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# Impressions of a Young German Surgeon on American Surgery a Century ago with special emphasis on the Brothers Mayo

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1 *Background:*

2 *Ferdinand Sauerbruch (1875-1951), an innovative German surgeon, was head of the*  
3 *surgical departments of the University of Zurich (1910 to 1918), the University of Munich*  
4 *(1918-1928) and the University of Berlin (1928-1949). His relationship to the government of*  
5 *the National Socialists is controversial.*

6 *In 1908, Dr. Sauerbruch, then age 33, was an Associate Professor in the Department of*  
7 *Surgery at the University of Marburg and widely recognized as a rising star among German*  
8 *surgeons. That year, Dr. Sauerbruch received a letter from Rudolph Matas, a prominent*  
9 *American thoracic surgeon, and Chairman of the Section of Surgery and Anatomy of the*  
10 *American Medical Association. The letter invited Dr. Sauerbruch to address the June*  
11 *meeting of the American Medical Association on his surgical innovations. In particular, the*  
12 *interest of Matas and other thoracic surgeons was how to prevent the collapse of the lung*  
13 *when the chest was opened. Dr. Sauerbruch had developed a surgical chamber that could*  
14 *be evacuated so that the lung did not collapse from ambient air pressure. Matas, on the*  
15 *other hand, was exploring the utility of insufflating the lung by positive pressure via a tracheal*  
16 *route. In March 1908, Dr. Sauerbruch travelled by ship from Bremen, Germany to New York*  
17 *City. We have no record of his itinerary, but we know that he visited Baltimore (Johns*  
18 *Hopkins) and New York, including a tour of the luxurious facilities of the Rockefeller Institute*  
19 *for Medical Research that were just being constructed. At the Rockefeller Institute, Dr.*  
20 *Sauerbruch successfully demonstrated the use of his vacuum chamber during an operation*  
21 *on a dog, and in fact, left his vacuum chamber there where it could be used in experimental*  
22 *surgery. One of his last stops was a five day visit to the surgical practice of William James*  
23 *Mayo and Charles Horace James Mayo, brothers, in Rochester, Minnesota that he describes*  
24 *in considerable detail.*

25 *We have been unable to find a diary of his Dr. Sauerbruch's activities during what was*  
26 *probably his only trip to the United States. However, four years later, he addressed a group*  
27 *of colleagues, and summarized his thoughts – about what he considered good and bad in*  
28 *American surgical education. Finally, he concluded with an accolade for the surgical practice*  
29 *of the Mayo brothers. It is the thoughtful reflections of this young surgeon on the Mayo*  
30 *brothers' practice that has stimulated us to present a translation of his lecture given more*  
31 *than a century ago. The figure shows Ferdinand Sauerbruch shortly after his visit to the*  
32 *United States.*

1  
2 America is justifiably called the land of unlimited opportunity. In the last 50 years,  
3 we have seen developments taking place there that no other developed country has  
4 achieved in such a short period of time. The enormous boom in industry and trade  
5 has generated immense wealth, which is not only comparable to European prosperity  
6 but surpasses it by far.

7 First, one must remember that, as proud as the Americans are of their country and  
8 their people, no actual American nation exists, but rather, the population of America  
9 is intermingled, made up mainly of English and German people. Indeed, the fathers  
10 and grandfathers of present day Americans are European. They arrived with the  
11 hope of gaining wealth and property at a time when, in Europe, trade and income had  
12 come to a standstill. They found a new home in the United States of America. Many  
13 of these immigrants were competent and intelligent, and in this way, quite a number  
14 of excellent minds were lost from the mother country, minds that enriched the new  
15 population of America. One must also remember those who were forced to leave  
16 their fatherland for political reasons, looking for a new home across the ocean; these  
17 were often exceptionally talented minds who found opportunities for free  
18 development of their abilities in this young country. One characteristic example is  
19 Carl Schurz, well known to all of us. [Carl Schurz (1829 – 1906), born near Cologne,  
20 emigrated to the United States in 1852 to escape prosecution because of his political  
21 activities. He had a remarkable career, serving as a General of the Union Troops in  
22 the Civil War, later as a newspaper editor, then Secretary of the Interior under  
23 Rutherford B. Hayes, and finally being the first German-born citizen to be elected to  
24 the United States Senate.]

