

**Zeitschrift:** The Swiss observer : the journal of the Federation of Swiss Societies in the UK

**Herausgeber:** Federation of Swiss Societies in the United Kingdom

**Band:** - (1955)

**Heft:** 1262

**Artikel:** The 100th Anniversary of the Federal Institute of Technology

**Autor:** [s.n.]

**DOI:** <https://doi.org/10.5169/seals-694363>

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## THE 100th ANNIVERSARY OF THE FEDERAL INSTITUTE OF TECHNOLOGY.

The Federal technical University of Zurich (Federal Institute of Technology), the rector of which is Professor Karl Schmid, has recently celebrated the hundredth anniversary of its foundation, and scholars from all over the world have united in paying their tribute to an institution which has contributed not only to the economic advance of Switzerland but also to research far beyond her frontiers.

The Government and municipal authorities gave a reception in honour of the many guests whom the university had invited, amongst them were present former Federal Councillors, Scientists, Industrialists, Artists, Politicians, High Ranking Officers, Technicians, etc., etc.

Amongst the many speakers was Monsieur Max Petitpierre, President of the Swiss Confederation.

The following article by Dr. h.c. E. Speiser, President of the Swiss Association of Machinery Manufacturers, has appeared in the latest issue of "Swiss Technics":

The Federal Constitution, adopted in 1848 by the people and their representatives, contained in Article 22 this provision: "The Confederation is authorized to establish a University and a Polytechnic". The revised Constitution of 1874, Article 27 speaks of the already "existing" Polytechnic.

In actual fact the young Confederation, with the enthusiasm that characterized it at that time, had immediately exercised its right in respect of the Polytechnic and as early as 1855 all the preparatory work was completed and the Institute could open its doors to the benefit of Swiss youth athirst for knowledge and to the advantage of the entire Swiss economy. The time of the Institute's foundation was well chosen. The breaking down of all the guild barriers in the first half of the last century, the principle of commercial and industrial freedom which corresponded to the liberal spirit prevailing at that time and which meant, simply, the right of the individual to choose his profession and place of work as he thought fit, had released unprecedented energies. The triumph march of the machine, driven first by steam and later by electric power as well, was beginning, and the whole life, both of the individual and of the community, was transformed. Chemistry and pharmaceutics received a new impetus and scientific research penetrated into many another field dominated until then by custom and traditional methods of work.

There thus arose a constantly growing need for technically trained youths. The young Federal Institute could only satisfy this need by making tremendous efforts and by becoming ever larger.

A few figures will serve to illustrate this. The Institute began its work in the autumn of 1855 with a teaching staff of 45 (professors, staff lecturers and outside lecturers). Today it has a staff of 282, to which must be added another 237 assistants. Whereas the number of students a hundred years ago was only 68, it has grown almost uninterruptedly to the present normal figure of between 2,800 and 3,000 matriculated students; in addition, there are a very great number of non-matriculated students. About one sixth of the students as a rule come from abroad — a proof of the high esteem enjoyed by the Institute which is now able to award some 450 diplomas each year.

Owing to special circumstances, such as studies being interrupted by frequent military service and an exceptionally large influx of students from abroad, numbers of over 4,000 were attained during and immediately after the War, but this was not regarded as an ideal state of affairs.

A brief summary of the most important facts dealing with the subjects taught shows how the Institute keeps pace with the demands of industry and technology. When it was opened, it had six departments: building, engineering, mechanical engineering and chemical engineering, forestry, philosophy and political science. An observatory was built in 1871. A mere six years later saw the foundation of a military science department. In 1879 an institute was established for the testing of building materials and it has developed into the Federal Institute for Testing Materials (EMPA) which is of great importance today. The training of agricultural engineers was begun in 1888. An industrial engineering institute was founded in 1929 and an institute for economic research in 1938. The fact that special institutes, departments or laboratories had to be set up for physics, photography, aerodynamics, applied acoustics, high frequency radiography, etc., was due to the development of technology. Worthy of special mention is the foundation in 1937, of the industrial research department of the technical physics institute, which is intended to serve in particular the Swiss national economy.

The ETH (the familiar abbreviation for the Federal Institute of Technology) has had the good fortune to possess throughout its entire history experienced and often internationally respected professors and lecturers, as well as extremely competent directors and, later, rectors. The Institute is governed by the seven-man Swiss Educational Board, appointed by the Federal Council and headed by its official chairman.

