacts" are removed to a place of isolation till the danger of their developing small-pox has passed.

In Germany separate small-pox hospitals are not provided, except in rare instances. Cases of this disease are, as a rule, removed to the general hospital of the town or district, where commonly a pavilion is kept always in readiness. Not unfrequently it is thought enough to clear out the patients from some occupied pavilion and transfer them elsewhere, so as to make room for the small-pox case or cases. In a very few instances, as for example at Frankfort-on-Main, the portion of the general hospital site on which the small-pox pavilion stands is fenced by a stone or brick wall, to prevent communication between the other parts of the hospital and that on which small-pox cases are isolated. This pavilion is, in the absence of small-pox, commonly used for the treatment of other maladies, infectious or otherwise, as required. Occasionally, as at Dresden, arrangements are made to erect a temporary wooden fence round the small-pox pavilion as soon as a case is admitted. But generally, as has been said, small-pox cases are isolated in a pavilion standing on the site of the general hospital, and in no way shut off from the rest of the establishment. In most cases this pavilion is supplied with food from the central kitchen, and the soiled linen of small-pox patients is sent to the general laundry after being steeped in some disinfecting solution. The nurses and the medical officer or any other persons whose business brings them into relation with the small-pox pavilion are at once re-vaccinated as a matter of routine; but re-vaccination of the whole hospital *personnel* is not carried out, reliance being placed on the statutory vaccination and re-vaccination of the general population under the German Vaccination Law of April 8th, 1874.\*

Making inquiry as to whether small-pox had been observed to spread from the isolation pavilion to the rest of the general hospital or to houses in the immediate neighbourhood, I was informed by Dr. Wutzdorff (Geheimer Regierungsrat und Director im Kaiserlichen Gesundheitsamt) that instances of such spread were very rare, and that when they did occur the persons infected were those whose primary vaccination had not for one or another reason been carried out, or whose re-vaccination had been performed at a comparatively distant period. Dr. Wutzdorff also told me that occasionally small-pox cases, not diagnosed at first as such, had been admitted to wards or pavilions in a general hospital and had spread the infection to unprotected persons coming into relation with them. At Berlin several instances of this kind had recurred both at the Charité and at the Friedrichshain hospitals during the last few years, as will presently be seen. In the opinion of Dr. Wutzdorff

\* Young children must be vaccinated before the end of the calendar year following the year of birth; and all school children must be re-vaccinated in their twelfth year. Obedience to this law is enforced by fine or imprisonment.

BERLIN





# BERLIN.



Sketch Map of the site of the BERLIN ROYAL CHARITÉ HOSPITAL and its surroundings.  
 The small-pox pavilion is shown in Red ■  
 The space within the dotted red lines (-----) is where certain infectious diseases are isolated, & which is enclosed by a low open iron fence.  
 The Railway which forms the boundary of the South Western part of the site is marked



and other medical authorities with whom I conferred, the immunity from small-pox displayed by the people residing in and around a general hospital, when that disease was being isolated there, is entirely due to the almost complete antecedent protection of the population by compulsory vaccination and re-vaccination.

There are, it seems, no general instructions issued by the Central Health Authority to the local authorities of towns and districts in Germany as to the construction and administration of small-pox pavilions. Each municipality makes its own arrangements for the isolation of small-pox under the advice and direction of its Chief Medical Officer.

There appeared a general consensus of opinion that a considerable proportion of the small-pox cases now met with in Germany were in the persons of foreigners; especially Russians, Austrians, and Italians, many of whom come to Germany to work in new industrial undertakings, or as labourers on the construction of railways or on other public works. Many of the outbreaks of small-pox reported in Germany occur in towns and districts situated on or near the Russian or Austrian frontiers, especially the former. There are considerable commercial communications between some large towns in Germany and Russia, and small-pox has been observed in Russian commercial men visiting Berlin and other places in connexion with their business. Further, Russian and other emigrants passing through Germany on their way to Hamburg or other ports, by rail, have been known to infect persons whose duties, as railway officials for example, caused them to visit the trains, or who otherwise came casually into contact with these travellers.

Importation of small-pox infection into Germany has now and again been attributed to receipt from abroad of infected articles which had been contaminated through being handled by persons suffering from the disease, or which had been made in dwellings where small-pox was present. Lastly, infection has been brought by means of shipping from foreign countries to the larger German ports, such as Hamburg and Bremen.

The following table gives, for purposes of comparison, the number of recorded deaths from small-pox in Germany and in England during the 12 years 1891 to 1902 inclusive:—

Country, and Date of Census.	Population.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	Total in Years.
Germany (1900) ...	56,367,178	49	108	157	88	27	10	5	15	28	49	56	15*	607
England and Wales (1901).	32,526,075	49	431	1,457	820	223	541	25	253	174	85	242	2,461	6,761†

\* The number of small-pox deaths for 1902 has been supplied to me from the Central Imperial Health Office at Berlin, subject to any slight corrections which may be found necessary when the Medical Statistics for 1902 are issued officially.

† There were 754 deaths from small-pox in England and Wales during 1903, but I have been unable to obtain the corresponding figures for Germany for that year.

A brief description of the accommodation provided for small-pox isolation in the ten towns I visited is given below, and, where available, a map, plan, or diagram,\* showing the site of the hospital or the arrangement of the buildings on the site, with the relations of the small-pox pavilion to the other hospital ward blocks or pavilions, is appended.

#### PRUSSIA.

*Berlin* has an estimated population‡ of 1,998,146. Small-pox cases occurring here are removed for isolation to the Royal Charité Hospital, which is situated on a site comprising 18 hectares‡ of land in the north-western part of

\* For much valuable assistance in the preparation of the appended maps, plans, and diagrams I am indebted to Messrs. Besley and Hunter, of the Medical Department.

† These estimates of population for the towns visited by me are taken from the December issues of the "*Veröffentlichungen aus dem Kaiserlichen Gesundheitsamte*," published weekly at Berlin.

‡ A hectare equals 2·471 acres.



Berlin, in a fairly populated district (see map appended). The Charité is the largest general hospital in Berlin and has about 1,500 beds. Connected with the Charité is the Medical School of the Berlin University, including the well known Pathological Institute, attended by large numbers of students and medical men. At the Charité are received a considerable variety of cases, surgical and medical, including persons suffering from infectious diseases. For the latter three pavilions are provided, one of which, divided into two wards, with a total accommodation of 12 beds, is reserved for small-pox. This small-pox pavilion, as may be seen by a reference to the map, is not shut off from the rest of the hospital save by a low open iron fence (marked by a dotted red line on the plan annexed), easily surmountable, which surrounds that portion of the site on which stand the pavilions for infectious disease. The small-pox pavilion is only about 24 feet from one of the pavilions used for isolation of scarlet fever, and only about 150 feet from the southern boundary wall of the establishment which abuts on the street. When a case of small-pox is admitted the nurses and other staff told off for the small-pox pavilion are re-vaccinated by one of the hospital assistant medical officers; there is no general re-vaccination of the rest of the staff of the hospital or of the patients in the medical and other wards. There exists in connexion with the pavilions for infectious disease a small separate block for the accommodation of nurses engaged in waiting on this class of cases, so that the small-pox nurse (or nurses) does not sleep in the general nursing block; the cooking, however, for the small-pox patients and for the small-pox nurses is done at the central kitchen, whence the food is brought to the special pavilion. The washing of soiled linen, &c., after certain precautions have been taken, is effected at the hospital central laundry. When small-pox is admitted to this pavilion at the Charité it is usual, I understand, to remove as early as possible the patients from the adjoining pavilions to some other part of the hospital. I was informed by General-Arzt Schaper (Geh. Ob. Med. Rat.), who is the Chief Medical Director of the Charité, that reliance is placed upon the previous vaccination and re-vaccination of the population, including the patients in the hospital, to protect them from the possible spread of the infection from small-pox cases treated on the site of the Charité. He added that but for statutory vaccination and revaccination it would be necessary to find a site in the country, away from the town population, where small-pox cases might, without danger to others, be isolated. He was very strongly of opinion that it is the universal vaccination and re-vaccination of the community that prevents small-pox from spreading, and that without the practice in question the whole system of isolation of the disease in Germany would have to be completely changed, which would involve enormous expense to the ratepayers. As matters stood the officials of Berlin had no fear of bringing small-pox cases into the Charité, and it was rare that any spread of disease took place from the small-pox pavilion. When such occurred, it was mainly among unvaccinated persons, or among persons whose re-vaccination had been performed at a comparatively distant date, and whose protection, therefore, had worn out.

On examining the recent small-pox statistics of Berlin up to the period for which published details were available at the time of writing, I find that during the seven years from 1895 to 1901 inclusive, outbreaks occurred in each year except two (viz., 1896 and 1900), and that in each outbreak the origin of the infection was traced to foreigners; Russians, Italians, Austrians, Portuguese, and in one instance to a group of performing negroes from Togoland in German West Africa. In all, some 70 cases were reported in the seven-years period just referred to; only nine of the cases were fatal.

A very interesting group of cases, five of which were fatal, occurred in 1895, to which my attention was specially drawn by Dr. Wutzdorff, the courteous Director of the Central Imperial Health Office. This group resulted from the admission of an unrecognised case of small-pox in an unvaccinated child\*, aged 3, to the large general hospital at Friedrichshain (800 beds or more) in the suburbs of Berlin. Three days later the girl died, and on the same day her infant sister, aged 3 months, sickened with what was thought to be chicken-pox. She also was removed to the general hospital at Friedrichshain. In her case small-pox was diagnosed on admission, and in consequence the infant was at once removed to the small-pox pavilion at the Charité Hospital, where she speedily died. Starting from these two cases, a localised outbreak occurred at the

\* Her mother stated that the child was unsuccessfully vaccinated on two occasions.