25 Naturally, with all the economic and industrial development taking place in America,  
26 art and science had to play a minor role for a long time. First of all, we must  
27 remember that art and science are built on tradition and that this tradition was absent  
28 in America. Also, art and science need a certain level of prosperity. In their desire to  
29 call the best artists and artworks their own, the Americans have spared no costs.  
30 Without doubt, understanding and love of art will surely soon evolve. For medical  
31 science, we must recognize this has happened already.

32 Tonight, I wish to share my impression of the surgical system in America with  
33 you. Please bear in mind that because of time limitations for my lecture I can do this  
34 only briefly. Thus, I hope to give you a short, personal description of the state of

1 surgery on the American continent based on my experiences during my visit there  
2 four years ago.

3 My first impression of America was overwhelming. The arrival at the beautiful  
4 harbor of New York overlooked by the giant buildings and especially the lively to and  
5 fro on the Hudson provided a first indication that one is about to disembark in a  
6 country that is marked by work and effort. This first impression is further  
7 strengthened as one observes the hustle and bustle everywhere -- in the stations, on  
8 the ferries, and in the streets and squares. Haste and everywhere intensive work!  
9 One notes with astonishment how easily, almost playfully, various means of transport  
10 have been developed.

11 Those Europeans who come to America will be received like good friends. They  
12 will be warmly welcomed and hosted to an extent we rarely experience back home.  
13 An elderly surgeon, who many years ago had been a visitor over there and whom I  
14 had contacted to inquire about this and that before my own journey, told me: "You will  
15 be received like a valuable registered parcel in New York and handed over to the  
16 next address." Such cordiality and friendliness, such willingness to show and to help,  
17 one can hardly imagine. In doing so, the American is proud of his country and proud  
18 of what it has to offer to strangers. Like a child, he delights in the slightest  
19 appreciative remark, and he is grateful for every word expressing the visitor's  
20 satisfaction. This hospitality helps the visitor to get a good overview in a relatively  
21 short period of time.

22 As for surgery, the same features that characterize America in general also apply  
23 to our own discipline. = Historically, Americans are only indirectly involved here as  
24 many of the first American surgeons were of German, French or English descent.  
25 Also, I note some of the best Swiss names. Among them I would like to mention the  
26 late Nikolaus Senn [Nikolaus Senn (1844-1908) was a Swiss-born prominent  
27 American surgeon, Professor of Surgery at Rush Medical College in Chicago] and  
28 the two Ochsner brothers who are still living and working in Chicago [Alton Ochsner  
29 (1896-1981), the younger brother, was a prominent surgeon who founded the  
30 Ochsner Clinic and the Tulane Medical School]. The younger surgeons are of course  
31 all American but they were educated and trained by Europeans. Thus, it should not  
32 come as a surprise that despite the differences between these countries, American  
33 surgery is closely related to European and specifically to German surgery. It could  
34 even be said that German surgery has in fact been influenced by American surgery..

1 However, I do not wish to deny American surgery its independent development. In  
2 fact, I have to note that in some areas, American surgery is actually superior to  
3 European surgery.

4 Let me first say a few words about the surgical training in America. The educational  
5 system for the practice of medicine is quite different from what we do in Europe. The  
6 focus is on training at the patient's bedside. Lectures are given to small student  
7 groups who are crammed with facts. The whole system strongly reminds one of the  
8 way schools are run in Europe. The student is controlled and thus forced to complete  
9 his task. This system has its advantages but also has enormous downsides as the  
10 intellectual development of physicians suffers from this constraint.

11 With only a few exceptions, the universities owe their existence to private  
12 foundations. Universities vary widely in their educational quality and what demands  
13 are made of their students. The great variation in educational quality can be  
14 attributed to insufficient regulation by the state governments.

15 Nevertheless, America has several distinguished masters of internal medicine and  
16 especially of surgery. Notably in Baltimore [Johns Hopkins] medical training has  
17 made very good progress.

18 In America, there is less emphasis on good and clear medical lectures than on rote  
19 learning that teach the students a specific quantity of knowledge. Only a few  
20 university lecturers see a need for greater consideration of their students and provide  
21 summaries of their presentations about well-established principles of pathology and  
22 therapy.