The Federation subsidizes its Institute today to the extent of some 10 million francs a year; over and beyond this it periodically grants credits for any buildings, extensions or equipment that may become necessary. On the last occasion in 1946 credits of 27 million francs were approved by the Federal



Assembly. At this very moment a new request for a credit of more than 15 million francs is being examined by the Councillors; of this credit 3½ millions is intended for a new institute which will carry out forestry experiments. At the same time approval will be sought for a project dealing with the construction and management of an Institute sports' ground, because the physical fitness of the students must also be catered for. The project has the backing of the Canton of Zurich.

As can be seen, the Confederation does not neglect its child; but it should be stated here that private economy, too, particularly the industries interested in the Institute's work, has again and again manifested its gratitude and recognition in the form of extremely generous donations and assistance. This is testified by, among other things, the many funds, foundations and legacies which are administered by the Confederation and total almost 10 million francs. Recently, promising and so far very successful efforts have been made to present the ETH with a new, substantial birthday gift on the occasion of its jubilee.

This close link between the Institute and industry may be described as exemplary. It results quite naturally from Article 1 of the Regulations which defines the Institute's task in these words:— "The Federal Institute of Technology's object, in accordance with the law governing its foundation, is to provide the necessary scientific training for technical professions and for specialist teachers of mathematics and natural sciences, as well as to cater for studies of a general educational nature and for scientific re-

search". It is obvious that the Institute, apart from training students, devotes itself primarily to basic research, which directed research is mainly the task of industry; nevertheless it is quite impossible to draw a definite line of distinction between these two fields and any attempt to do so would necessarily lead to an undesirable rigidity.

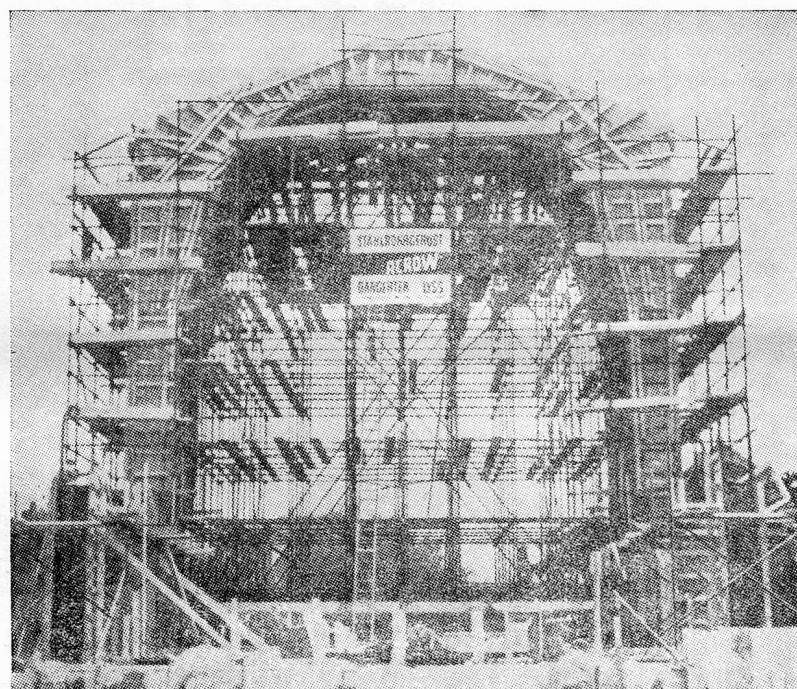
There is a mutual and fertile give-and-take between theory and practice. The Institute's high ideal is still the freedom of teaching and learning, as well as the freedom of research except where this is restricted by the regulations governing the award of diplomas.

It would be tempting to enumerate the important and often honoured Institute teachers who have lent their brilliance to the ETH in the course of the last hundred years. The list, however, would be too long and any curtailment of it would be bound to lead to injustice and might even give the appearance of ingratitude. Also, such an enumeration would not be welcomed by the majority of these prominent men who have fulfilled their high duty.

#### OUR NEXT ISSUE.

Our next issue will be published on Friday, November 25th, 1955. We take this opportunity of thanking the following subscribers for their kind and helpful donations over and above their subscriptions: Th. Erb, Wm. Preiswerk, Chs. Strubin, J. B. Brutsch, Ch. Bertschi,

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