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Autor: A.B.
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Swiss Industry and Technical Science

LOOKING at the clean towns and pleasant villages of Switzerland many travellers wonder what the people do for a living. Sometimes the Swiss wonder themselves. In former days, Switzerland was mainly an agricultural country, exploiting her forests and grazing-lands, cultivating cerials and the vine. The cmall-farmer class, which today forms one-quarter of the population, has always constituted one of the most vital forces of the nation. But although agriculture is still a necessity and important factor in Swiss economic life, during the past century, Switzerland has created an industrial structure which has now become an essential element of her prosperity. Industry absorbs 45 per cent of the nation's workers, while agriculture accounts for only 22 per cent.

Thanks to the nation's spirit of enterprise, technical skill and methodical organisation, Switzerland holds an economic importance relatively far superior to her size. Throughout the Jura regions, in Geneva, Schaffhausen, Glarus and St. Gall, still more in and around Zurich and Basel, there are factories and manufacturing plants employing almost a million workers. As Switzerland has practically no natural resources, Swiss industry must buy raw materials on foreign markets and export its products in payment of its purchases.

The oldest of the many industries in Switzerland is the textiles industry for which the raw wool and cotton, as well as the silk cocoons, have to be imported. Switzerland was one of the first countries in Europe to manufacture silks, laces and embroideries, and in this respect Zurich has always been a rival of Lyon and Milan, while Basel is famous throughout the world for its ribbons.

Cotton spinning and weaving were introduced into Switzerland in the 17th century and today this flourishing industry centres in the cantons of St. Gall, Glarus and Zurich with branches specialising in embroidery and lace in Thurgau, St. Gall and Appenzell. It is also in the canton of Appenzall that the finest hand embroidery is still done. The knitting and hosiery trade, the linen industry, even the manufacture of shooes, are all considered a part of the textile industry. Swiss shoes have always been an item of importance in the salons of the Paris designers.

At Wohlen, of Aargau, twenty-five firms are occupied with the manufacture and sale of straw for hats and are considered as a branch of the textile trade.

Yet, despite the prominence of the textile trade, with its various branches, it is the heavy industries which hold first place—foundries, steel works, machine plants of all kinds—a position they share with the electro-technical group, famed for its turbines, generators and motors.

Switzerland has done much pioneering in the field of electricity. Its water-power is largely exploited. Not only are railroads, foundries and factories supplied with electricity but so is every house in the country, with the exception of remote stables and shelters in the high Alps.

The abundance of electric power plays an important role in the machine industry. This industry makes electrical equipment, water and steam turbines, motors, locomotives, high frequency switches, etc.

Engineers of Sulzer Bros., in Winterthur, have developed diesel engines for ocean transport. All over the world, diesel motors for ships are built according to plans laid in Winterthur, although Winterthur lies far from the seea.

The electrical industry provides a wide choice of products covering the generation, transmission, distribution and application of electrical energy. Owing to its size, the Swiss electrical industry is able to export a high proportion of its products in addition to supplying the needs of the home market.

In the middle of the war, Brown Boveri perfected the gas turbine locomotive. The most modern steam engine needs a ton of coal and nine tons of water to generate as much power as a gas turbine engine will produce on half a ton of crude oil. The additional 126 tons of air needed naturally do not weigh on the engine.

A particularly progressive invention of recent date is the pump plant, a form of inverted refrigerator. Small quantities of heat are drawn from waste steam or even any running water on hand and pumped to a temperature high enough for practical uses. The biggest heat pump plant

in Switzerland is in the Rhine Salt Works. The biggest one in the world, which evaporates ten tons of water an hour, is in a foreign aluminium works. Both were built by Escher-Wyss, of Zurich. Escher-Wyss also developed the variable pitch propeller to break the speed of airplanes when landing.

Another important group which has shown marked and rapid progress during the last twenty years is the machine tool industry.

The Swiss automobile industry is well-known for its heavy and semi-heavy lorries. Other important industrial products are machinery for flour mills and for food industries, paper-making machines, printing presses, packing machinery, optical and surveying instruments, meters, counters and typewriters.

Naturally the watch industry, which today extends from Geneva to Schaffhausen, will always be one of the principal industries of Switzerland and one with which the name of the country will remain most closely bound. In the course of generations, a numerous population has acquired great technical aptitude and a justly renowned skill. A tradition has thus been created by which the trade is so strongly rooted in the life of the population that even when times are bad, confidence is never shaken.

The jeweller's art is centred principally in Geneva, where a large number of specialists—engravers, enamellers, gold and silversmiths—have brought their work to a high level of perfection.

One other important Swiss industry is the chemical industry centring around Basel. Dye firms are situated in Basel while there are large concerns specialising in the manufacture of pharmaceutical products in Basel, Zofingen, Berne and St. Gall.

Names of Swiss chemical or pharmaceutical firms, such as Hoffmann-La-Roche, Ciba and Geigy, are famous throughout the world. D.D.T., a powder which kills all insects and yet is non-toxic to man, was invented by Geigy.

Certain products, such as sulphuric acid, have been made in Switzerland for over 100 years, while sodium chloride has for a long time been obtained from the Rhine salt beds and at Bex.

The electro-chemical industry embraces enterprises whose products differ widely, but whose manufacture has the common feature that a chemical conversion process by the direct action of electric energy is used. Among electro-chemically manufactured products, aluminium takes a leading place. It is made at Neuhausen, Chippis and Martigny and worked up in various factories. Apart from aluminium, metalic sodium (at Monthey) and iron alloys (Visp, Bex, Bodio) are manufactured electro-chemically.

The sipper is a Swiss invention, and the Swiss were the first to use tar to pave roads and to solve the problem of liquifying coal. The food and tobacco industries, chocolate manufacture, the production of cheese and condensed milk, the products of the Nestle concern, the preserving industry and the ceramic and paper industry, as well as the graphic arts, all flourish in Switzerland and contribute to making the standard of livng in this country what it is.

—A.B.

NEWS FROM THE CONSULATE

SWISS CUSTOMS ADMINISTRATION

DUTY FREE IMPORTATION OF GIFT PACKAGES

Decree of the Federal Council and Decision of the Federal Departments of Finance and Customs of February 23, 1960.

Gifts which private persons abroad send to private persons in Switzerland by post, or railway, or as air freight, are exempt from import duties, provided the total value of such gifts **does not exceed 50 Swiss francs** (i.e. the retail value on the foreign market). On the other hand, gift packages which are dispatched by firms are always subject to duty, even if the firm sends the gift on the order of a private individual, and despite the fact that the nature of the article is obviously that of a gift. Gift packages must be clearly marked as such in the customs declarations and shipping documents.

In connection with the articles herein after listed and which are included in gift packages, the exemption from import duties is limited to the quantities indicated, even if the total value of the articles sent is less than 50 Smiss francs.

Kind of goods:	**Max. duty free quantity:**
Manufactured tobaccos	100 cigarettes **or** 100 grams pipe tobacco **or** 20 cigars
Cigarette paper	100 leaves or pre-rolled papers
Alcoholic beverages:	
— up to 50 proof . . .	1 liter
— over 50 proof	¼ liter
Butter	500 grams

Gift packages must not contain more than 10 kilograms of meat or meat products, including canned meat and fish. If such packages exceed 2 kilograms, they must be examined by the veterinaries at border at the established fees for such examinations.
Articles which in consideration of their kind or quantity do not have the character of gifts, for instance goods which are merchandise reserves or which are not usually meant for private use, and articles which are not generally given as presents, are excluded from duty free importation.