23 However, another aspect of student teaching is better developed than ours. In  
24 America, there is the belief that a student must do experimental work under the  
25 supervision of his teacher to sharpen his powers of observation and to understand  
26 general pathological principles. In the teaching of pathological anatomy, for  
27 example, we can see that the main emphasis is on general pathology and in  
28 particular on experimental pathology. Through experiments, the students are shown  
29 the harmful effects of several pathological procedures, and the students and young  
30 doctors are instructed to carefully observe and produce a critical review of their  
31 observations. It has been my impression that these individually gained observations  
32 are especially strongly ingrained to memory and generate a clear understanding of  
33 pathological principles

1 Cushing, a young surgeon from Baltimore, has gone one step further. [Harvey  
2 Cushing became a renowned neurosurgeon at the Harvard School of Medicine.] He  
3 uses animals to let his students learn about wound treatment, shows them the wound  
4 development, and trains them in aseptic operations on the limbs, the stomach, the  
5 intestine, the lungs and the brain. – The very diligence and care, with which the  
6 students treat and nurse the animals entrusted to them, refute the argument of the  
7 antivivisectionists that these experiments are desensitizing medical students and  
8 physicians in training. The opposite is true: animal experimentation raises  
9 awareness of and respect for the secret of life. One must also acknowledge that –  
10 especially in surgical teaching - the animal experiment offers particular advantages.  
11 Surgical training with corpses – as valuable as it is in the topographical, anatomical  
12 training of the student – is insufficient to acquire the technical expertise required for  
13 surgery on living human beings. My conviction is that we must change our approach  
14 to experimental surgery in Europe, and use this change to modify our  
15 teaching. =Admittedly, our restraint in this area is partly a result of the anti-  
16 vivisectionist agitation, which is often based on exaggerated and downright untruthful  
17 allegations. In the long run, the anti-vivisectionist propaganda will not hold back this  
18 development because a physician who is genuinely interested in the truth will not  
19 allow public opinion to influence his actions – he will follow his own conscience as to  
20 which research methods are admissible.

21 However, adequate facilities are necessary for successful training in experimental  
22 therapy and pathology as well as independent scientific experimental work. In this  
23 regard, the American universities are particularly well equipped. First and foremost of  
24 the research institutes is the Rockefeller Institute must be mentioned [The  
25 Rockefeller Institute, now Rockefeller University was founded in 1904 with a  
26 generous gift of the Rockefeller family]. This research institute, which was built for  
27 seven million dollars provides unequalled facilities for all types of scientific work. The  
28 facilities of the animal laboratories at the Rockefeller Institute are especially  
29 impressive. All rooms are equipped like those of a good hospital. The animals have  
30 their own bath- and washroom; a proper surgical table is placed in a well-lit and  
31 spacious surgical theatre. The stables are scrupulously clean and, above all, heated.  
32 Attached to the stables are large enclosures for the animals, where they can spend  
33 several hours every day. Freshly operated or seriously ill animals are provided with  
34 special beds with rubber mattresses. These “patients” are looked after, cared for,

1 fed, and bedded during the day and also during the night by a skillful nurse who  
 2 shows real love for these animals. Certainly, anyone with personal experience in  
 3 experimental medicine knows that such an exemplary facility is not an unnecessary  
 4 luxury but an essential precondition for the success of difficult experiments. Above  
 5 all, such a facility, in combination with diligent care, removes the negative images  
 6 usually attached to animal experimentation. Diligent care reduces the animal's pain  
 7 to a minimum, and even the anti-vivisectionist must admit that this procedure is no  
 8 longer marked by brutality or crudeness, as has so often been suggested. These  
 9 excellent facilities with their superb organization have especially shaped  
 10 experimental medicine and in particular experimental surgery in America and  
 11 removed prejudices that existed in the general public. Indeed, in Baltimore, homeless  
 12 dogs that were destined for euthanasia are now handed over to institutions for  
 13 research because of the practice of these institutions to provide diligent and gentle  
 14 care for their animals.

15 Recently, some fundamental work has been published by the Rockefeller Institute.  
 16 Flexner has published important studies on the poliovirus, Meltzer made fundamental  
 17 physiological observations, and Carrel, whose achievements are of specific interest  
 18 to surgery, is the originator of the vascular suture. His experiments are almost  
 19 bordering on a miracle. With the aid of his vascular suture, he has succeeded in  
 20 amputating entire extremities of an animal, as well as whole organs, such as, e.g.,  
 21 the kidney, and implanting these in another animal. As an example, I saw a snow  
 22 white Poodle on whom he had implanted a leg from a black Pomeranian. Obviously,  
 23 these seminal experimental studies are unlikely to have any influence on surgical  
 24 practice in the immediate future, but I think we can already say that the vascular  
 25 suture when used in the treatment of extremity injuries will allow a much more  
 26 conservative approach than before. [Simon Flexner (1863-1946), Samuel Meltzer  
 27 (1851-1920), and Alexis Carrel (1873-1944, Nobel Prize laureate in 1912) were early  
 28 staff scientists at the Rockefeller Institute].

