Pathology Departments in Germany

The German Division of the IAP in association with the European Society of Pathology will be hosting the next International Congress in Cologne Sept 26-30, 2016. With this in mind I would like to review some aspects of the development of Pathology in Germany and to draw attention to what is happening in some of the leading Pathology Institutes today.

Rudolf Virchow (1821-1902) was without doubt the leading figure in the development of scientific medicine in Germany in the second half of the 1800s.

He was prominent not only in the medical field, but in his later years he had deep interests in the newly developing disciplines of anthropology and archaeology. He was a social reformer and also a politician.

Charité Hospital where he worked was founded in 1710 as a plague hospital. The epidemic of plague that occurred at that time did not reach Berlin and the hospital continued as a hospital for treating poor people. The Berlin Anatomical Theatre was founded in 1713, the medical school in 1724, the Berlin University in 1810. Charité then became the teaching hospital of the medical school step by step.

The pathology department in the Berlin University began in 1831 and it was well established when Virchow joined it. He was beginning to make his mark in pathology when he became involved in a political disturbance. As a result of this he had to leave Berlin for a while by accepting an invitation to become the first Professor of Microscopic Pathology in Würzburg (1849-1856). Here he performed post mortems, engaged in teaching and prepared the material for his ground-breaking book “Die Cellularpathologie.” In 1847 he started the journal that became Virchows Archiv, and while in Würzburg he was able to put the journal on a firm footing.

Die Cellularpathologie was published in 1858 with chapters based on his lectures. The main theme of the book is enunciated in Lecture 1.

“Previous anatomists have viewed the outside of the body and tissues. I have gone further and demonstrated the microscopic structure of plants with big cells and humans with smaller ones.”

In the following lectures he demonstrates cells from normal tissues and some from pathological ones. His conclusion was “Cells form new cells which form tissues, and tissues form organs.” This was summarized by the well-known sentence “Omnis cellula a cellula”.

Researchers in the universities in Germany and...
Pathology Departments in Germany: Museum of Medical History at the Charité

Left: The diagram which illustrates Virchow's concept that cells develop from previous cells and then form tissues that form organs. "Omnis cellula a cellula".

Left below: A Japanese translation with writing in "Western" style (1871). These books in Japanese indicate the strong link that was made between Japanese and German pathologists at that time. These ties have continued to the present day.

Below: A lung from 1830 showing the presence of tuberculosis. This disease was very common before the introduction of streptomycin in 1943.

Left above: Books in which some of the early post mortems were recorded. (Photograph taken on 4-12-90)

Above: Robert Koch (1843-1910) memorial at the entrance to the Charité Hospital. This famous pioneer Bacteriologist worked at Charité at the same time as Virchow. He identified the causative organism for tuberculosis in 1882.

Left: One of Virchow's famous case presentations was a giant who had a pituitary tumour.

Below: This photo of Virchow delivering a lecture in the newly opened lecture theatre on the eve of his 80th birthday is on the wall of the Museum.

Left right: Robin Cooke standing at the place where Virchow stood at that lecture. The lecture theatre was destroyed by a bomb in WW2. It has been kept as "The Ruin" which is hired out for functions. A lecture had taken place on this day.

Above: The desk that Virchow used in Würzburg with some of his post mortem reports from there. The desk can be elevated or lowered for microscopy and for writing. Visitors are invited to have their photographs taken sitting at the desk.

Above: Pride of place amongst the display of some of the original Virchow specimens is given to a bust of Virchow that was presented to him on his 80th birthday. Robin Cooke pays his respects to the Master.

Above right: Petra Lennig, Assistant Curator of the Medical History Museum is standing next to a mark on a pillar in the Museum that indicates the height of "Virchow's giant". (black arrow). Neither Petra nor I could reach this mark.

Above: Next day "The Ruin" was being set up for a reception. I have taken this photo from almost the same angle in which the 80th birthday photo was taken. The black line indicates the level of the seating in the historical photo. The door on the left was behind the lecture desk and it leads to the Museum.
elsewhere in the world are continuing in the tradition that Virchow introduced. They are now studying cells, but from the standpoint of how they function and how they interact with their environment within the body.

About the time that Virchow completed his studies on the appearances of cells in the various tissues of the body in health and disease, the building of a new Institute for Pathology (The first one in Germany) was completed on the grounds of the Charité. The Prussian Ministry of Medical Affairs and Education appointed him to be the first Professor of Pathological Anatomy and Physiology at the Berlin University. He accepted the chair in 1856 and then gave a series of lectures that drew large crowds.

Virchow wanted to demonstrate to students all the possible manifestations of every disease he could find. To do this he established a museum of pathology specimens which at its peak held over 20,000 specimens.

As part of the Institute building that he designed, the museum was opened in 1899. The lecture hall provided 250 seats and 50 standing places. On 12 October 1901, on the eve of his 80th birthday, Rudolf Virchow welcomed many highly renowned scientists from both Berlin and the whole world into the Lecture Hall. The event is documented in the enlarged photograph displayed on “the Ruin” wall.