COLOGNE

ADRIANUS PAPILLI



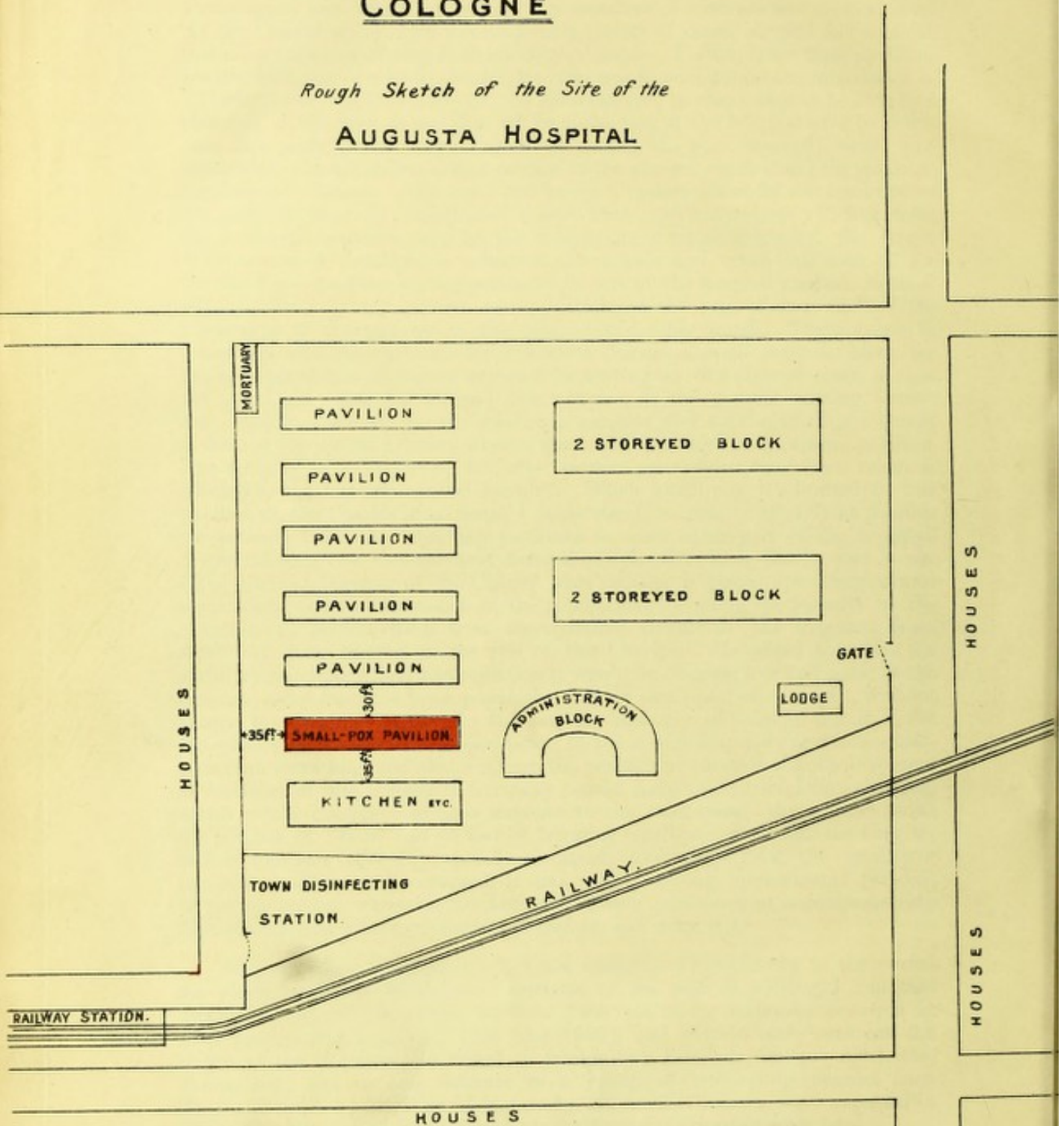
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# COLOGNE

*Rough Sketch of the Site of the*

## AUGUSTA HOSPITAL





Friedrichshain Hospital among patients who had been inmates of, or who had had relation with, the pavilion in which the two children had for a while been nursed. These cases were: (1) an unvaccinated scarlatina convalescent, aged 9; (2) an unvaccinated measles convalescent, aged 2; (3) a whooping cough convalescent, aged  $3\frac{1}{2}$ , who also had never been vaccinated. These three attacks all proved fatal. (4) A woman, aged 31, convalescent from diphtheria, and who had been treated in the block to which the two first cases had been admitted; (5) one of the nursing staff, aged 22, who had been in relation with some of the previous cases; (6) a ward-maid, aged 30, employed in the same pavilion as the previous case. The diphtheria convalescent aged 31, had been re-vaccinated 19 years previously; the nurse's re-vaccination had proved unsuccessful; and the ward-maid had never been re-vaccinated at all. The small-pox attack in each of these three adults was mild. Later, a further crop of cases of small-pox developed in the Friedrichshain Hospital, viz., (7) a male servant, aged 21, who had some duties to perform in the pavilion to which the early cases had been brought before removal to the Charité; he had been vaccinated in infancy, but unsuccessfully re-vaccinated in boyhood; (8) a medical student at that hospital, aged 24, vaccinated in infancy, but unsuccessfully re-vaccinated in boyhood; (9) and (10) two other medical students, colleagues of the former, aged respectively 22 and 23, both vaccinated in infancy and re-vaccinated in boyhood.\* (11) A workman, aged 36, employed in the hospital, vaccinated in infancy and re-vaccinated at the age of 12.† This man had never been in the pavilion where the other cases had been treated, but prompted by curiosity had ventured close to the door of the particular pavilion to see some of the small-pox cases that were being removed to the Charité. The three medical students were present in the mortuary when the body of the first child who had died from unrecognised small-pox was examined. All of these five last-mentioned Friedrichshain cases had the disease in a mild form.

It deserves mention that the source of infection of the two first cases which started the outbreaks in the Friedrichshain and Charité Hospitals was traced to a lodger, a Russian, who was staying temporarily at the house of the parents of the two children earliest affected. This Russian suffered from "pimples" on his face for which he sought treatment at the out-door department of the Charité, where his disease was at first diagnosed as "Urticaria Varioliformis Universalis." A student, aged 23, at the Charité, who was attacked by small-pox a fortnight later, was regarded as having been infected by the Russian patient in the waiting room. This student had been vaccinated in infancy and re-vaccinated in boyhood, and unsuccessfully re-vaccinated on entering the army. Another student, also aged 23, developed small-pox a fortnight after paying a single visit to the pavilion at the Charité where some of the Friedrichshain patients were being isolated. He had been vaccinated in infancy, but his re-vaccination in boyhood was unsuccessful. Both students had mild attacks. Lastly, to the group of cases traced to the Russian, there has to be added that of an unvaccinated boy aged 4, whose mother had lent the mother of the two first cases a sofa on which the children had lain before they were removed to the Friedrichshain Hospital. This boy was attacked after the sofa was returned to his mother. When he fell ill he was taken to the Charité, where he had a severe attack of confluent small-pox, and barely escaped with his life. His eyesight, however, was permanently damaged.

Thus, from the Russian lodger, small-pox directly or indirectly spread to 16 persons, 10 of whom were adults, all vaccinated in infancy and some of whom had been re-vaccinated; all of these adults recovered, none of their attacks having been severe. The remaining six were children, whose ages varied from 3 months to 9 years; none of them had been successfully vaccinated; five of them died, and the sixth narrowly escaped death, but had permanent injury of his eyesight. In the family first attacked, and where the two unvaccinated children died, the only other child of the family, aged 5 years, had been vaccinated as an infant, and, though exposed to the small-pox infection in a very marked degree, escaped entirely. In the family where the unvaccinated boy was attacked after the return of the infected sofa, there were three other children, all of whom had been successfully vaccinated; these children, though exposed to the same infection as their unvaccinated brother, escaped altogether.‡

In this connexion, regarding the spread of small-pox in the Berlin Charité to persons who had not been previously protected by re-vaccination, reference may be made to the experience of Professor Weintraud of Wiesbaden, while acting as resident medical officer at the Charité, see page 8.

*Cologne* has an estimated population of 399,126, and is a city of great importance, commercially and otherwise. The occasional cases of small-pox imported into Cologne are isolated at the Augusta Hospital, which is situated in the north-eastern suburbs of the city. The site is trapezoid in shape, and on two sides it is overlooked by rows of four-storeyed buildings; on the third side runs a railway embankment; and on the fourth are some forts occupied by soldiers.

\* These students were re-vaccinated when it was recognised that small-pox had occurred in the hospital, but they had already received the infection, and their re-vaccinations were unsuccessful.

† He was also re-vaccinated along with other members of the hospital staff when small-pox was diagnosed in the first group, but he had already been infected, and had passed through a portion of the incubation period of small-pox, so that his latest re-vaccination was too late to check his attack.

‡ *Medizinal-Statistische Mittheilungen aus dem Kaiserlichen Gesundheitsamte: Band iv. Ergebnisse der amtlichen Pockentodesfallstatistik im Deutschen Reiche vom Jahr 1895, nebst Anhang "Die Pockenerkrankungen im Jahre 1895."*



At one corner of the site, but shut off from it by a high wall, is the city disinfecting station. The site is enclosed by a brick wall nine feet high. The hospital has accommodation for 575 beds for medical cases (no surgical cases are admitted, there being two other hospitals in the town), including 100 beds for cases of infectious diseases, such as scarlet-fever, measles, and small-pox. A hundred beds in a special pavilion are reserved for tuberculosis cases in advanced stages of the disease. Tuberculosis patients in less advanced stages are treated according to modern open-air methods at a sanatorium outside the town. Nursing at the Augusta Hospital is by Sisters of Mercy. There is no separate pavilion for small-pox; when a case is notified a pavilion is at once cleared of its patients by removal of them to some other part of the hospital. The nurses and other members of the staff likely to be brought into relation with the small-pox case are at once re-vaccinated. I was shown the pavilion usually selected for the isolation of small-pox at the Augusta Hospital. It contains two large wards, each with 17 beds, and three small private or observation wards each with two beds—40 beds in all. There is also a kitchen, scullery, and bathroom; the closet accommodation is at either end of the pavilion. There is in addition a sleeping apartment for the nurses. This small-pox pavilion is situated about 30 feet from the nearest adjoining pavilion, and about 35 feet from the boundary wall. It is about the same distance from the main hospital kitchen and a little further from the central administrative block (see diagram plan of site appended). When I visited the Augusta Hospital I was met by Professor Minkowski, the Chief Physician, who was good enough to explain the details of the method adopted in Cologne for isolating small-pox. There had been no instance, so far as he knew, of spread of infection from the pavilion. He expressed the opinion that the German immunity from small-pox was due to general compulsory vaccination and re-vaccination; it could not, he asserted, be attributed to the German method of isolation, which, he pointed out, would completely fail if it were carried out among a population which had not received the practically complete protection conferred by statutory vaccination and re-vaccination.

