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## IPRs Pact: Yet Another Landmark

*Focus*

*Deliciously Yours*

Founder Chairman  
**Late Shri R.K. Prasad**

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## Dear Reader,

Greetings. As you are aware, 2007- 08 marks the anniversary of 60 glorious years of friendship between India and Switzerland. The Friendship Treaty signed between the two nations on the Historic Day of 14 August 1948, the first of such treaties inked by Independent India, has laid foundations for the edifice of model bilateral relations between the two nations. This happy bonding received a further boost with the signing of a Memorandum of Understanding (MoU) between India's Commerce and Industry Minister Kamal Nath and Switzerland's Economic Affairs Minister Doris Leuthard on the crucial issue of Intellectual Property Rights (IPRs). The MoU envisages the setting up of a joint working group to look at the various aspects of IPRs, the implementation of which could benefit of both the countries. Leuthard also discussed with Kamal Nath and Finance Minister P. Chidambaram, the prospects of India signing an agreement with the European Free Trade Association (EFTA), of which Switzerland is a member. The cover story of the current issue of Indo-Swiss Business looks at the IPR deal as well as EFTA and their implications for India. Then we have a report on the proceedings of the second Swiss-City of London Round Table Conference on financial services, which called for a principles-based approach instead of one based on rules. In the Focus section, the magazine presents the interesting historic perspective of the origins and evolution of chocolate, from cocoa to the most sophisticated, crunchy bar. It also contains the annual review of the chocolate industry for 2006, which has turned out to be one of the best years for the most prized Swiss product. The rising global prices of dairy products have offered the Swiss farmers a good enough reason to milk their cows more to make some creamy profits. We carry a report. There is also a write-up on a presentation on patents and incremental innovations in the pharmaceutical industry by Novartis Vice Chairman and Managing Director Ranjit Shahani at the recent IPRs conference in Mumbai organized by Indo-American Chamber of Commerce (IACC). In Switzerland, the nature nurtures culture and when spring heralds summer, events that mesmerise one and all, especially the tourists unfold across the country. A write-up by Dilnawaz Bana appears in the tourism section. The picturesque Switzerland has a number of ancient castles nestling in the Alpine slopes, many of which have been converted into luxury hotels, offering modern amenities amid exotic medieval ambience. We carry a feature. The issue carries as usual all other interesting regular features.

Wish you happy reading



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## Indo-Swiss Ties Get Further Boost IPRs Pact: Yet Another Landmark

India and Switzerland, which are celebrating 60 glorious years of their abiding friendship, have sculpted yet another milestone in their understanding, by signing a Memorandum of Understanding (MoU) on an otherwise contentious but crucial issue of Intellectual Property Rights (IPRs). The MOU was signed between India's Minister for Commerce and Industry Kamal Nath and Swiss Economic Affairs Minister Doris Leuthard who visited India recently. This landmark understanding on IPRs is significant and is expected to further boost bilateral trade between India and Switzerland. During her stay in New Delhi, Leuthard also met India's Finance Minister P. Chidambaram and discussed the prospects of a trade and investment agreement between India and the European Free Trade Association (EFTA), of which Switzerland is a member.



As it is, Indo-Swiss bilateral trade, which stood at \$2 billion in 2006 is expected to touch \$3 billion in 2007. Swiss exports to India include high value machinery, precision instruments, pharma and chemical products. Indian exports include textiles and garments, precious stones and jewellery, etc, coffee, tea and hand-knitted carpets. Today, the balance of payments is in favour of Switzerland. However, the traditional structure of this country's exports to Switzerland is expected to undergo a radical change in the near future with India emerging as an exporter of industrial components of world quality. Besides, there are areas of India's growing export clout software services and contract research in various fields which again may counter balance Indo-Swiss trade in India's favour.

Soon after signing the MOU, Kamal Nath said the MoU would benefit closer cooperation between the two countries in fostering the protection and promotion of intellectual property rights. The implementation of this memorandum will be jointly by the Office of the Controller General of Patents, Designs & Trade Marks, Department of Industrial Policy and Promotion under the Ministry of Commerce & Industry, Government of India and the Swiss Federal Institute of Intellectual Property.