29 These masterly achievements in the area of experimental medicine, however,  
 30 cannot detract from the imbalance that exists between the glamorous institutions and  
 31 the small number of fundamental original works published by them. On average, the  
 32 quality of the science is without doubt below ours and this is, as it seems to me, due  
 33 to the short period of development of American medicine and surgery. There may  
 34 well be several scientists who have made great achievements in their own field but to

1 date, there are only a small number of scientific minds with an appreciation not only  
2 of their area of expertise but also of the neighboring disciplines. A multidisciplinary  
3 approach provides stimulation for themselves and their environment. The tendency  
4 for specialization, not only in practice but also in scientific research, which is  
5 particularly pronounced in America, is the cause of this narrow outlook that  
6 characterizes much of America's scientific work. Especially regarding surgery, I must  
7 say that I often had the impression that American surgeons are too hungry for  
8 success. Some do not work with a true enjoyment of science and self-motivation, but  
9 rather they aim for praise and success. A more selfless and less ambitious attitude,  
10 which we have seen in so many excellent scientists in European countries, can only  
11 be found sporadically over there.

12 Incidentally, my opinion is shared by some American colleagues with critical minds.  
13 In fact, when I expressed my admiration for one of the impressive American facilities,  
14 a leading American surgeon replied: "Yes, we have the great buildings but you have  
15 the great men."

16 The hospitals are mostly built very luxuriously, often in areas where the site alone  
17 must have cost vast amounts of money. These hospitals, like the universities, owe  
18 their existence to the benevolence of the public, with only a small number of hospitals  
19 being built on the initiative of local government. Indeed, we find visible proof of the  
20 great generosity of individuals. In almost all hospitals, large plaques are found at the  
21 entrance displaying the names of the benefactors and patrons of the hospital. The  
22 funds available for the administration of the hospital are thus very large.

23 The patients are extremely well cared for. The catering and the meals are  
24 excellent. In fact, much emphasis is placed on a certain comfort, which at times may  
25 appear to be going rather too far. The tactfulness shown by physicians and nursing  
26 staff towards even the most mundane patient is highly admirable. – The technical  
27 facilities of the surgical theaters and preparation rooms are outstanding. The wide  
28 range of instruments is impressive. The laboratories are superbly equipped. The  
29 material available to the individual hospital directors is vast. Usually, large outpatient  
30 clinics are attached to the hospitals, from where, not unlike a never-ending stream, a  
31 large number of patients arrive at the hospital every day. These outpatient clinics are  
32 equipped just as we would expect, i.e. there are facilities for consultation as well as  
33 any necessary outpatient treatments; both are provided free of charge.



1 The nursing care in American hospitals is also excellent. Every doctor will notice  
2 immediately how well the nursing care is organized in America. Firstly, the nurses are  
3 all very well educated and most come from upper class families. Accordingly, they  
4 have a highly regarded social status and a preferential social standing. A registered  
5 nurse earns 25 – 40 Dollars per week with free board. Yet, she must have completed  
6 a three-year training in a hospital with a thorough theoretical teaching and pass two  
7 difficult exams before she can graduate. In general, the number of nurses in the  
8 hospitals is organized so that one nurse is looking after about three patients. For  
9 example, there are 180 nurses for the 450 beds of the Mt. Sinai Hospital. Comparing  
10 this with European conditions, we must openly admit that nursing care in America is  
11 incomparably better than it is here. This applies both to hospitals and nursing care in  
12 the home. In America, one is accustomed to immediately hire a home nurse when a  
13 family member falls ill. One must clearly distinguish nurses who have received a  
14 formal academic education and are licensed from nurses working at religious  
15 hospitals. Here, nurses are usually Roman Catholic and of German origin.

16 In general, Americans opt for surgery relatively casually, preferring the risk of  
17 surgery with hope of rapid recovery to medical treatment involving extended periods  
18 of bed rest. Thus, the American surgeon is much better off in that respect than we  
19 are in Europe. However, it can be noted without doubt that the indications for some  
20 surgeries are applied far less stringently than the standard of practice in Europe.  
21 Thus, I noticed how patients suffering from gallstones or stomach ulcers received  
22 surgical treatment at a stage where we would certainly have continued with medical  
23 therapy. Of course, with these early surgeries, the chances of a beneficial outcome  
24 are always very promising.