I also conferred with Dr. Merder, the Medical Officer of Health for Cologne, who agreed with the above opinions expressed by Professor Minkowski. There had occurred, he said, but few small-pox cases in Cologne, notwithstanding the many foreigners who visit the city for business or pleasure. Only one case of small-pox had come under notice in Cologne during the last 10 years.

There had been some discussion among the authorities at Cologne with regard to the provision of a hospital site on the outskirts of the city for the isolation of imported cases of cholera or plague; but I understood that it was not intended at present to isolate small-pox anywhere else than at the Augusta Hospital.

*Frankfort-on-Main* has an estimated population of 311,410, and is a town of considerable commercial importance, being visited by many foreigners. When small-pox cases occur in Frankfort they are isolated at the General Hospital, which is situated on the outskirts of the town on the south side of the river Main, which hospital has a total accommodation of 850 beds, 50 of which are reserved for infectious cases. Frankfort has been somewhat fortunate, so far, in escaping from fatal outbreaks of small-pox; from 1892 to 1902 nine fatal cases have been recorded, viz., five in 1893 and four in 1900. On the first of these occasions the infection was brought by workmen from the Russian border, and on the last it was believed to have been imported by a Russian Pole.\* The outbreak of 1900 occurred coincidentally with a strike among local joiners; one of the foreign agitators who attended a meeting is believed to have introduced the infection. Two cases were notified in 1901 in the persons of two Mormons who had arrived in Frankfort from America. Neither of these persons had ever been vaccinated. In the outbreak of 1900 there occurred altogether 26 cases in Frankfort and neighbourhood.† These were isolated on the site of the General

\* Bericht über die im Sommer, 1900, beobachtete Blatterepidemie Von Dr. M. Kaufmann. Münchener Med. Wochenschrift No. 50, 1900.

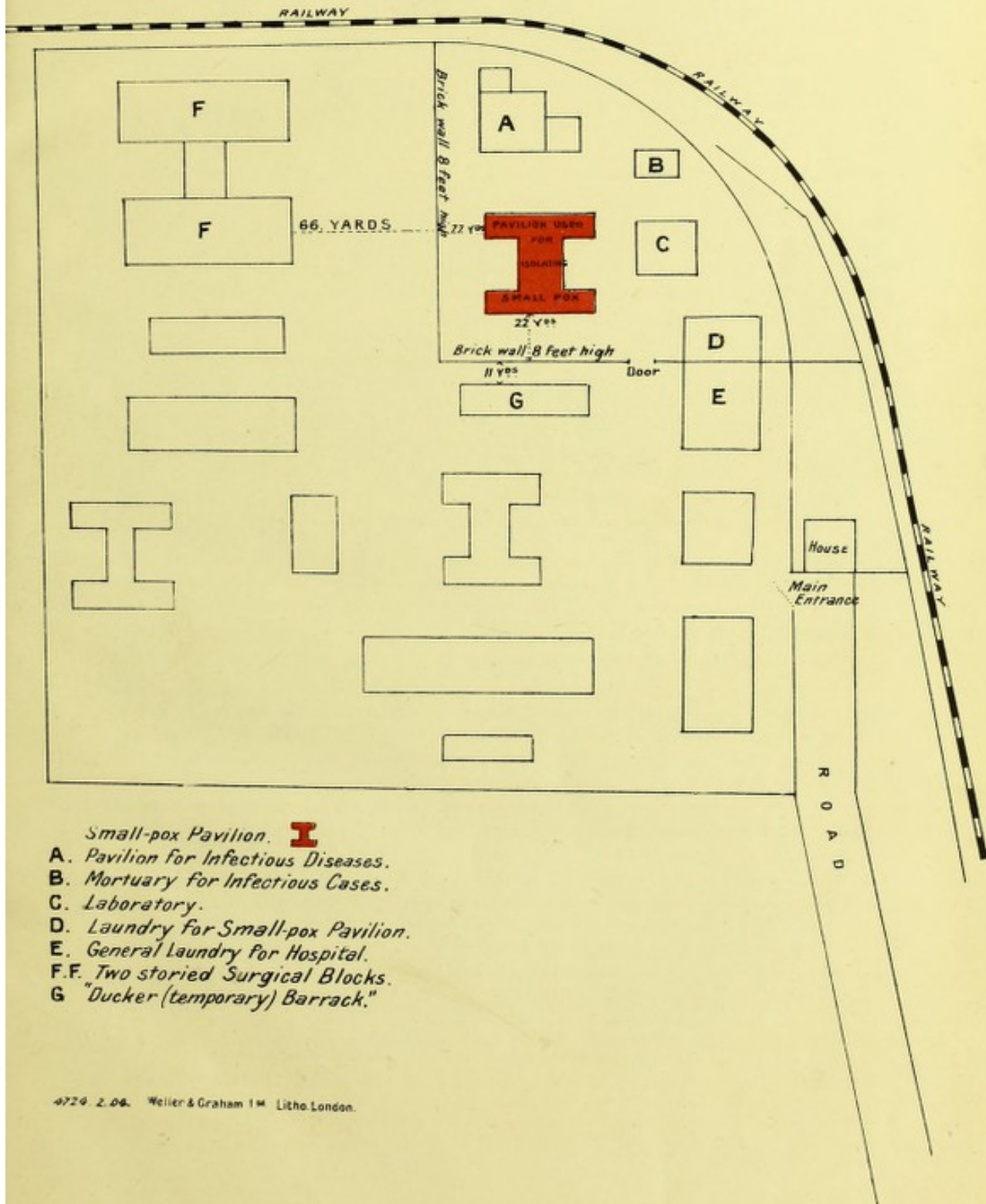
† See also Pockenepidemie in Frankfurt a/M., von Geh. San. Rat., Dr. Grandhomme, Kreisphysicus in Frankfurt a/M. Zeitschrift für Medizinalbeamte, Heft 4, 1901.



# FRANKFORT-ON-MAIN.

## *Rough Sketch of the Site of the* GENERAL HOSPITAL

*Showing the portion (enclosed by a wall) on which  
Small-pox Cases are isolated.*



*Small-pox Pavilion. **I***

- A. Pavilion for Infectious Diseases.
- B. Mortuary for Infectious Cases.
- C. Laboratory.
- D. Laundry for Small-pox Pavilion.
- E. General Laundry for Hospital.
- F.F. Two storied Surgical Blocks.
- G "Ducker (temporary) Barrack."











Map of  
The Northern Portion of the Town of  
**WIESBADEN.**  
Showing site of the GENERAL HOSPITAL and position  
of the Small-pox Pavilion thereon.



SCALE 1:10,000.  
100 50 0 100 200 300 400 METER.

- Site of General Hospital
- Small-pox Pavilion.
- Public buildings
- Other buildings
- Public grounds
- Electric Tramways.
- Parks
- Woods
- Gardens



Hospital in a pavilion, which, though used commonly for other diseases, is emptied for the reception of small-pox as soon as a case of that malady is notified. This pavilion is subdivided into two large and several smaller wards for classification of the cases. A second pavilion adjoining can be used also for small-pox if the outbreak assumes larger proportions. There is a separate laundry and mortuary for the portion of the hospital set aside for infectious diseases, and the part of the site on which the small-pox cases are isolated is surrounded by a brick wall some 7 or 8 feet high, with a single entrance, which, when small-pox is being treated on the site, is kept locked; so that in this way the small-pox pavilion is shut off from the rest of the hospital. The nurses and others of the staff detailed for service in connection with the small-pox patients are at once re-vaccinated, and the Assistant Medical Officer in charge, as well as the nurses, lives within the walled-in area. This, I was informed, is deemed necessary solely in the interests of those patients in the general hospital who may have, for one or another reason, escaped statutory vaccination or re-vaccination. It is known to the medical staff that when foreigners, such as Russian Poles, Italians, or Austrians are admitted to the general wards for medical or surgical treatment they are frequently found not to have been vaccinated or re-vaccinated.

I conferred with Professor von Noorden, Chief Medical Officer to the Frankfort Hospital, and learned from him and from his senior assistant that so far as their experience went no spread of small-pox had taken place from the isolation pavilion to any member of the staff, or to any other person in the hospital. They had complete confidence in the vaccination and re-vaccination already undergone by the general population to prevent the spread of small-pox to patients when cases of this disease were admitted to the general hospital.

It may be added that the portion of the hospital site which is enclosed by the brick wall is somewhat triangular in shape, and is at its base 130 metres long, and is of similar length. The railway line forms, roughly speaking, the third side of the triangle. Within about 200 feet of the small-pox pavilion is a large two-storeyed block for surgical cases. (*See diagram appended.*)

I had the advantage of an interview with Geheimer Sanitätsrat Dr. Grandhomme, who is Medical Officer of Health for the City of Frankfort-on-Main, and who is also one of the public vaccinators for the town. Dr. Grandhomme assured me that he had every confidence in the method adopted in Frankfort for isolating small-pox cases; these cases, he added, were, in almost every instance, the result of foreign infection, imported into the city. He placed statutory vaccination and re-vaccination in the forefront of all current protective measures; without these he would have little hope of checking the onset of an epidemic.

*Wiesbaden* (estimated population, 92,301).—The General Hospital is situated on high ground to the north of the town, but is practically surrounded by houses. It has accommodation for 300 patients in six pavilions or ward blocks, some of which are two-storeyed. The arrangement of these blocks, and of the administration buildings, mortuary, laundry, &c., can be seen on the appended map. The provision for small-pox consists of a wooden pavilion with 16 beds in two wards. This pavilion is only 13 yards distant from the nearest hospital block, containing some 40 beds, and is about the same distance from the boundary wall. When last used for isolating 12 cases of small-pox, about 11 years ago (since then there has been no small-pox in Wiesbaden), it was administered as regards cooking and nursing from the same buildings as the rest of the hospital, and no extension of infection occurred from the pavilion to anyone in the hospital or in its neighbourhood. All persons whose duties brought them in relation to the small-pox pavilion were re-vaccinated.