The Pathological Institute was extensively damaged by bombing during WW2. The bombs destroyed the lecture theatre and many of the specimens were also destroyed. The Institute was in the Eastern sector of Berlin, and post WW2 it was separated from the West by a wall made of concrete slabs. The main building of the institute was partially restored, and teaching continued. The museum and in particular the lecture hall there remained in a ruin-like state.

The reunification of Germany occurred in October 1990, and in 1994 Professor Manfred Dietel was appointed to the Chair of Virchow. He preserved the bombed building and called it “the Ruin.” The remains of the lecture hall and the historical museum were restored and a new door connecting the two was made. He then leased “the ruin” for functions both scientific and social. It became popular for receptions in particular.

and after the function the guests were allowed to inspect the specimens in the Museum. This raised enough money to be able to restore some museum galleries in the former Virchow museum at the Spree River end of the Institute. The new Institute is called “Rudolf-Virchow-Haus.”

The Medical Faculty Charité appointed Professor Thomas Schnalke as the Professor of Medical History and Curator of the new Museum which was called “The Museum of Medical History at the Charité.” He was charged with creating a Museum that would act as a prime resource of research, teaching and public outreach into the 21st century. The museum is now a flourishing source of education and research into medical history. It is open to the general public as Virchow had intended it to be, so that it would be a source of education for non medical as well as medical people. There is an entrance fee of 7 euros and each year about 70,000 visitors pass through its doors. They can visit the museum on their own or hire tours by professional guides.

Following in the innovative style of Virchow, Prof. Dietel has developed a modern laboratory in the Institute building designed by Virchow. The diagnostic laboratory handles over 75,000 specimens each year. It also offers a comprehensive array of molecular pathology tests. There is a research section attached to each of the main organ based disciplines.

All university hospitals in Berlin have been brought under the administration of the Charité Hospital, and members of the Pathology Department overcome the difficulties of travelling from the Department to the many specialist clinics by conducting clinicopathological correlation meetings via the internet. Prof. Dietel embraced Telepathology when the necessary technology became available. His department has been a leader in this field ever since.

Robin Cooke

I am grateful to Prof. Manfred Dietel for allowing me to visit the Institute, to take relevant photographs and make a report for the News Bulletin. To Prof. Thomas Schnalke Director of the Museum who was away during my visit, for giving the project his blessing. Very special thanks to Dr Petra Lenzig, Assistant Curator of the Medical History Museum who accompanied me on my tour, helped with taking photos and provided me with a wealth of information that was not necessarily recorded in the handout literature from the Museum.
Two Institutes in Hamburg

Hamburg is situated about 100 km from the mouth of the River Elbe that flows into the North Sea. With 65 km of docks it is the busiest port in Germany and an important industrial and shipbuilding centre. The river is deep and its banks are almost vertical which allows large ships to tie-up close to the banks. Wharves and commercial buildings are built right up to the water’s edge. This deep ‘trench’ was made by the river meeting the ice sheets coming from the North during the last ice age.

The Bernhard Nocht Institute for Tropical Medicine

This Institute is one of the leading centres for Research on Tropical Diseases in the world. It was opened in 1900 using what was the administration building of a naval hospital in Hamburg. Bernhard Nocht (1857-1945) was a naval physician and the medical officer for the port of Hamburg since 1893. He had made Tropical diseases his main medical interest and he was appointed the first Director of this new Institute. One of his publications was on Malaria. The Institute was given his name in 1942 to commemorate his 85th birthday. Shortly after this, most of the Institute was destroyed by bombs that were targeted on the port facilities. After the War the buildings were rebuilt in the same style as before. They occupy a commanding view of the port.

Originally there was a hospital for the treatment of Tropical Diseases attached to the Institute but this was relocated to the University Medical Center Hamburg-Eppendorf in 2006. For many years the Institute has been running courses in Tropical Medicine. It has a field Institute in association with a University in Ghana.

The emphasis of the Institute at the present time is investigating the mechanisms of action of parasitic diseases. One example of this was demonstrated by Hanna Lotter who is working on amoebiasis. She injects live amoebae into the liver of an immuno-compromised mouse that she has developed. Using a time lapse video she shows the amoebae being surrounded by neutrophils stained green and red respectively. As the amoebae move through the liver towards the areas of liver that contain the blood supply, they leave behind amorphous material containing dead hepatocytes, inflammatory cells and amoebae. (This constitutes the brown coloured pus that can be aspirated from amoebic liver abscesses.)

Hanna is correlating this activity in mice with a similar pattern that can be seen in amoebic abscesses in human livers. She has been joined recently by Andy Long from the USA who is investigating the chemical substances in the connective tissue surrounding these amoebic abscesses.

Two famous members of the Institute in its early days

Gustav Giemsa (1867-1948) was a graduate of the Universities of Leipzig and Berlin. After spending 3 years in a laboratory in German East Africa (the modern Burundi, Rwanda and Tanzania) he joined the Bernhard Nocht Institute in 1900 as the Head of the Department of Chemistry. In 1904 he published his method for staining flagellates and blood cells. This became known as the Giemsa stain.