**The MoU envisages the setting up of a Joint Committee to develop a dialogue on issues of intellectual property that will encompass:**

- Exchange of views, information and experiences regarding the protection of intellectual property at the national level;
- Dialogue related to international issues concerning intellectual property;
- Serve as a forum for consultations to address specific issues in the area of

intellectual property in the bilateral relations of the Parties;

- Development of continued institutional cooperation for regular technical exchanges between intellectual property institutes in the two countries;
- Exchange of experiences between India and Switzerland in training on intellectual property;
- Development of appropriate modules and curricula for such trainings;
- Joint studies on specific intellectual property issues;
- Exchange of experiences and best practices regarding the raising of public awareness on the role of intellectual property rights;
- Discuss strategies aimed at preventing the manufacture, distribution, sale and consumption of counterfeit and pirated products as well as at raising public awareness of the damages caused by counterfeit and pirated products;
- Exchange of experience and dialogue on cooperation in the area of protection of geographical indications;
- Exchange of experience and dialogue on cooperation in the area of protection of traditional knowledge.

**Both sides agreed that the Joint Committee would meet once a year in India or Switzerland alternately.**

India has already entered into bilateral cooperation agreements on IPRs with United Kingdom, France, European Patent Office, United States Patent and Trademark Office and Japan Patent Office. The cooperation as per these agreements is in the areas of capacity building, human resource development and public awareness programmes. Matters such as legislation, policy and enforcement are outside the purview of these cooperation instruments.

India has also recently modernized its Intellectual Property administrative set up with the establishment of new integrated modern offices. Kamal Nath recently launched the e-filing facility for patent and trademark applications. With around 29,000 patent applications and more than one lakh trademark applications, the Indian intellectual property office is one of the major IP offices of the world.

### Swiss-Indian move to combat counterfeiting

Economics Minister Doris Leuthard has approved a plan with India's Minister for Commerce and Industry Kamal Nath, aimed at protecting intellectual property rights (IPRs).

In Switzerland, an Economics Ministry statement said the Indo-Swiss deal on IPRs would further strengthen the position of Leuthard, who is looking towards improving conditions for Swiss companies in the country.

The MoU, which was signed in New Delhi in August 2007, also aims at preventing the production, distribution and sale of counterfeit products. "It envisages an exchange of information and experiences between delegations as well as the possibility of involving representatives from trade and industry on a case-by-case basis," the statement said.

India is frequently criticized because of what Western countries



consider weak IPRs. Counterfeits are reckoned to cost the Swiss economy around SFr2 billion (\$1.67 billion) per year.

The Indo-Swiss talks on IPRs came a day after a court in the southern city of Chennai rejected a case by the Swiss pharmaceutical giant Novartis over Indian patent laws. They deny protection to drugs patented before 1995, modifications or new forms of old medicines. However, the case over the blockbuster anti-leukaemia drug, Gleevec, is still pending.

### Possible Pact with EFTA

During the meeting with Nath and Finance Minister Chidambaram, Leuthard also discussed ways of improving general conditions for Swiss businesses in India, the Economics Ministry said.

Talks also focused on future prospects for international negotiations on liberalizing trade as well as the moves for a possible trade and investment agreement between India and the European Free Trade Association (EFTA), which includes Switzerland, Liechtenstein, Norway and Iceland.

Leuthard and Nath had already met in March for preliminary talks in Zurich. The Swiss economics minister visited China in July and Brazil, another emerging economy, earlier this year.



Switzerland's Minister for Economic Affairs Doris Leuthard had, in an interview with Economic Times, India's leading financial daily, touched a range of subjects of mutual concern for trade and commerce between the two countries and the possible India-EFTA pact. Following is the reproduced text.

### **How do you look at the proposed India-EFTA trade and investment pact?**

Switzerland has entered into more than 16 trade agreements with various countries and we are convinced that free trade agreements are helpful for both sides. India is a major trade partner and we would indeed like to have a trade agreement with the country. We are hopeful that by December this year we would be able to conclude our initial discussions and open negotiations.

While the agreement would certainly benefit both the services and industrial goods sector, there is also scope for India in the agriculture sector. Switzerland is a net importers of agriculture products and we could look at importing farm produce from India as long as the quality requirements are met.

### **What does Switzerland expect to gain out of the agreement?**

We are leading exporters of machinery to India and we would like to maintain that for a couple of years. We are also looking at increasing our presence in banks and the pharmaceutical sector in the country. My government is

also requesting India to lower the duties on watches, which are at present very high.