25 On the other hand, it has been my impression that cases, which according to our  
26 European standards are still operable, are rejected by many surgeons in America.  
27 When analyzing American statistics, this fact must always be considered. Those  
28 who elect to operate only in cases with uncomplicated problems will achieve better  
29 results than those who accept the responsibility of surgical intervention even in  
30 desperate and complicated cases. Also, diagnostic biopsies are done more often in  
31 America than is the case in Europe. I was amazed at how quickly exploratory  
32 laparotomies are suggested and carried out in case of doubt.

33 The indications for removal of the appendix are exceptionally broad. In almost all  
34 cases of abdominal laparotomy, a more or less healthy appendix is additionally

1 removed for prophylactic reasons. I met some surgeons who even displayed this  
2 generous attitude when it comes to gallbladders. In addition, some of the procedures  
3 performed by gynecological surgeons in America are considered unacceptable in  
4 Europe. Of course, there are exceptions. The focus of American surgeons lies in  
5 abdominal surgery – where the best is achieved. Nonetheless it cannot be denied  
6 that because of this focus, other practical and very important areas of surgery are  
7 somewhat neglected.

8 We even have to acknowledge that in one area, which is of great public interest,  
9 America is in the lead, namely appendicitis. It has taken a long time in Europe before  
10 the public was able to understand the surgical point of view regarding the treatment  
11 of appendicitis. In America, it has long been accepted that surgery, when performed  
12 in time, is but a small intervention, even in cases of slight illness, in view of the  
13 always present risk of a poor outcome. Indeed, one could state that appendicitis is an  
14 American disease since we owe the first clear surgical description and evidence for  
15 the appropriate surgical treatment to the American Mc Burney [Charles McBurney  
16 (1845-1913) was a prominent New York surgeon who advanced the surgical  
17 treatment of acute appendicitis.] In development of the treatment of appendicitis by  
18 surgery, the spirit of the American people is revealed. The prospect of constant  
19 health and a speedy return to being able to work is sufficient reason to opt for  
20 surgery. In contrast, here in Europe, hundreds of patients die every year without or  
21 as a result of delayed surgery. In contrast, these causes of death are already a rarity  
22 in America.

23 A word about the surgical technique of Americans. One should expect that people  
24 with such exceptional technical talents as seen in America would also be competent  
25 in the purely manual aspect of surgery. This is not always the case. They have quite  
26 a number of facilities that are well equipped with useful instruments, some of which  
27 we are lacking in Europe. However, I rarely found what we consider “surgical  
28 technique” in a narrower definition, namely quickness, safety, and elegance of  
29 surgery. The Americans have excellent surgeons, the same way that any other  
30 country has, more or less. But with respect to technical talents among American  
31 surgeons I found that American surgeons with excellent surgical technique were few  
32 and far between. Only the Mayo brothers, who are outstanding in every respect,  
33 have an excellent, undoubtedly inherent surgical dexterity finely honed by assiduous  
34 training.

Next, let me tell you about a wonderland of surgery – you may well call it that – which does not exist anywhere else in the world and probably never will. Over there, high up in the North in a still sparsely populated district of the state of Minnesota lies a small town of previously three and now 7000 inhabitants: Rochester. Here, where the civil war was fought particularly fiercely, a military surgeon named William Worrall Mayo worked with the union troops. There were heavy battles with many casualties in the vicinity of Rochester. The wounded were brought into town and nursed by Mayo, who dressed their wounds and sometimes performed surgery. In his work, he was assisted by Catholic nuns and when the military campaign was over, the young Mayo was asked to stay on in Rochester where a small hospital was built for him. Mayo took over the hospital and with growing competence his practical work expanded. [Dr. Sauerbruch does not appear to have his facts correct. William Worrall Mayo (1819-1911) took care of the wounded in the US-Dakota (Indian) war in 1862 outside of Rochester. In 1864, he became an examining physician in Rochester for Civil War recruits]. Early on, he prepared and educated his two sons, William and Charles, for the medical profession. They both studied in Chicago. [William James Mayo (1861-1939) received his M.D. from the University of Michigan; Charles H. (1865-1939), from Chicago Medical School] and spent their holidays assisting their father and adopting his extensive practical routine.