Henrique da Rocha-Lima (1879-1956) joined the Institute as Head of the Department of Pathology in 1909. A graduate of the University of Rio de Janeiro, Brazil, he was one of the original staff of the Oswaldo Cruz Institute in Rio de Janeiro. This is still an important Institute for Research in Tropical Medicine.

Rocha-Lima became a leading Rickettsiologist. He identified the causative organism of epidemic typhus (Rickettsia prowazeki) and of trench fever (Rocha-Lima quiniana) later called Borrelia quintana). Trench fever was an important debilitating, self limiting condition that affected soldiers during WW1. It disappeared after the War.

He returned to Brazil in 1928 and joined the staff of the Biological Institute in Sao Paulo. He was instrumental in establishing strong ties between German and Brazilian Institutes and in the foundation of the University of Sao Paulo which opened in 1934. He received numerous prestigious awards from both Germany and Brazil.

Robin Cooke

I am grateful for information in this article and permission to take the photographs that was kindly provided by Paul and Klara Racz (Senior Professors), Martina Christine Koschwitz (Librarian), Hanna Lotter (Chief parasitologist), Andy Long (Post Doctoral Fellow) and Joachim Clos (Head of the Leishmania Unit).
Universitaetsklinikum Hamburg-Eppendorf

The Director of the Pathology Department is Guido Sauter who graduated from the University of Zurich. He then worked in Basel until 2005 when he was appointed to his present position in Hamburg, a city with a catchment area about equal to that of the whole of Switzerland. In the meantime a new hospital and a new pathology department has been built.

The management of the hospital decided to have a focus in prostate surgery. Guido’s interest is prostate and uropathology, and because of his expertise in these areas he was appointed to be Director of the Pathology Department. The hospital now does 2,500 prostatectomies each year. There are surgeons who do only prostatectomies and as a consequence the results are very good. The hospital now does about 10% of the prostatectomies in Germany.

Since 2005 the department has grown from 9 pathologists to 34. The hospital has 4 clusters of 4 operating theatres. Frozen sections come to them via a pneumatic tube system. The pathologists work in teams - Prostate, lung, breast, gastroenterology etc.

The Department services 80,000 patients per year, and produces about 2,600 blocks each day. One year of slides and blocks is kept in the laboratory for reviews. Slides are kept for 15 years and blocks indefinitely in an off site storage unit.

As well as this clinical load the staff pathologists teach medical students in a course that enrols 400 students in each year. They run a formal pathology course but they have no wet tissue or mounted specimens, and they have no plans to create a museum.

In the prostate unit frozen sections are done on margins on all prostatectomy specimens. This means that there is more than one pathologist and frozen section technical team working during each operating session during the day.

The laboratory is spacious and uncluttered. As well as being equipped for routine diagnostic tests, it also has a modern and active Molecular pathology section.

Robin Cooke

Information for this article and permission to take the photographs was kindly provided by Guido Sauter.
Dear Colleagues
The Singapore Division of IAP is up and running and we hope to do more as the years go by!

I have attached here a copy of our very first newsletter - I hope you will enjoy reading it as much as we had fun putting it together!

We will keep you updated about the programmes in 2016 and hope to see you in some future meeting!

Angela Chong, President, SGIAP

EDITOR’S NOTE
A very warm welcome to our inaugural newsletter of the Association of Pathologists, Singapore! We represent the Singapore Division of the International Academy of Pathologists (SGIAP). SGIAP was formally formed in January 2015, led by our first and current President Dr Angela Chong. Since its inception, the SGIAP has been actively organizing a number of educational courses for the benefit of our members and the pathology community.

Our newsletter editorial team will bring you the latest updates on SGIAP activities as well as upcoming events. As part of our commitment to continuing medical education to the pathology community, we have an interesting case puzzler that will deliver learning points for everyday practice. Hope you will enjoy perusing this newsletter!

Puay Hoon Tan, Publications Secretary, SGIAP
Email: singaporepathology@gmail.com
Website: singaporepathology.org

News from the Brazilian Society of Pathology / Brazilian Division of IAP

The Brazilian Society of Pathology represents the largest Latin American Division of the IAP, with 1659 registered members.
At the October, 2015 meeting of the society, Dr. Clovis Klock from the State of Rio Grande do Sul was elected to the position of President elect. From 2003-2007 Clovis was the Director of Informatics for the Society (2003-2007). He also presided over the 2007 Congress in Bento Gonçalves. Paula Abreu e Lima from Recife was appointed international relations representative of the Society. The next Brazilian Congress of Pathology will take place in Belo Horizonte in 2017.

Contact addresses:
Clovis Klock - clovisklock@gmail.com
Paula Abreu e Lima - paula@adoniscarvalho.com.br

French Division News

The French Division would like to announce the passing of Christian Nezelof (19-1-1922 to 18-5-2015.)
Prof. Nezelof was a distinguished paediatric pathologist and Director of the Pathology Department at Hospital Necker in Paris, one of the largest paediatric hospitals in the world.
He was the foundation President of the French Division and he was the recipient of many prestigious awards including:
• Member of the National Academy of Medicine
• Chevalier of the Legion of Honour.