### **Pharmaceuticals is a sunrise sector in India. Won't there be intense competition in the sector for Swiss companies?**

India's health care system offers huge opportunities for everybody. I believe competition will be good for the industry.

### **Do you have any plans of supporting Novartis following the Madras High Court's decision to reject its claim that India's patent rules were not compliant with TRIPS?**

None at all. It is normal for governments to discuss such cases when a particular company points towards a certain problem. But when a matter goes to court, it is none of my business. Then, it is purely between the company and the country's legal system. We would not want to get into that.

### **Do you think India's patent regime needs to be overhauled?**



Till now, we have not faced any problems with India's patent system.

### **You said that Switzerland is interested in the banking sector in India. What are you looking for?**

We want India to give more licences to Swiss banks. A number of banks from the country, including UBS, applied for licence in India long back. They are still waiting. I am holding discussions with India's finance ministry on the need to open the banking sector more.

### **As part of the India-EFTA agreement, India would certainly look at easier movement for professionals and more work visas. Are you ready to offer more in this area?**

We will definitely look at the issue as part of the EFTA agreement. We will have a dialogue in the EFTA commission about this and arrive at a decision. We would love to have more IT professionals from India in our country. But I guess, India also needs its IT professionals.

### **Do you have plans of a follow-up visit?**

Yes definitely. Our country's President is visiting India later this year. And I plan to visit again next year with a big business delegation.

### **Are there areas in the World Trade Organisation negotiations where India and Switzerland could cooperate?**

Both India and Switzerland are part of the group of friends of geographical indications (GIs). Both the countries want that the names of the special products originating from special places within our countries should not be used by

others.

Unfortunately, many countries do not understand the significance of GIs at all. We are making special efforts to see that other countries understand the importance of GIs.

### **Swiss Flood Aid for Indian Sub-Continent**

In a separate development, Swiss charities, including the Swiss Red Cross, have pledged emergency aid worth SFr1 million (\$800,000) for the victims of the floods in Southeast Asia.

Several aid groups are assessing the needs, according to a statement by the Swiss Solidarity Foundation, which is collecting additional funds. The organization said drinking water, decontamination tablets, food, clothes, shelters and medication were a priority in a first phase.

For its part the Foreign Ministry said that it was in contact with the Swiss Agency for Development and Cooperation's offices in New Delhi and Dacca to respond to emergencies. But the ministry said neither India nor Bangladesh had made an international appeal for aid. "The SDC intervenes only when responding to the green light of the concerned government," a SDC spokesman said.

Several hundred people have died and an estimated 20 million others have been forced to leave their homes as a result of the monsoon floods in India, Bangladesh, Nepal, Pakistan and Myanmar over the past weeks.

Millions of people could fall ill with malaria, dengue fever and other diseases if emergency aid does not reach those stranded by flood waters within days, the United Nations warned. ■



## Industrial activity picks up, inflation remains low



## UBS Forecasts Strong Growth For Swiss Economy In 2007

UBS - Switzerland's largest bank has raised its 2007 growth forecast for the Swiss economy to 2.6 percent from 1.8 per cent, citing strong and broad-based business activity. UBS has also announced that it saw growth for 2008 of 2.3 percent compared with its previous forecast of 2.0 percent.

In June 2007, the Swiss National Bank also upped its forecast for 2007 and announced an interest rate increase. Other leading indicators, including BAK Basel Economics and the Swiss Economic Institute (KOF), have similarly refurbished their outlooks.

"Economic activity is not only robust but also broadly based, which inspires confidence. Most economic indicators point to sustained positive momentum," the bank said in a statement.

"Foreign trade is also expected to have a positive impact due to sustained economic growth and the improved competitiveness of the Swiss economy following the weakening of the Swiss franc."

The franc is at an eight-and-a-half-year low against the euro, pushed down by a low short-term benchmark interest rate of 2.5 percent. Investors are borrowing the Swiss currency to invest in higher-yielding assets. UBS said the Swiss economy grew by 2.7 percent in 2006 and it continued its surge in the first three months of 2007. Real GDP (gross domestic product), when extrapolated for the full year, grew by 3.2 percent. This was the sharpest rise since the third quarter of 2005 and was well above the long-term average.

Recovery in the labour market was in full swing and should continue to lift consumer sentiment in the coming months, according to UBS. The resulting rise in employment and the expected increases in real wages were having a positive impact on disposable household income.