The extent of their father's influence on the one hand and the sons' gratitude for his teaching on the other hand is evidently clear from what the older brother told me one day: "I have met and studied under many great surgeons, but none of them taught me as much as my father did in his simple ways."

In 1908, I met the old man, who was then 87 years old [should be 89]. I was delighted by his sprightliness and sharp judgment, but especially by his satisfaction with his life's achievements and those of his two sons. Obviously, the fact that he was supported in all this by a fine wife, who was still alive then at 83 years, played an important role. After the brothers had earned their medical degrees, they were mainly trained by their father and apart from that may be considered to be self-educated. However, it should not be ignored that both travelled extensively and spent much time studying at European clinics. Everything they saw there and brought back with them, they applied with skill and diligence, thus continuously expanding their surgical skill. The small hospital of their father has meanwhile developed to a large one. Today, the hospital has 180 beds and meets all modern demands. Several hotels

1 provide accommodation for about 300 additional patients who are treated as  
2 outpatients or receive aftercare following hospital treatment. Not only these rooms,  
3 but also the charming villa-type mansions and almost all apartments of the town are  
4 continuously inhabited by ill people, all of whom are exclusively private patients. They  
5 are sent here by their doctors from all parts of the United States. In 1908, 6450  
6 surgeries were performed on 5590 patients. The outpatient clinic, which is open  
7 every afternoon between 3 pm and 5 pm, sees about 150 – 190 patients every day,  
8 also all private patients. Obviously, with such a large number of patients, the two  
9 surgeons must have a staff of assistants at their disposal. In fact, there are 32  
10 assistant physicians, most of them excellent specialists with many years of, mainly  
11 European training. Each of them has his specific field of expertise. Hence, there is  
12 one specialist for gastrointestinal ailments, one for lung diseases, a third one for  
13 neurological problems, etc. These assistants are not concerned with the actual  
14 surgeries, which are only performed by the two brothers and one assisting nurse. –

15 When one asks oneself, how it can be possible that in a small town, in a remote  
16 location far from the large cities, such an enterprise can be developed, I believe the  
17 answer lies not only in the particular American circumstances, but also in the truly  
18 excellent organizational and surgical skills of the Mayo brothers. Yet one must not  
19 forget that the patient material they work with is highly favorable. Obviously, acute  
20 cases, which always carry a high failure rate, do not come here due to the remote  
21 location of Rochester. And this is the reason for the giant gap between the statistics  
22 of the Mayo brothers and those of other surgeons. In 1908, they performed 3674  
23 abdominal surgeries with a mortality of 2%. I would like to emphasize that such  
24 favorable statistics are not only attributable to the type of patient undergoing surgery,  
25 but also due to the specific conditions, mainly due to the excellent technique of both  
26 surgeons. The Mayo brothers are also the only ones who actually perform the  
27 surgery. Speed and expertise are the secret of their success.

28 The morning in Rochester is entirely dedicated to surgery. If one sees the daily  
29 schedule of the operating theaters every morning, one gets a glimpse of the work  
30 that is accomplished here. During the five days I spent there, 24 – 28 large surgical  
31 procedures were scheduled every morning; these were performed by William and  
32 Charles Mayo. The material is assigned so that William Mayo performs only the large  
33 abdominal surgical procedures. His brother Charles Mayo also performs abdominal

1 surgeries, but the majority of his surgical schedule involves the thyroid gland, the  
2 prostate and other complex operations.

3 Prior to the operations, the two brothers make rounds and see all patients in the  
4 hospital. After lunch, during which correspondence is dictated to the stenographer,  
5 the outpatient clinic is attended between 2 pm and 5 pm. This is followed by visits to  
6 patients in the two large guesthouses and in town. Once this enormous workload has  
7 been completed, each brother drives out to his farm where he spends time with his  
8 family and, as far as I have seen, is no longer available to his patients. This comes  
9 as a natural reaction to the hard daily work and here too I have come to appreciate  
10 the healthy attitude of the American who knows to create relaxation in pleasant  
11 surroundings such as William Mayo has done on his farm. Incidentally, part of the  
12 evening is dedicated to perusal of the latest literature. Certainly, every visitor will be  
13 amazed by the proficiency of the Mayo brothers in any aspect of modern research.  
14 This is further proof of their outstanding organizational skills, since every assistant  
15 has to regularly study and lecture on his specific area of expertise. I was able to  
16 witness this at one of the regular in-house evening lectures.