At the time of my visit the pavilion was occupied by non-infectious medical cases.

At an interview with Professor Weintraud, the Chief Physician to the hospital, and with his senior assistant, Dr. Wolff, both assured me that



they placed their chief trust in statutory vaccination and re-vaccination to prevent the spread of small-pox, and that it would be impossible to isolate such cases on the site of the Wiesbaden General Hospital had not the population undergone vaccination and re-vaccination.

Immediately opposite the small-pox pavilion, on the other side of the street, is a very large public elementary school from which, at noon, one day while passing, I saw hundreds of children trooping forth into the street. To the south-east of the hospital site, and facing it, is a large orphanage. In conversation with Professor Weintraud I learned that he had advised the Municipal Authorities that there would be advantage in procuring a site outside the town, where cases of plague, cholera or small-pox might in future be isolated. He explained to me that as regards small-pox this advice was not given by him owing to fear that this disease would spread if treated on the old hospital site, but with a view of meeting possible objections of people who might demur to be themselves removed, or to allow their relatives to be removed, to hospital while suffering from illness such as enteric fever, on account of the presence of small-pox cases in some adjacent pavilion on the grounds of the General Hospital. He affirmed that it was solely to meet this sentimental objection that he had suggested the provision of another site, which while held in readiness for exotic disease could be utilised for small-pox. Till that new site was provided he would continue to treat small-pox cases at the General Hospital, and he intended, if such cases occurred, to erect at once a small *Ducker* hut in the grounds in which to accommodate them. The wooden pavilion formerly used he regarded as not now suitable.

Professor Weintraud in emphasising his perfect confidence in statutory vaccination and re-vaccination as a prophylactic against small-pox, gave me in illustration several instances which had come under his own observation. Among them, he mentioned the following. While resident medical officer some years ago at the Berlin Charité Hospital, two small-pox cases were admitted for isolation. For some time there had not occurred opportunity for demonstrating to the students the clinical characters of small-pox. Accordingly he was deputed by the chief physician to instruct in the diagnosis of small-pox some 260 students, in detachments, by the bedside of these two patients. As vaccination and re-vaccination are compulsory in Germany, it was not thought necessary to make inquiries as to this matter in regard of each student. But at the end of 12 days two students out of the 260 fell ill with the initial symptoms of small-pox, and each passed through an attack of the disease. Both were Italians who had not been re-vaccinated.

*Mainz* (estimated population 88,025) is a town on the Rhine of importance from the military point of view. It is surrounded by fortifications. The older portions of the town are crowded upon area in narrow streets, as is usual in old-fortified towns. The General Hospital (Rockhus Spital) is situated in the old town, and some of the hospital buildings overlook narrow streets. On inquiring at the hospital as to provision for isolation of small-pox cases I was informed that although cases of the ordinary infectious diseases continue to be treated at the Rockhus Spital, a site on the outskirts of the town had been obtained and some buildings erected thereon some 11 years ago for the reception of small-pox patients. Having received directions as to the precise locality where this subsidiary hospital was situated (on the Gonsenheim heights) I visited the place. The site forms part of the grounds of a florist and nursery gardener, and lies on a slope crowned by a line of forts, and which stretches downwards towards the railway which runs at the foot of the incline. It is separated from the line of forts by a high road, and is just within the city boundary; it is surrounded by an ordinary wooden garden fence presenting no great difficulties to trespassers who might wish to gain access to the site, and there are footpaths along the outer side of the fence, on two sides of the enclosure. The florist, with his wife and family, occupies a cottage at the upper end of the site; lower down are some greenhouses and garden plots, and towards the foot of the slope stand the hospital buildings. There are three pavilions for the sick, providing together a total of 40 beds, with, in addition, several small administrative buildings, including kitchen and laundry, as well as sleeping accommodation



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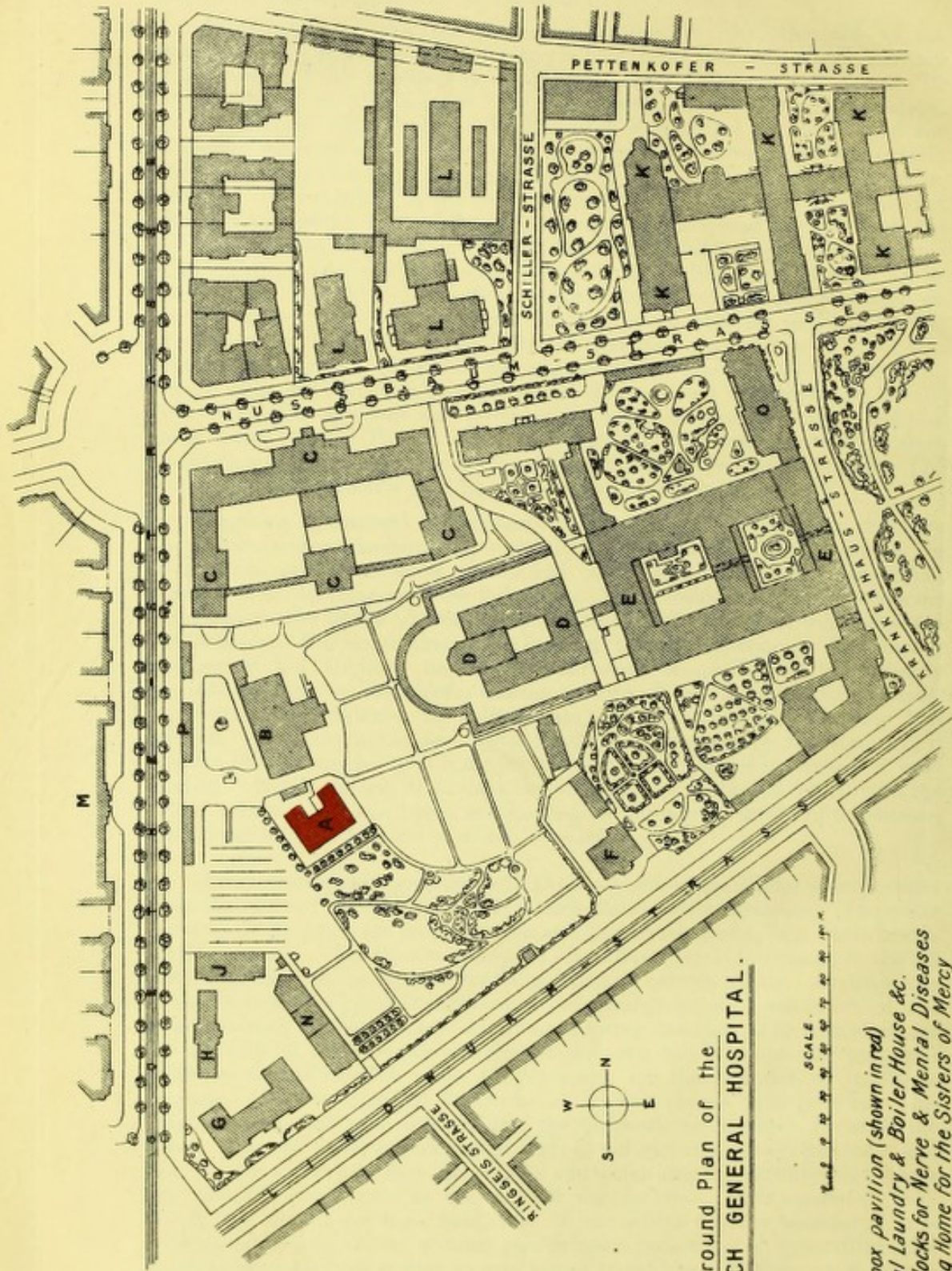
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# MUNICH.



Ground Plan of the  
**MUNICH GENERAL HOSPITAL.**

- A. Small-pox pavilion (shown in red)
- B. General Laundry & Boiler House &c.
- C. New blocks for Nerve & Mental Diseases
- D. Nursing Home for the Sisters of Mercy
- E. Main Medical Block
- F. Residence of Professor von Bauer, Chief Medical Officer
- G. Children's Wards
- H. Scarlet fever pavilion
- J. Diphtheria

- L. Medical school buildings
- M. Deaf & Dumb Institute
- N. Central Vac. Lymph Institution
- O. Administration & Dispensary



for the Sisters of Charity who take charge of the sick. The florist, who acts as caretaker, informed me that the site was acquired in 1892 at the time when cholera was epidemic at Hamburg, and when there was fear that the disease might spread thence to other parts of Germany. On medical advice, the hospital pavilions (one-storeyed buildings) were erected with the intention of receiving any cholera cases that might occur; since, these pavilions have been regarded as forming permanent accommodation for any small-pox cases which may appear in the town. As a matter of fact no cholera cases have ever been treated on the site, nor, as far as my informant could remember, any cases of small-pox. A single suspected case of the latter disease, which, however, after some days observation was found not to be small-pox, was brought to this hospital about two years ago. On that occasion the florist and his family were revaccinated by the medical officer of health as soon as the suspected small-pox case was admitted.

At present the hospital pavilions are used for the accommodation of convalescent female medical cases of a non-infectious nature, whose convalescence is deemed to be hastened by their removal from the old town hospital to the comparatively rural conditions of this suburban site.

In the event of a genuine small-pox case being brought to this Gonsenheim hospital, not only would, I was informed, the precautionary measure of revaccinating the nurses and other persons whose duty brought them in relation with the hospital, be adopted, but all the convalescent patients would be at once sent away to their homes.

It is noteworthy that Mainz is the only town in Germany visited by me where provision for the isolation of small-pox has been made on a separate site. In one or two other instances, it is true, it was stated that proposals had been made to obtain outside the town a site where small-pox patients could be treated at a distance from the general hospital; but at the date of my visit nothing had been actually done in this direction, the only accommodation provided for such cases was still on the sites of the general hospitals.