### Industrial growth

UBS added that equipment spending should increase

sharply over the next few quarters, given healthy orders and profits. It said it was therefore confident that private consumption would continue to support the economy.

Recently, the Federal Statistics Office reported that Swiss industrial production excluding the construction sector grew by 7.3 per cent compared with the first quarter of 2006. Growth was seen in almost all sectors, it said, especially mining, vehicle manufacturing, the leather industry, electronics and the timber industry.

### Inflation

UBS added that the medium-term prospects for low inflation rates remained intact, despite the strong economic momentum and the weakness of the franc versus the euro. This expectation was supported by structural factors such as intensifying competition in the Swiss domestic market and the further opening of the labour market to EU citizens. Overall, the bank expected consumer prices to rise by 0.4 per cent in 2007 and 0.8 per cent in 2008.

Given the strong domestic growth, UBS said the Swiss National Bank should continue to pursue its policy of gradually normalizing monetary policy.

### Positive trend

UBS's positive outlook is in line with other economic organizations. At the beginning of this month BAK raised its outlook for 2007 from 2.1 percent to 2.5 per cent.

In April KOF raised growth forecasts believing the Swiss economy would continue to thrive. "We are growing above potential and will stay above potential, so we're in a phase of economic boom," said KOF head Jan-Egbert Sturm. "It's a very rosy situation and it's good news."

As mentioned earlier, the Swiss National Bank raised its key interest rate by 0.25 per cent to 2.5 per cent for the seventh quarter running, in a move that had been widely expected by the markets. The bank said that Switzerland's economy was "in excellent shape". ■



# 2nd Swiss - City of London Financial Round Table

## Towards A Principles-Based Market Regulation & Services

**More than 50 senior representatives of the British and Swiss financial services industries met in Zurich on 4 July 2007 for the second Swiss - City of London Financial Round Table hosted this year by the Swiss Bankers Association and actively supported by the Swiss Embassy in London.**



This year's Financial Round Table was devoted to discussing the merits of principles-based regulation as opposed to rules-based regulation for the financial services industries. The Swiss side was headed by Pierre Mirabaud, Chairman of the Swiss Bankers Association, and included Philipp Hildebrand, Vice-Chairman of the Swiss National Bank; Daniel Zuberbühler, Director of the Swiss Federal Banking Commission; Peter Gomez, Chairman of the SWX Group, as well as senior representatives of Swiss banks.

The City of London's delegation included Angela Knight, CEO of the British Bankers Association, Stuart Fraser of the City of London Corporation's Policy and Resources Committee; Thomas Huertas, Director of the Wholesale Firms Division of the Financial Services Authority; Stephen Sanders, Head of Group Regulatory Risk at the Royal Bank of Scotland; and Anthony Belchambers, CEO of the Futures and Options Association.

Pierre Mirabaud said: "The discussions and

exchange of professional experiences between both sides clearly confirmed the advantages of a principles-based approach to financial markets regulation and high-lighted the disadvantages of the bureaucratic, box-ticking mentality generated by the inflexibility of a strictly rules-based approach."

Speaking for the British delegation, Angela Knight said: "The many differences between regulators across Europe are better addressed through meetings such as these than through changes to the law or to rules. And for the industry, to operate in a competitive market place under regulatory principles rather than detailed rules will bring better results for customers and the industry alike."

### Objectives

The objectives of the Swiss - City of London Financial Round Tables are:

- to help bring about better regulation and supervision in both jurisdictions;
- to contribute to better regulation in third countries by actively shaping the ongoing evaluation of international financial standards and best practices;
- to promote national and international dialogue between and among the financial services industry, policy-makers, regulators and supervisors;
- to promote principles-based as opposed to rules-based regulation;



- to promote international convergence of regulatory approaches based on mutual recognition of equivalent (as opposed to identical or harmonised) regulation.

