

**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:** - (1973)

**Heft:** 1654

**Rubrik:** Technical items

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# TECHNICAL ITEMS

## WILL SWISS CHEMICAL INDUSTRY CONTINUE TO GROW AT THE SAME PACE?

Two economic indicators present a valuable picture of the extraordinary recent growth of the Swiss chemical industry: Exports of chemical products rose from approximately 1.7 billion to 5.8 billion francs a year from 1961 to 1972. This represented an increase of 263.4 per cent. The index of Swiss chemical production has increased from 84 to 194 points during the same lap of time. Both sets of figures are significantly higher than those achieved by the other sectors of industry.

These results naturally lead one to wonder whether they will be maintained indefinitely. In a recent article published by the Swiss Credit Bank magazine, Mr. Etienne Junod, President of the Vorort, the leading Swiss industrialists association, and a member of the Board of Hoffman-La Roche, analysed the reasons for past success as follows:

- Swiss chemical and pharmaceutical firms have concentrated on highly specialised products.
- They depend on the outlets offered by the world market.
- They stake their future (by undertaking efforts matched nowhere else in the world) on the research and development of new products.

Mr. Junod considers that Switzerland has good chances of keeping its lead in pharmaceuticals, dyestuffs, agrochemicals, perfumes and flavouring agents. He adds however, that our industry will not be able to profit from the pick-up in world trade and the present expansion of the American economy because its productive capacity is taxed to the limit and can't be increased owing to restrictions on imported labour.

But in the long term, he notes, there are no reasons to doubt that our chemical industry will not maintain its dominant international position as "chemistry never ceases to offer new technical potentialities and penetrates ever more forcibly in every domain of our everyday life".

"Conditions are therefore at hand to ensure that the chemical industry will remain a growth industry", he concluded.

## RECORD TURNOVER AT MIGROS

The Migros organisation has registered a 4,302.7 million-franc turnover during 1972, 13.7 per cent up on the 1971 result. This record turnover is partly due to the rise in the cost of living, but also demonstrates the popularity of this co-operative chain of supermarkets with its own consumer philosophy among Swiss housewives.

The consolidated turnover (Migros also deals in petrol, banking, insurance,

evening courses, etc.), reached 4929.3 million francs. The organisation has already set foot in France, with a supermarket at Annemasse, and plans to open another one in Dusseldorf, Germany. Migros will probably follow this up with further investments in Common Market countries. Who knows, Londoners may perhaps shop at Migros in the not too distant future.

## ROLLER BEARING TRANSMISSION SCREW

At the International Exhibition of Inventions and New Processes recently held in Geneva, the Prize offered by the Swiss Office for the Development of Trade was awarded to a Swiss invention patented by an engineering office in Bienne. It is a roller bearing transmission screw for converting a rotary movement into a linear movement and vice versa. The fields of application of this screw are many: microtechnics, measuring instruments, numerically controlled machine tools, chemical and automobile industries, etc. The main characteristics of this device, which revolutionises mechanical transmission systems, lies in the conception of the screen consisting of a single pillow-block and one or more precision ball bearings. The different ways of mounting are many: simple, in V, stretcher, with possibility of engaging and disengaging while in motion etc. This system offers many advantages: the machining of the parts being simple and classical, the cost price is comparatively low; its geometrical characteristics make for precision of adjustment and all movements are carried out smoothly and silently. This device comes in a very wide range of sizes, the minimum thread diameter being 1 mm.

## NEW AUTOMATIC BUILDING-SITE LEVEL

When a levelling instrument is used on a building site or in manufacturing or assembly work, it is seldom handled with velvet gloves. Consequently these instruments have to be made sufficiently strong to provide dependable service in spite of the roughest handling. Well aware too, of the necessity for these levels to be simple to operate, the technicians of a Swiss precision engineering and optical firm have produced a new building-site level. This instrument is resistant to blows, shocks and even being dropped. The objective, bulls-eyes level and horizontal circle are built as far as practical in the housing itself or protected by it. Even a not very skilled operator quickly learns to use this instrument. The joint-head tripod, the erecting telescope, as well as a new diaphragm which provides a warning signal all help simplify and considerably speed up operations. A red warning

diaphragm appears in the field of view of the telescope whenever the level is so poorly levelled that the compensator is no longer free to move. Another new feature is a built-in cross-sight for instruments without horizontal circles. This cross-sight makes it possible to take sights to either side of the level, at right angles to the line of sight. This new level is particularly useful on building sites where right angles frequently have to be laid out or checked.

## THERMOMETER FOR THE BLIND

The manufacture of "Cary" thermometers was recently taken over by a Bienne firm. Connected with watchmaking and backed by its years of experience in this field, this factory has added several improvements to this type of instrument, which possesses many advantages over the classical mercury thermometers. It is simple to use and avoids any possibility of error; after taking the temperature in the mouth, the armpit, fold of the groin or rectum, it is sufficient to remove the instrument and read the temperature—as one reads the time—on a dial graduated in degrees Centigrade or Fahrenheit. Made of metal and plexiglass, this thermometer is unbreakable and completely without danger to the patient. Shock-proof and very accurate, it is available in various versions: medical, with a special variant for the blind, and veterinary with models for both big and small animals.

## NEW TECHNICAL WATCH FEAT

In 1971, a watch factory at Le Locle launched the first movement ever manufactured with plastics. Today, six of this firm's watches have just been awarded a chronometer's certificate, one of them even with a special mention. This feat is all the more remarkable as it is impossible to retouch a plastic movement and as with the exception of the hairspring, every single part is necessarily mass-produced. The fruit of ten years research, the making of the plastic calibre by the Le Locle firm calls for a completely new watchmaking technique: micro-injection casting, which does away with the machining and many costly operations. The framework of the movement comprises three parts only: the plate, main bridge and balance-cock. Only the balance wheel and hairspring, the spring-drum and the winding crown are still made of metal. Just like metal calibres, this highly reliable movement can be produced in different qualities. In addition it possesses many advantages over the traditional movements: in particular it is self-lubricating and has no screws, which does away with the causes of the most frequent breakdowns in mechanical watches.