At Mainz, as has already been mentioned, I had not the opportunity of conferring with any members of the hospital medical staff, and had consequently to content myself with the information supplied to me by lay members of the administration.

#### BAVARIA.

*Munich*, the capital of the kingdom of Bavaria, had at the end of 1903 an estimated population of 544,714. Its general hospital is situated near the centre of the city (see map appended) and has accommodation for 1,320 patients, medical and surgical, as well as for persons suffering from infectious diseases, such as scarlet fever, diphtheria, and small-pox. The 1,320 beds are distributed in a number of blocks and pavilions; and the arrangement of the hospital and administrative buildings upon the site is shown on the appended plan.\*

The single pavilion which is reserved for the isolation of small-pox cases contains 14 beds. These are in eight small apartments, four of which contain one bed, two contain two beds, and two three beds. The pavilion is divided into two equal parts, each completely shut off from the other and having separate entrance. Each division has accommodation for a nurse and is provided with a small kitchen, a bath room, a lavatory, and a w.c. Upon occasion "contacts" have been accommodated in one division of the pavilion while the small-pox cases were being isolated in the other. This pavilion is surrounded by an open fence, eight or nine feet high, through which it would be easy

\* I am indebted for this plan to the Chief Director of the lay administration of the Munich General Hospital.



to pass the hand, and on the top of which is a row of barbed wire to prevent anyone climbing over it. The fence is only about nine feet from the pavilion.

The building in closest relation with the small-pox pavilion is the hospital laundry, which at its nearest point is only about 17 yards distant. To the south of the small-pox pavilion and situated from 55 to 70 yards away, are several other pavilions in which cases of scarlet fever, diphtheria, &c., are isolated. About 80 yards distant, but surrounded by a high wall, is the home of the Sisters of Mercy, to whom is entrusted the nursing of the patients in the hospital. The block about 90 yards to the north of the small-pox pavilion and the laundry is of recent construction and has been erected for the reception of cases of nervous and mental disease. The arrangement of the other buildings on the site will be seen on referring to the plan. It may be added that the small-pox pavilion stands about 50 yards from the boundary wall which abuts upon the roadway, on the other side of which is situated a large institute for the deaf and dumb. From this description it will be seen that the small-pox pavilion in the Munich General Hospital grounds is encompassed at no great distance by buildings accommodating a considerable number of persons. I had an interview with Professor von Bauer, the Chief Medical Officer of the medical section of the hospital, and his chief assistant, Dr. Hermann Kerschensteiner, and from these gentlemen I learned that when a case of small-pox is admitted to the pavilion it is the rule to re-vaccinate the medical nurses, though not those in the surgical and other parts of the hospital. The medical assistant who is detailed for attendance on the small-pox case is also re-vaccinated as a precautionary measure, although he may have been repeatedly re-vaccinated on previous occasions. I was assured that chief reliance was placed upon the fact that the persons coming into contact with the case had been all re-vaccinated; that practically all persons in the hospital and neighbourhood had submitted to the statutory vaccination and re-vaccination required by the German Law of 1874. It would be, these officers informed me, impracticable to isolate small-pox in the pavilion if the resident population in the hospital and neighbourhood had not acquired immunity to the disease through vaccination and re-vaccination. In no instance within the knowledge of these two gentlemen had infection spread from the small-pox pavilion to anyone in the hospital or its vicinity.

This small-pox pavilion at Munich is not used, as in most of the other German towns I visited, for the accommodation of other medical cases when not required for small-pox. It remains in charge of an elderly servant who keeps it clean and in readiness for use at a moment's notice. It can hardly be said to be administered, when in use for small-pox, entirely apart from the general administration of the hospital; for although there is a small kitchen where cooking is done, part of the food must necessarily come daily from the central kitchen: Moreover, while the two nurses in charge of the sick sleep in the special pavilion, the medical attendant occupies quarters in the general hospital. Again, the soiled linen, &c., after being steeped in a disinfecting solution is sent to the general laundry to be washed before being returned to the pavilion. There is nothing to prevent persons who are walking in the hospital grounds from approaching close to the fence which, as has been said, is only nine feet from the small-pox pavilion.

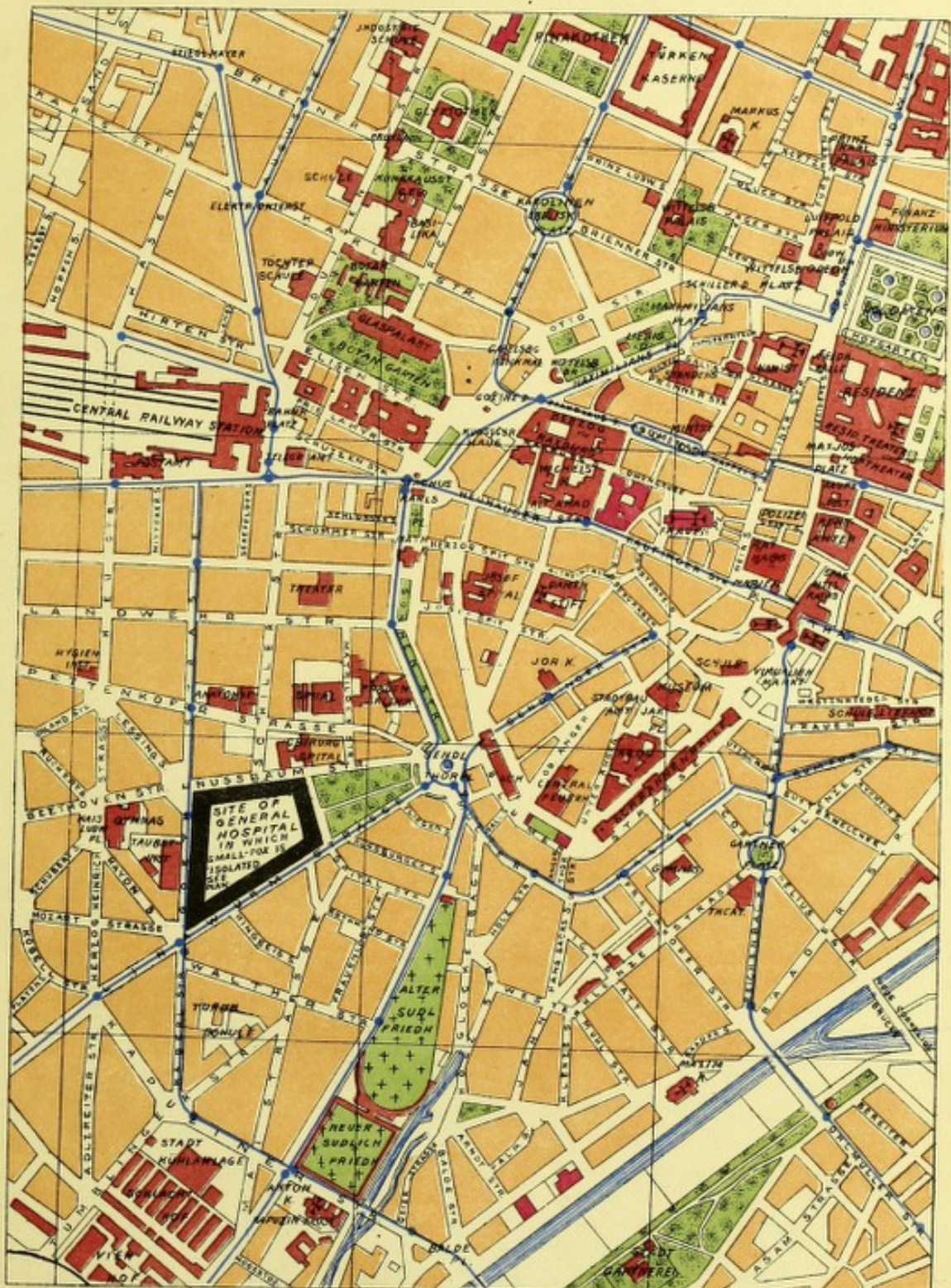
From the annual official reports "Medizinal-Statistische Mittheilungen aus dem Kaiserlichen Gesundheitsamte" for the years 1896 to 1902 I find that only seven cases of small-pox have occurred in Munich during that period, viz., none in 1896, four in 1897, one in 1898, one in 1899, one in 1900, none in 1901, and none in 1902. Up to the end of November, the date of my visit to Munich, there had been no cases during 1903. So that in eight years Munich had required the isolation of only seven cases of small-pox, four of which occurred in one year.

*Nuremberg* has an estimated population of 294,819. The general hospital here, which has accommodation for 946 patients, is situated on a site of 10 hectares in the suburb of St. Johannis, to the north-west of the town. The buildings are





# MUNICH.


Map of the Central portion of the City of Munich showing the site of the General Hospital on which cases of small-pox are isolated.

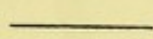


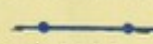
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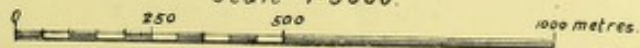
 Gardens & Laid-out grounds.