17 Since there are always a number of foreign physicians present at Rochester, who  
18 come to study or to attend one of their patients undergoing surgery, very practical  
19 arrangements are in place for their comfort and to provide the opportunity of careful  
20 observation. With convenient facilities and surgeries carried out in three operating  
21 theaters, visitors can attend any surgery they are interested in. During preparation,  
22 the respective case and its indications for surgery are discussed in detail. This  
23 provides the opportunity not only to compare one's own experiences with those of the  
24 Mayo brothers but also to learn of their extensive knowledge of the latest research  
25 findings.

26 As in the mornings, the Mayo brothers have also ensured an effective afternoon  
27 schedule for their visiting physicians. They founded the Surgeons Club, with its own  
28 building which is equipped with an excellent library, pleasant lounges, and even  
29 some living accommodations. Every afternoon between 3.30 pm and 5.30 pm,  
30 lectures are given, and these are open to all visiting physicians. Lifetime membership  
31 in the Surgeon's Club is five Dollars and a visiting membership is available for three  
32 Dollars. Foreign surgeons are usually awarded honorary membership. The purpose  
33 of the club is to provide the physicians with an opportunity for social gathering, a  
34 comfortable stay, and quiet working areas during their time in Rochester. The

1 purpose of the regular afternoon meetings is to hear an open review and discussion  
2 of the cases operated on that morning. In order to avoid any interference of the  
3 physicians' discussion and critical reviewing, neither the Mayo brothers nor their  
4 assistants attend these meetings. Every day, three of the visiting physicians present  
5 are chosen as reporters for the following day, i.e. one of each will report back from  
6 one of the three operating theaters. He must attend all surgeries scheduled for the  
7 respective theater from beginning to end and deliver an extensive report the following  
8 afternoon. In return for this work, he is offered the best available seat in the surgical  
9 theater. A similar arrangement exists for the control of the immediate outcome of the  
10 surgeries. Twice weekly, one of the physicians is appointed house reporter, who will  
11 walk through the hospital and note and report on the wellbeing of all patients who  
12 underwent surgeries. These reports are then open for general discussion, which, as I  
13 was able to observe several times, is done with great knowledge and much interest.  
14 Often, questions of general interest are debated or lectures are given by well-known  
15 surgeons who are currently visiting. There are also evening events where the  
16 directors of the individual laboratories give lectures on their own work.

17 Once you have observed these men at their work and observed their successes,  
18 you simply have to grant them absolute admiration -- especially when noting how  
19 humble they are. When I, in view of their outstanding surgical techniques, expressed  
20 my wish for them to participate in the development of the most modern area of  
21 surgery, namely that of the thorax, they replied: "Oh, no, you teach us and  
22 afterwards, we will carry out the operation." Another typical feature of their modesty is  
23 that both have refused repeated offers to teach at various universities and have  
24 never felt the desire, being in contact with students, to publicize their scientific work  
25 or to gain ideas from lecturing for their own scientific work. They do not want to be  
26 scientific surgeons, despite their large knowledge and skills. They want to be  
27 practical surgeons and have no wish to use their experiences for expansion of our  
28 science. It is their ambition to perform as many surgeries as possible and to heal, but  
29 not to strike a new path. They are excellent teachers for practical physicians, who  
30 come from far and wide, but only for practical technical advice, not for scientific  
31 reasons.

32 Yet, it is not my place to declare these two men, now in the prime of their lives, the  
33 best practical surgeons of America, maybe even of the world. When they pass away,

1 their surgery will also pass away. They do not constitute an epoch; they will leave no  
2 milestone; but in their practical profession they are the best.

3 Anybody who travels in America will come to the conviction that this is a powerful,  
4 wealthy country where much progress is taking place. New creations and  
5 developments are not hindered by the heavy weight of history. However, exactly this  
6 lack of tradition is the reason why in America, despite admirable energy and vast  
7 expenditures, the success does not always meet expectations, and why it is so  
8 difficult to find the right candidates for new challenges and new positions. Especially  
9 in the field of medical science and training, long periods of time, indeed several  
10 generations are necessary to develop a suitable environment. Yet, the youthful  
11 enthusiasm, and the infectious energy of this young country will also fill this gap in  
12 future years. In time, the American universities will be proud to have recruited and  
13 trained proficient men for the most important positions in this new country.

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