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TECHNICAL RESEARCH & PROGRESS.

In Switzerland new industries have been brought into being by the ideas of bold pioneers. It is not sufficiently known and often forgotten that aluminium started its triumphant progress throughout the world, from the Swiss Works at the Rhine Falls. The Rhine supplied the power for generating the electric current that liberated the shining silvery metal contained in the inconspicuous looking alumina. The Aluminium Industrie A.G. of Neuhausen, Switzerland, must be given the credit of having not only created a prosperous Swiss industry, but also provided the world with a raw material which is even now indispensable and is likely to play a still more important part in the future, specially when ores of other metals become scarce as a result of the exhaustion of the mines. Formerly, Neuhausen controlled the aluminium production of the world. In recent times, this company has come to the forefront in connection with the manufacture of important aluminium alloys.

Another example of pioneer enterprise is the Viscose A.G. of Emmenbrücke near Lucerne, which from a very early date produced artificial silk from wood. Cellophane which is cellulose made into sheets and has therefore the same composition as artificial silk, is the invention of a Swiss, Dr. Jacques Edwin Brandenberger; the latter is the founder of a highly important industry.

Swiss engineers and manufacturers have played a leading part in the building of mountain railways as well as in the construction of steam and electric locomotives. The Swiss electric supply has been another all-important field of activity. The power yielded by the torrents and rivers is transformed into electric current for lighting and cooking, for instance, and distributed to the remotest mountain villages. Nearly all the Swiss railway lines are, at the present day, operated electrically.

Switzerland is a country deficient in raw materials; it has within its borders only very small resources in this connection, apart from hydro-electric power, if the latter is to be placed in this category. The country has therefore to rely on inventive power, industrial production and export of goods for acquiring from abroad the raw materials it requires.

The realisation that it was not sufficient to wait for accidental inventions, but that it was necessary to carry out intensive and systematic research, if Swiss goods were to retain the high reputation they had enjoyed up to then, led a little time ago to the incorporation in the Federal Technical College at Zurich of a new Institute of Applied Physics. Furthermore, in March 1936, a "Society for the Advancement of Research in the field of Applied Physics at the Federal Technical College" was founded. It includes a special Department for industrial research, which has the following objects in view :

1. General researches in the field of physics, which are likely to stimulate or extend industrial activities.
2. Development of promising inventions, up to the stage where they are mature for industrial utilisation.
3. Assistance to the Swiss Industry of an advisory nature. There are considerable funds available.

Switzerland is thus amongst the leading industrial States, in spite of its limited area and small population of about 4 millions.

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