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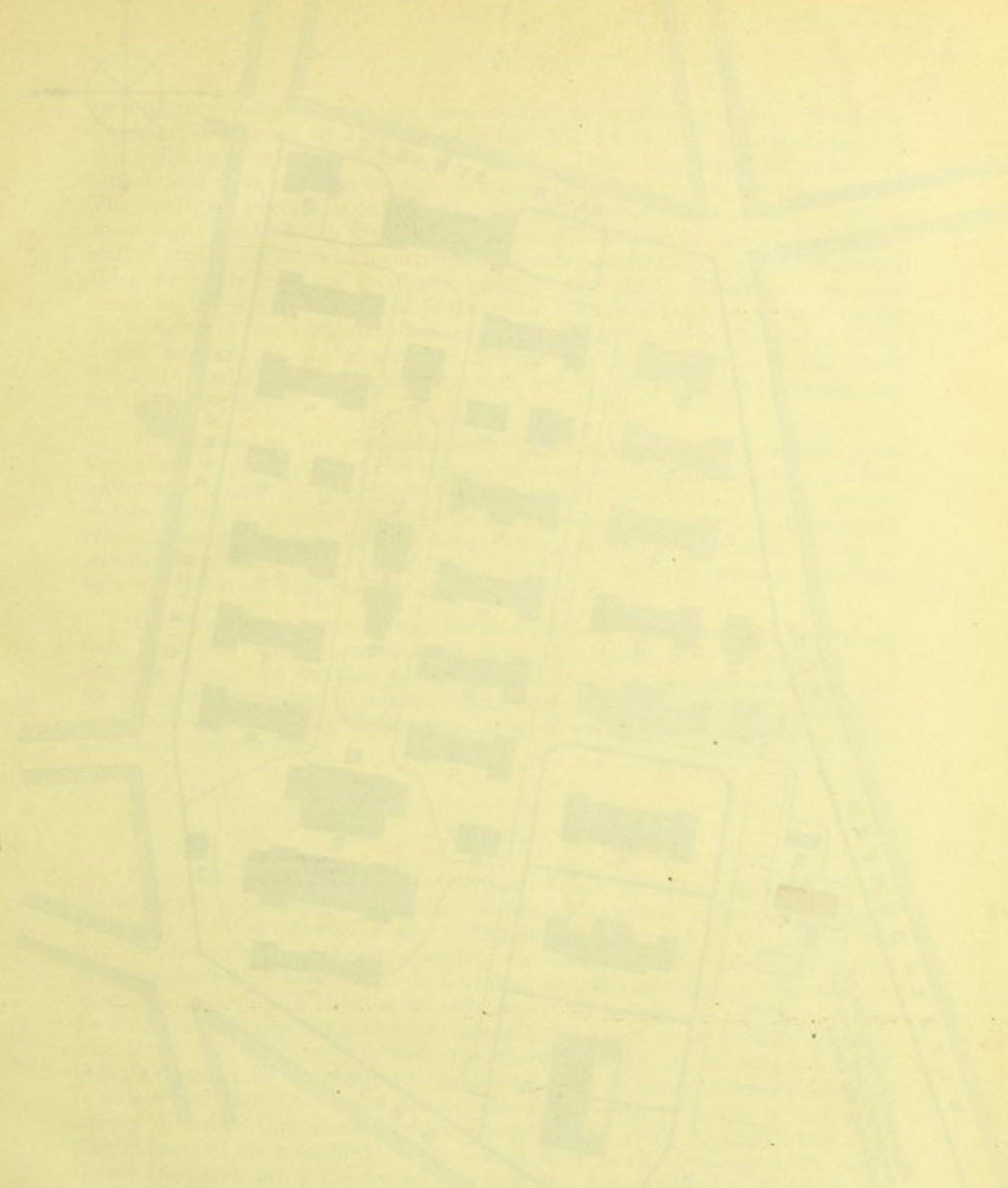




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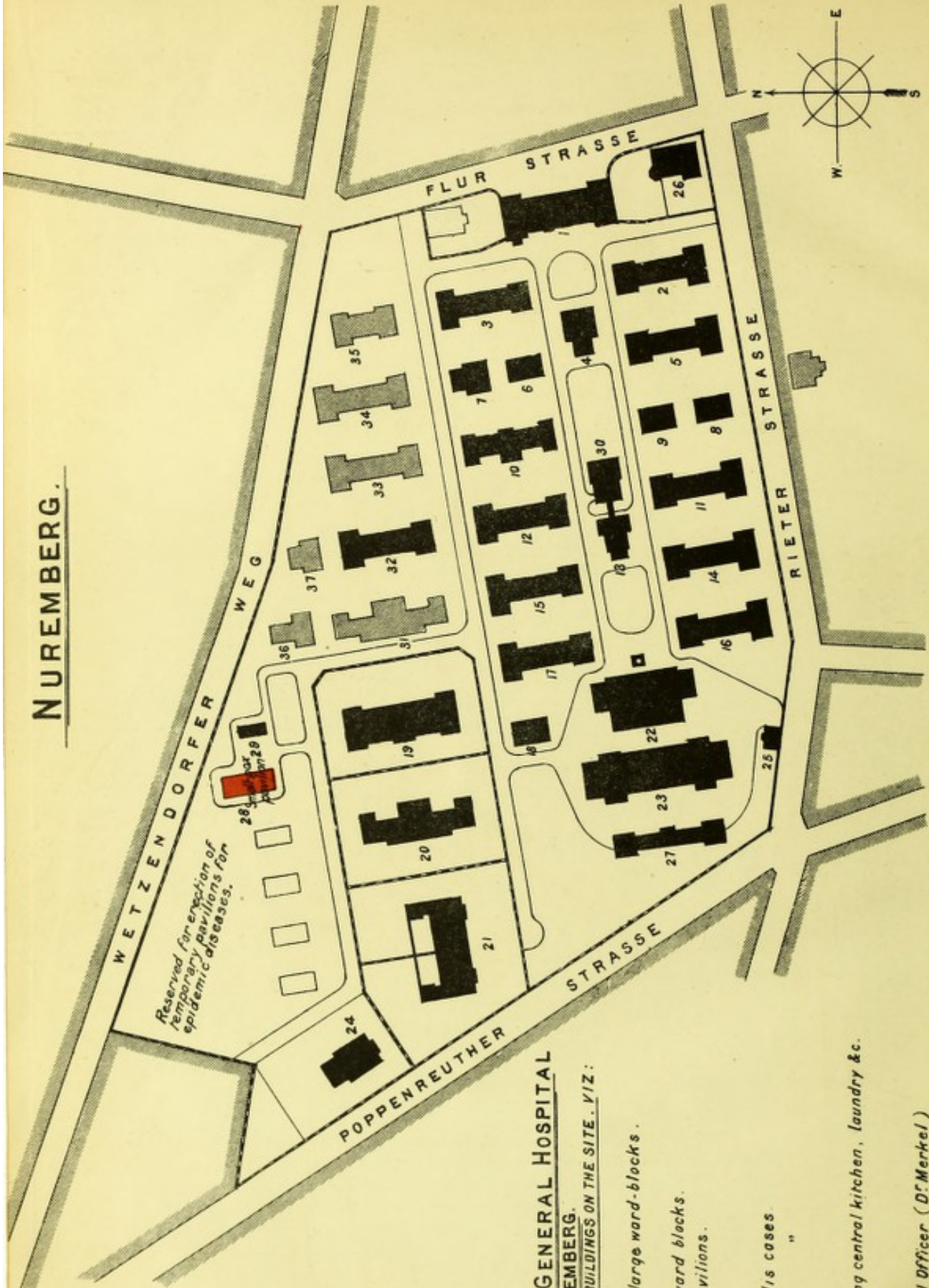
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# NUREMBERG.



Reserved for erection of temporary pavilions for epidemic diseases.

## GROUND PLAN OF THE GENERAL HOSPITAL AT NUREMBERG.

SHOWING DISTRIBUTION OF THE BUILDINGS ON THE SITE. VIZ :

- 1, Administration.
- 2, 3, 12, 14, 15, and 32 two storied large ward-blocks.
- 4, Operating theatre.
- 5, 11, 16 and 17, One storied large ward blocks.
- 6, 7, 8, 9, and 18, Detached small pavilions.
- 10, Special ward block.
- 13, Bathing establishment.
- 19, Special block for male Syphilis cases.
- 20, Ditto Ditto for female " "
- 21, Block for Mental diseases.
- 22, Boiler-house.
- 23, Administration buildings containing central kitchen, laundry &c.
- 24, Mortuary.
- 25, Gatekeeper's Lodge.
- 26, Residence of the Chief Medical Officer (Dr. Mentel)
- 27, Workshops &c.
- 28, Pavilion (in red) for epidemic diseases including Small-pox, 29, Small Ducker temporary pavilion 30, Medicin-Mechanical Institute 31, 33, 34, 35, 36 & 37 future extension building sites.

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of modern construction, having been opened as recently as 1897. Small-pox provision is afforded by a single pavilion (No. 28 on the appended plan\*); this building contains 12 beds in two wards. There is accommodation for two nurses, and there is also a kitchen, a scullery, two bath rooms, and two closets. The small-pox pavilion is only about 14 yards from the boundary wall, which is about eight feet high; in the opposite direction it is about 27 yards from another wall of similar height, which surrounds the two syphilis blocks, which are distant about 44 yards from the small-pox pavilion (*see plan*). There is some open space to the west of the small-pox pavilion, on which temporary buildings for the isolation of any epidemic disease could be speedily erected in case of need. I was informed by Medizinalrat Dr. Merkel (who is the Director of, and Chief Physician to, the general hospital) that there had been no small-pox in Nuremberg for about 11 years.

In the event of any outbreak occurring, the nurses† detailed to wait upon the patient or patients would be re-vaccinated, as well as the assistant medical officer who would be designated for attendance. There would be no general re-vaccination of the other nurses, officials, or patients in the rest of the hospital, reliance being placed on the previous vaccination and re-vaccination which is required by the law. The administration of the small-pox pavilion could not be entirely cut off from the rest of the hospital.

Dr. Merkel had no doubt that the immunity of the residents of Nuremberg from small-pox was due to the statutory vaccination and re-vaccination of the population. At the date of my visit the small-pox pavilion was being used for the accommodation of non-infectious medical cases; but in the event of a small-pox case occurring these other patients would be at once removed and accommodated elsewhere.

#### SAXONY.

*Dresden.*—The capital of the kingdom of Saxony had at the end of 1903 an estimated population of 518,405. It has two general hospitals, one comparatively old, the other quite new. The former is situated to the west of the city, in the suburb of Friedrichstadt; the other, recently opened, is in the eastern suburb of Johannstadt. It is at the Friedrichstadt Hospital that cases of small-pox occurring in Dresden are isolated. This hospital has accommodation for 1,058 medical and surgical cases, including 160 beds for infectious diseases. The latter are distributed in two two-storeyed blocks, one of which, with 80 beds, is reserved for scarlet fever; the second, used for other infectious diseases, is subdivided into four equal parts, each with a separate entrance and each having 20 beds. One of these subdivisions is kept ready for small-pox (*see plan of hospital site appended*). The scarlet fever block stands about 22 yards distant from and facing the second block, in the end subdivision of which the small-pox cases are isolated. The back windows of the small-pox wards face the boundary wall of the hospital site about 33 yards distant, and on the opposite side of the street and facing the small-pox wards is a line of three-storeyed houses.