## Joint Declaration 2007

Following the 2007 Swiss - City of London Financial Round Table, the British Bankers Association (BBA) and the Swiss Bankers Association (SBA) issued the following Joint Declaration:

The British Bankers Association (BBA) and the Swiss Bankers Association (SBA), recognize the following advantages of a principles-based approach to financial markets regulation:

- It is easier to generate a set of principles rather than a set of detailed rules;
- Understanding a set of principles is easier for both staff and customers;
- Due to its greater flexibility, it is particularly suitable for a heterogeneous banking sector (e.g. where firms differ markedly in size, business areas, risk profiles, systemic relevance, etc.);
- The financial services industry has more flexibility to develop its own compliance ethos within the context of its own markets,



legislative backgrounds and cultures;

- A principles-based approach encourages a cooperative and compliance-oriented relationship between a firm and its regulator and facilitates mutual recognition of financial regulation among regulators;
- A principles-based approach encourages the industry to take a risk-based approach to properly conducting its business in that a firm can decide what resources it will allocate to cover higher-risk business activities. This approach is not only more cost effective but also supports key regulatory objectives such as the control of systemic risks;
- Firms are in a better position to respond to market signals and to balance risks (market risks, operational risks, legal risks, reputational risks, etc.) with business opportunities. Such firms will tend to be more competitive, innovative and thus stronger: This will go a long way towards meeting all main regulatory objectives of systemic risk control, protecting customers, and enhancing competition and a level playing field;
- Well-managed firms will derive a regulatory dividend from a principles-based approach in the form of, for example, relatively lower levels of regulatory capital, less frequent risk assessments, greater reliance on firms' senior management or less intensive risk mitigation programmes.

Recognising the above advantages, the British Bankers Association (BBA) and the Swiss Bankers Association (SBA) have agreed:

- to continue to cooperate and promote principles-based regulation;
- to encourage the respective regulators to cooperate even more closely and to work with them to understand any bilateral regulatory issues for banks doing business between the UK and Switzerland;
- to work together more closely on international regulatory issues of particular interest to Swiss and UK banks.

The first Swiss - City of London Financial Round Table was held in London on 30 June 2006 and hosted by the Lord Mayor of the City of London at Mansion House.

# Swiss Chocolate Industry in 2006

## Sweeter Than Ever Before

In 2006, in terms of both quantity and of sales value, the Swiss chocolate industry appreciably bettered the results of the previous year. This increase on 2005 was mainly due to highly satisfying developments in the export sector. On the domestic market, now at saturation point for high-quality chocolate products, total quantities sold went up slightly; revenues as such, however, were a bit subdued.

Over the year 2006, the 18 Swiss chocolate manufacturers produced record results from both the quantity and the sales-value angles. In a year-on-year comparison, sales went up 4.9 percent to 168,250 tonnes of chocolate products. Compared to 2005, sales across the sector rose 4.1 percent, reaching CHF 1,526 million. Of that total production, as much as 58.7 percent was sold abroad (2005: 57 percent).

The continuing improvement in consumer mood in Switzerland was to have a corresponding effect on demand for chocolate products. Again, it was the encouraging developments in the tourist business, so important to the Swiss chocolate industry that brought positive movement. Yet the hot summer weather slowed sales down for two months, noticeably so.

Domestic sales for the Swiss manufacturers amounted to 69,523 tonnes, which was 0.8 percent higher than the previous year. In terms of value, sales reached CHF 793 million (down 1.2 percent on 2005). The proportion of imported chocolate consumed on the domestic market rose once again and has now reached 29.8 percent. Given an annual domestic consumption of 90,134 tonnes of chocolate products (including imports but excluding cocoa and chocolate powder), that works out at an average consumption of 11.9 kg per capita, up 300 g on the foregoing year. The sales of semi-manufactures such as coatings and fillings for further processing in trade and industry climbed by 11 percent. The industry also saw demand for solid tablet chocolate without fillings and filled tablet chocolate two market segments in which many attractive novelties were launched go up 3.9 percent and 8.3 percent respectively. Seasonal products at Easter and Christmas time are developing nicely, up 4.5 percent.

In 2006, the upward trend in the export business continued its dynamic growth with foreign sales by Swiss chocolate manufacturers reaching 98,727 tonnes and thus 8.1 percent more than the previous year. In terms of



overall value, sales increased by an impressive 10.6 % and are now running at CHF 733 million a year. However, as on the domestic market, the largest growth was witnessed in the market segment for solid tablet chocolate without fillings and filled tablet chocolate (up 17.6 percent and 12.7 percent respectively). Gratifyingly, it was also found possible to boost the sale of semi-manufactures by 14.8 percent. With an export share of 19.5 percent, Germany as always led the 140 export markets ahead of France (12 percent), the UK (10.4 percent) and the USA (7.6 percent). Swiss chocolate enjoyed particularly successful sales in the EU countries of Belgium, Hungary, Italy, Norway, Poland and Sweden as well as Brazil, Canada, the Russian Federation, South Korea and in the United Arab Emirates.

