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«Chemical Landmark» 2016

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On September 9th, the Swiss Academy of Sciences (SCNAT) awarded the «Chemical Landmark» 2016 to the former Institute of Chemistry of the University of Zurich. The celebration at the Rämistrasse 74/76 attracted an audience of about 60 participants to this oldest still preserved building of the university. The new head of the Department of Chemistry, Prof. **Karl Gademann** opened the session and moderated through the day's program under the motto "*honor the past, embrace the future*". The president of the university, Prof. **Michael Hengartner** thanked the SCNAT for the distinction and emphasized that employing excellent scientists is only one key ingredient to success, and that research-assisting infrastructure is another key ingredient.



Historical photograph of the former chemistry institute(s).



The «Chemical Landmark» was celebrated in the famous library which architect Santiago Calatrava built into the institute's inner courtyard.
© Frank Brüderli.



The door at Rämistrasse 76 still bears witness to the chemical history of the building. © Cristina Nevado.

Representing SCNAT, Prof. **Christian Bochet** welcomed everyone and shortly introduced the academy and the «Chemical Landmark» program, which aims at keeping alive the memory of important historical events and persons in the field of chemistry in Switzerland.

In her laudation, Prof. **Cristina Nevado** gave an insight into the history of chemistry at the University of Zurich, Dr. **Roland Kunz** expanded the historic view with an architectural retrospection and Prof. **Roland Sigel** and **Stephan Borger** neatly moved on to the future of chemistry at the University of Zurich and their building infrastructure:

Starting 1833, chemistry at the University of Zurich began as a success and immediately grew. Relocations and expansions were necessary several times, and from 1893 on, with Alfred Werner as young professor, the spatial constraints increased further. He attracted so many students that the lecture halls were overcrowded. Additionally, the lab space was 'untenable', even known as 'the catacombs'. Due to their use of the cellars as labs, the chemists were even reprimanded for incurring too large a bill for artificial lighting.

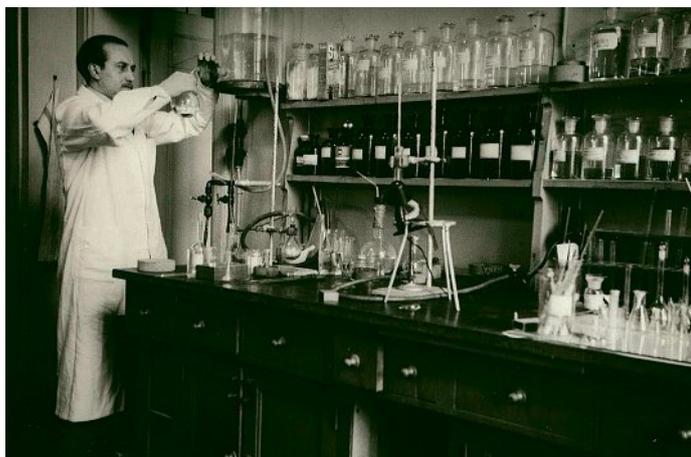
Only after Werner threatened to accept a call from the University of Vienna, did Zurich agree to finance a new building for chemistry. For 1.4 Million Swiss Francs, the 'Kantonsbaumeister' H. Fietz constructed the new building, which housed the 'neue Kantonsschule' as well as the chemistry



Though more than a hundred years old, the samples from Werner's group are still preserved and catalogued. © Richard Detterbeck.



Unveiling the plaque: (f.l.t.r.) M. Hengartner, C. Nevado, R. Sigel, K. Gademann, Ch. Bochet. © Frank Brüderli.



In the lab of Karrer's 'Vorlesungsassistent', ca. 1950.

institute. Many interior functions were chosen by Werner, *e.g.* the direct access to his 'Privatlabor' as well as the lab of the 'Vorlesungsassistent' *via* a special spiral staircase out of his office. Werner could visit each of his labs without once setting a foot in the corridor! Four years after the opening, Werner received the Nobel Prize in chemistry, which was a first for the University of Zurich, and also the first for an inorganic chemist. With his flash of inspiration in one night in 1892, he described a theory, which is now the foundation of coordination chemistry. He further recognized that chirality also exists in inorganic molecules. Over the years, his research group experimentally confirmed his theory. His discoveries are so fundamental that textbooks do not always attribute them to his name anymore. Laying the cornerstone of metal-ligand-complex chemistry has been so important to most of chemistry and even more of molecular biology that Werner's contribution cannot be overestimated.

He was also renowned as a brilliant teacher and indeed his student Paul Karrer became his successor as professor and head of the institute.



D. Seebach and A. Eschenmoser in discussion with M. Hengartner. © Frank Brüderli.

Karrer turned to a different field of chemistry and was similarly successful. Although Karrer was rather patriarchal in 'his' institute, he established a new department for physical chemistry under Prof. Victor Henri. In 1937 Karrer received the Nobel Prize in chemistry for "*his investigations on carotenoids, flavins and vitamins A and B2*". At Rämistrasse 76, not only inorganic and organic chemists were successful, also physical chemistry thrived, *e.g.* under Prof. Klaus Clusius, who invented a 'Trennröhr' (separation tube) in 1939 to separate isotopes and achieved record purities of isotopes. This was subsequently used to generate an additional income for the institute. It is impossible to do justice to all the successful scientists who worked at Rämistrasse 74/76 in this short overview. A more detailed history has been described in four articles in *Chimia* in 2008.^[1]

Thanks to the success, the institute continued to grow and although the building was modernized repeatedly, and chemistry gained more space at the cost of the 'Kantonsschule', the institute became too small and old. In 1978 chemistry moved into the new



The «Chemical Landmark» plaque and the building which is now used by the faculty of law. © Frank Bröderli.



Impressions from the apéro. © Frank Bröderli.

building at the Irchel Campus. Today, the Faculty of Science of the University of Zurich is the fastest growing faculty and again needs more space and newer infrastructure. The construction of the new building 'UZI-5' has just started and is planned as a very adaptive infrastructure that should support the excellent scientists to continue this string of successes. It is intended that old divisions into classic fields of chemistry should be minimized and that chemists using similar techniques should profit from a close 'lab-neighborhood' regardless of the branch they're associated with. Indeed a modular lab-setup is planned to enable reacting to changing needs and times.

After this roundup from a successful past into the promising future, the commemorative plaque was unveiled in brilliant sunlight by president Prof. Michael Hengartner and Prof. Christian Bochet. The festivities were concluded with an apéro giving the participants ample time and opportunity for networking and for studying the history of the chemical institutes on the displayed posters.

Everyone is encouraged to submit their nomination for a «Chemical Landmark» to the «Platform Chemistry». Share with us an aspect of Swiss chemical history by providing a description of the site or place with a detailed statement of its historical importance (max. 3 A4 pages). Further documentation (pictures, articles etc.) is welcome. Additional information on the «Chemical Landmarks» may be found at:



www.chemicallandmarks.ch

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- [1] J. S. Siegel, *Chimia* **2008**, 62, 68; J. R. Huber, *Chimia* **2008**, 62, 103; R. Alberto, G. R. Patzke, R. K. O. Sigel, H. G. Berke, *Chimia* **2008**, 62, 111; H.-J. Hansen, *Chimia* **2008**, 62, 132.