When I visited Dresden, I conferred with Professor Adolf Schmidt, Medical Director and Chief Physician to the Friedrichstadt Hospital, and he kindly gave me detailed information as to the procedure which would be followed if a case of small-pox were admitted. He stated that the nurses and the assistant medical officer who would attend to the sick would be at once re-vaccinated. The nurses and doctor would have sleeping accommodation provided in the small-pox block, but food for them and their patients would have to be brought daily from the central kitchen. I was also told that if a case of small-pox were admitted, a temporary wooden closed fence, about 7 ft. high, would be erected round the

\* For this plan and for other information I am indebted to a report on the Nuremberg General Hospital by Herr Anton Schwab, Krankenhausverwalter, published at Nuremberg in 1903.

† The nursing at this hospital is mainly carried on by the Evangelical Lutheran Deaconesses.



outside of that portion of the block used for isolating the sick persons, so that visitors, or convalescents from other parts of the hospital, could not approach near to the small-pox building.

Professor Schmidt stated that his chief reliance against small-pox was placed on statutory re-vaccination, and that if the population residing in and around the hospital had not been rendered immune to small-pox by compulsory vaccination and re-vaccination it would be impracticable for cases of that disease to be treated on the site of the general hospital; that the authorities would be compelled to seek another site for the purpose, in the country, away from the town population. There was no record of small-pox having spread from the pavilion to the rest of the hospital or to houses in the vicinity. But he had as yet had had no small-pox cases brought to the hospital since he had been appointed Director and Chief Physician. I was informed that there had been no deaths from small-pox in Dresden for the last 10 years.

In 1872 I myself visited the Friedrichstadt Hospital in Dresden at the time when a severe epidemic of small-pox had just passed over the city, and I then saw a number of small-pox cases being treated in extemporised pavilions within the hospital grounds. At my recent visit I was informed by a medical man of position (Hofrat Dr. Oscar Battmann, a prominent member of the City Council), who had practised in Dresden for more than 30 years, and in whose company I had visited the Dresden small-pox cases in 1872, that since the passing of the German law of 1874, which made re-vaccination as well as vaccination compulsory, there had been almost no small-pox in Dresden. Such cases as had occasionally been met with were in the persons of Austrians from Bohemia, the frontier of which is only some 30 miles from Dresden. There is no compulsory re-vaccination in Austria.

*Leipzig* has an estimated population of 484,838. Small-pox cases, when they occur in Leipzig, are isolated at the general hospital (St. Jakobs Hospital) which is situated in the south-west suburbs of the town, close to the Bavarian Railway Station. The site has plenty of open space round it; and there is accommodation in the hospital for 1,450 patients, small-pox being treated in a pavilion containing 20 beds distributed in three wards, each of which has a separate entrance from without. This pavilion is situated only about 18 yards from an adjoining pavilion on one side, and about 20 yards from another pavilion on the other side (see plan of site appended). When the pavilion is to be occupied by a small-pox case the nurses, as well as the assistant medical officer, who are to be in attendance on the patient, are re-vaccinated. Their food has to be brought to the pavilion from the general kitchen and left at the entrance. The nurses have sleeping accommodation in the pavilion. The assistant medical officer who has his quarters in the main administrative building, is required to wear a mantle over his clothing when he visits the wards, and is further required to remain at least half-an-hour in the open air after leaving the small-pox pavilion before he enters any of the other hospital or administrative buildings. When students (*Leipzig* is a University town) visit the small-pox pavilion they must previously submit to re-vaccination, whether or not the operation has been already performed on them. On the hospital site, enclosed by a closed wooden fence and situated to the east of the rest of the establishment, are four pavilions, accommodating 180 patients, occupied at present by persons suffering from tuberculosis of the lungs. I was told that if a small-pox outbreak in Leipzig threatened to assume considerable proportions, these tuberculosis patients would be at once sent to their homes, and that the four pavilions within the closed fence would be employed for isolation of the small-pox cases. During the eight years ending December, 1901, there had only been eight cases of recognised small-pox treated in the Leipzig Hospital; two of them were Russians and four were Austrians.

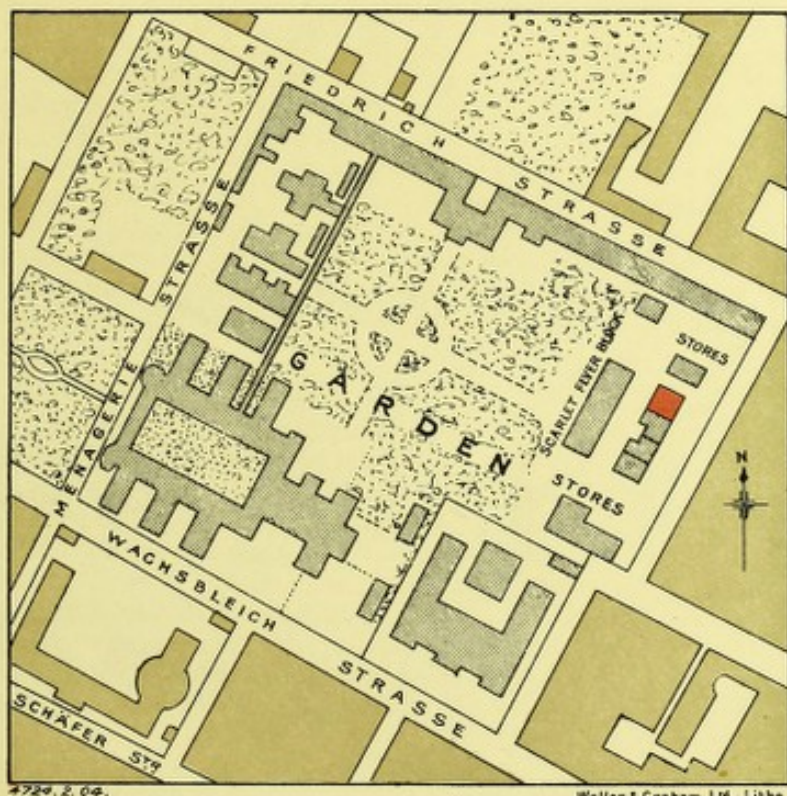
I was informed that small-pox had not been known to spread from the small-pox pavilion to pavilions adjoining it, nor had the disease attacked any person on the hospital site or those living in houses adjoining it.

When I visited this Leipzig General Hospital I had the advantage of an interview with Professor Curschmann (Geheimer Medicinalrat) Director of the

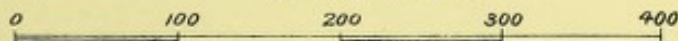



# DRESDEN


## DIAGRAM PLAN OF THE TOWN HOSPITAL





Scale, Metres.



 *Hospital Buildings*

 *Small-pox Ward*

 *Other Buildings*

 *Gardens & Ornamental Grounds.*











# LEIPZIG.

*Diagram Sketch of the Site of the Leipzig General Hospital (Städtisches Krankenhaus - St. Jakob) and its surroundings.*



*The small-pox pavilion is shown in red thus: ■. The 4 pavilions within the red lines are those now enclosed for the isolation of Tuberculous patients, & which would be used upon occasion for small-pox if any considerable epidemic occurred in Leipzig.*

*To the North West of the Hospital site are situated the Buildings of the Medical School of the University of Leipzig.*

*The large enclosed space to the East of the Hospital is a public Cemetery. And on the West of the site is one of the town Railway Stations. There is plenty of open space round about this Hospital site.*



Medical Clinic and Senior Physician to the St. Jakobs Hospital. From him I learnt generally that he placed re-vaccination in the first rank as a prophylactic against the spread of small-pox, being of opinion that isolation of cases of this disease could not be carried out, in the manner adopted in Leipzig, without antecedent general vaccination and re-vaccination of the community. His view was that isolation alone would not suffice, but that, surrounded by a protected population, small-pox could be economically and efficiently isolated on the site of a general hospital. I also learned that Leipzig is regarded as somewhat specially exposed to the danger of importation of small-pox by Russians and other foreigners, as it is a great distributing centre for the fur and other trades; its fairs and business houses are visited by these foreigners; and merchandise fabricated in infected dwellings, or by infected persons is believed to be, at times, sent direct to Leipzig.

#### WÜRTTEMBERG.

*Stuttgart*, the capital of the Kingdom of Württemberg has an estimated population of 191,645. Accommodation for small-pox cases as also for cases of diphtheria and scarlet fever is afforded at the Katharine Hospital (see map appended). The total number of beds provided for medical and surgical cases at this hospital is 700; and these are distributed among a number of two-storeyed ward blocks and one-storeyed pavilions. The small-pox pavilion is a *Ducker* hut or "barrack" which is divided into two wards, each with 6 beds; there is a room for a nurse, also a small kitchen, a bath-room, and two closets. This "barrack" which, when I saw it, was a little out of repair, as is almost unavoidable in view of the material of which it is constructed and the length of time it has been erected, stands close to the northern boundary of the hospital site. The building nearest to it is a block containing 30 beds in which syphilitic cases are treated, and which is situated only 4 yards away from the gable of the small-pox pavilion; a two-storeyed surgical block containing 50 beds is, at its nearest point, only 8 yards from the small-pox pavilion, which again is only about 11 yards from the wire fence which separates the Katharine hospital site from the grounds of the Stuttgart Lying-in Institute. This midwifery school and hospital has accommodation for 67 patients and 50 resident midwife-pupils. It is a three-storeyed building standing little more than 30 yards distant from the *Ducker* "barrack" in which small-pox cases have to be isolated.

I was unfortunately unable to see Ober-Medicinalrat Dr. von Landenberger, the Chief Physician to the Katharine Hospital when I was at Stuttgart, but I conferred with the Principal Assistant Medical Officer, Dr. Hartmann, who showed me over the hospital and gave me all the information I required. I learnt from him that there had been no cases of small-pox in Stuttgart for 6 years; the last person who suffered from the disease was a foreigner, a Russian. In Dr. Hartmann's opinion statutory re-vaccination was the main measure for preventing spread of small-pox; that without it isolation of small-pox cases on the site of the Katharine Hospital would be impracticable. Owing to the general immunity conferred upon the population by obligatory vaccination and re-vaccination small-pox was, in his view, unlikely to spread when brought to the hospital. Care would, of course, be taken whenever a case was admitted, to repeat the re-vaccination of nurses and others whose duties brought them into close relation with the case or cases isolated in the *Ducker* barrack. Dr. Hartmann knew of no instance where a small-pox patient had spread infection when brought to the Katharine Hospital for isolation. He admitted that the provision for small-pox was of a somewhat rudimentary kind, but considered that it had proved sufficient for the wants of Stuttgart.

Such cases of small-pox as occur in the kingdom of Württemberg are found, I learnt, usually among foreigners; the last cases reported were among a tribe of Bosnian gypsies who were travelling through the country with performing bears.



There has been no death from small-pox in the whole kingdom of Württemberg since 1893, when two fatal cases were certified; and in the eight years preceding 1893, *i.e.*, from 1885 to 1892 inclusive, there occurred only three small-pox deaths, *viz.*, two in 1886, and one in 1888. Thus in 18 years in Württemberg (from 1885 to 1901), (see *Medizinal-Bericht von Württemberg für das Jahr, 1901, Stuttgart, 1903*), there were no more than five deaths from small-pox in a population now estimated at 2,183,000.

To the ten towns which I visited in the autumn of 1903 may be added another, *viz.*, Hamburg, which I visited unofficially earlier in the year. At Hamburg, which has an estimated population of 747,167, small-pox cases are treated at the large new General Hospital at Eppendorf, which is situated in the suburbs. At this hospital there is accommodation for 2,000 patients, including medical, surgical, and infectious cases. Small-pox is treated in a pavilion in no way shut off by fence or wall from the other pavilions; is situated moreover close to one of the open roadways running through the site. On inquiry I was told that no trouble had been experienced through the spread of small-pox from this pavilion to persons living on the hospital site. Confidence is placed in statutory vaccination and re-vaccination to protect the patients in the hospital, while members of the staff who had to come into direct relation with the sick were submitted to further re-vaccination.

From the account above given of the methods employed in Germany for isolating small-pox it will be obvious that the general plan followed differs markedly from that employed in this country. Almost always, in Germany small-pox cases are isolated on the site of the general hospital, and, as often happens when the occurrence of small-pox in a given place is rare, the small-pox pavilion is not allowed to stand empty but is used for the accommodation of other cases, infectious or non-infectious. Untoward results to other persons, from bringing small-pox to the site of the general hospital for purposes of isolation and treatment have been seldom observed, and this, in Germany, is with one consent attributed to the protection which is conferred on the population by statutory vaccination and re-vaccination. Without these the German method, it is unanimously admitted, would break down.

It has been asserted in England by persons who have little or no faith in the value of vaccination as a prophylactic against small-pox, that the comparative immunity of the German nation from that disease is due, not to statutory vaccination and re-vaccination, but to the strict system of isolation of small-pox which is carried out in Germany. But the evidence given to me by the eminent medical men with whom I personally conferred, entirely refutes this assertion; and, one and all joined in the representation that compulsory vaccination and re-vaccination were Germany's great protectors against small-pox.

The description which I have given of the position of the small-pox pavilion at each of the hospitals visited in Germany shows conclusively that there is not in that country "strict system of isolation of small-pox" in the sense as we in England understand it. With one or two exceptions the pavilion is shut off in no way from the rest of the hospital, and there is no limitation in the number of persons residing within the several zones around the hospital. Nor is the administration of the small-pox pavilion entirely separate from the general administration of the hospital establishment. The German nation, therefore, by the agency of compulsory vaccination and re-vaccination is able to dispense with separate small-pox hospitals altogether. It is not necessary there to provide for small-pox a separate site nor separate administration. Germany is in this way freed from great expense, not to speak of the suffering and the inconvenience which fall upon the



# STUTT GART.



*Sketch Map of the North Eastern portion of STUTT GART.*

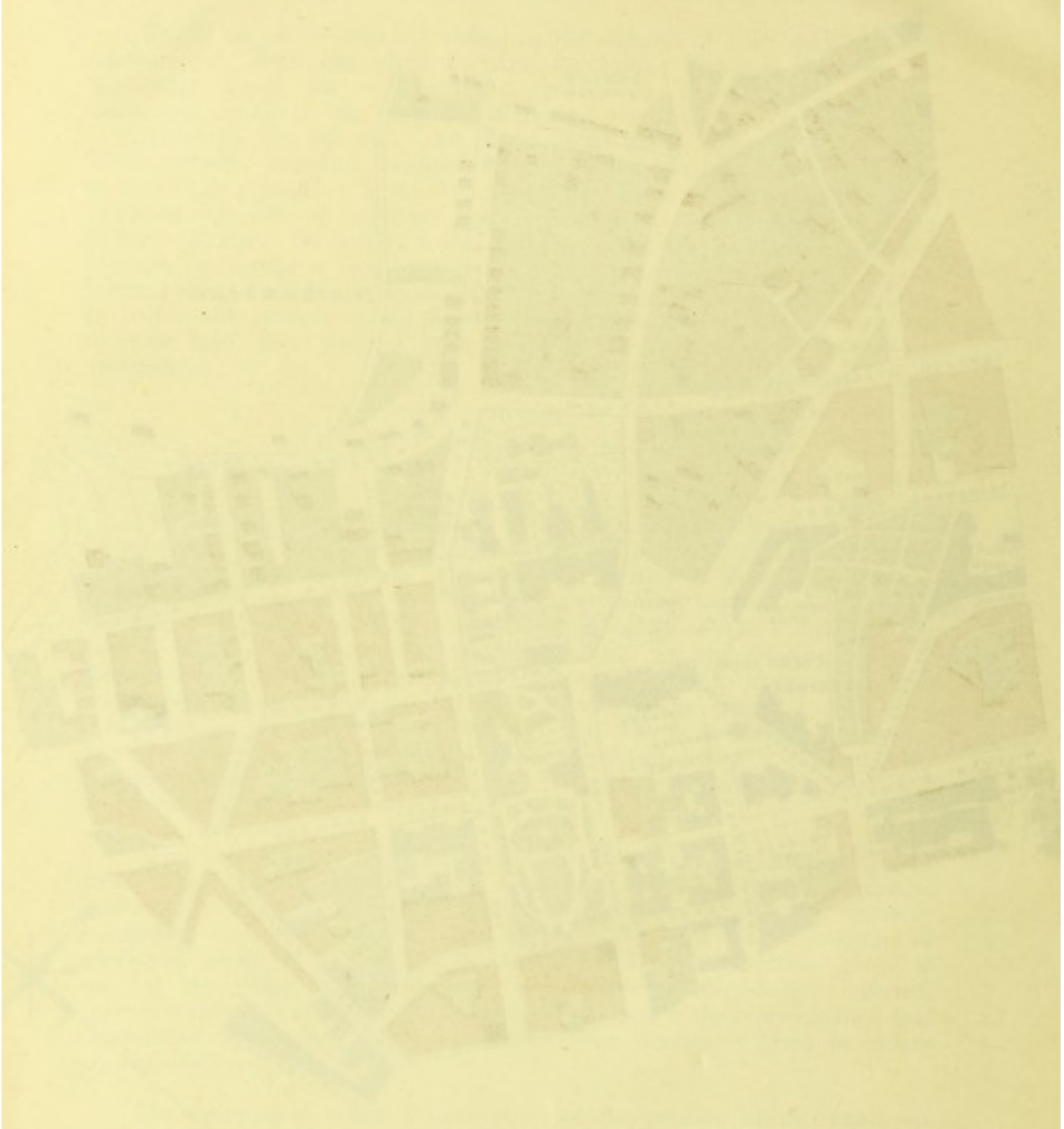
*Showing position of the Katharin Hospital on the site of which Small-pox Cases are isolated.*

*The Small-pox Pavilion is shown thus ■*

*The building immediately above the Small-pox Pavilion is the Lying-in-Institute.*



TRACCTUY 2



THESE PLANS AND SPECIFICATIONS ARE HEREBY  
APPROVED AND AUTHORIZED BY THE BOARD OF  
CITY ENGINEERS AND SURVEYORS OF THE CITY OF  
ST. LOUIS, MISSOURI, THIS 15TH DAY OF  
MAY, 1900.



English nation.\* But all this could not be achieved in Germany unless the Law of Compulsory Vaccination and Re-vaccination were thoroughly carried out.

Germany, indeed, would have less need even for small-pox pavilions on the sites of her general hospitals, than she has at present, were it not for the continual importation of small-pox by foreigners, or by German subjects returning from foreign countries.

Should Germany's Vaccination Law at any future time be carried out less efficiently than at present, she may not only have to face the inconvenience of having to isolate more small-pox cases, but may also be driven to provide separate accommodation for small-pox cases at a distance from populous areas, and to endure the further expenses of separate administration and the like.

R. BRUCE LOW.

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\* For purpose of comparison I append a statement of the requirements of the Local Government Board as to small-pox hospital sites provided by means of loans sanctioned by them. The following is an extract from the Memorandum "On the provision of Isolation Hospital accommodation by Local Authorities" (1902):—

*Hospitals for small-pox.*—In view of the frequently demonstrated liability of small-pox hospitals to disseminate that disease to neighbouring communities, and in order to lessen the risk of such occurrence, the Board require the following conditions to be complied with in the case of small-pox hospitals provided by means of loans sanctioned by them:—

1st. *The site must not have within a quarter of a mile of it either a hospital, whether for infectious diseases or not, or a workhouse, asylum, or any similar establishment, or a population of as many as 200 persons.*

2nd. *The site must not have within half a mile of it a population of as many as 600 persons, whether in one or more institutions, or in dwelling-houses.*

3rd. *Even where the above conditions are fulfilled a hospital must not be used at one and the same time for the reception of cases of small-pox and of any other class of disease."*

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