For 2007, the industry is hoping for increasing growth on the world export market and a consolidation of its domestic market share. After all, products of a high and consistent quality, made with love and care, continue to act as the sine qua non for achieving those goals.

### The Swiss Chocolate Industry - Fact Sheet

Number of companies: 18

Number of workers: 4,275 (women 2,104, men 2,171)

Sales in tonnes: 168,250 (domestic 69,523, abroad 98,727)

Sales in CHF million: 1,526 (domestic 793, export 733)

Leading export markets & (Share of export turnover) Percentage: Germany 9.5, France 12.0, UK 10.4, USA 7.6.

Most important products: (Share of sales) Percentage: Bars 51, Small formats 5.2, Chocolate confectionery 20.8, Semi-manufactures (incl. powder) 18.5, Others (seasonal items, etc.) 4.5.



# High Cocoa Prices Wipe Out Sweetness from Chocolates



Swiss chocolate makers are warning that rising cocoa prices could lead to higher prices for consumers. Cocoa climbed to a four-year high in London towards the end of June 2007 after a plane carrying the prime minister of Ivory Coast, the world's biggest producer, was attacked.

According to the International Cocoa Organization (ICCO), the cost of cocoa has been rising steadily since the turn of the year. In June, the closing price in London for a metric tonne was \$2,149 (SFr2,613) 26 percent up on the January average of \$1,702.

Swiss food giant Nestlé, which owns the Cailler chocolate brand and also makes KitKat, said on Tuesday that it did not expect rising cocoa prices to have a profound impact on its business.

The Vevey-based multinational, which has two factories in Ivory Coast, says its cocoa needs are largely covered for the year and it sees no need to revise its organic growth target of 5-6 percent for 2007.

But spokesman François-Xavier Perroud warned that people could end up paying more for their chocolate if the price of cocoa remained high.

"If you are in a position of having strong brands, it is evident that you will pass on these prices to the consumer to some extent," he told swissinfo.

## Bad weather

Zurich-based Barry Callebaut, the world's leading chocolate maker, said higher cocoa prices were likely to be a reality for some time as the mid-crop in West Africa most countries have two harvests had been hit by adverse weather conditions.

"This is likely to have a negative impact on the size and quality of the harvest, and ultimately further drive up cocoa prices," said spokeswoman Josiane Kremer.

"Expectations for the main crop are not too good either,

so we expect higher cocoa prices in the medium term.

They could rise to £1,100-1,200 (SFr2,695-2,940) per metric tonne."

Barry Callebaut, which also has two factories in Ivory Coast, says the higher costs will undoubtedly have an effect on retail prices but says it is unable to quantify at this stage what this might be.

Lindt & Sprüngli said it was continuing to analyse the cocoa market closely but was unable to comment on whether it would have to raise product prices.

## Shortfall

But Franz Schmid, director of the Union of Swiss Chocolate Manufacturers, Chocosuisse, echoed the view that if the cost of cocoa continued to climb, manufacturers would have to respond accordingly. "Price rises will become unavoidable," he said.

In its most recent quarterly review of the cocoa market, published at the end of May, the ICCO predicted a global shortfall in supply this year.

The London-based organization says global production will fall 7.4 percent to 3.44 million metric tonnes, while demand will rise 1.8 percent to 3.55 million metric tonnes.

Laurent Pipitone, senior statistician at the ICCO, said that while the supply deficit was a clear factor in driving up prices, they were also being fuelled by a "poker game" over cocoa futures on the financial markets.

He said it was impossible to say whether the price would continue to rise or even collapse, but he added that early indications were that there would be a cocoa surplus in 2008. ■

# The Story of Chocolate, Sweetly told



The great botanist Carl von Linné (Linnaeus) was by no means the first to recognize the unique merits of the plant to which he gave the botanical name of "Theobroma Cacao L." "Theobroma" means "food of the gods". Cocoa was already recognized as such by the Toltecs, Mayas and Aztecs, from whom we got the name "cacauatl". Around 600 AD the Mayas were already cultivating cocoa in Central America. They used the cocoa beans to prepare a very nourishing drink, which they called "Xocolatl", from which we probably get the modern word "chocolate".

The Spanish Conquistadors of the 16th century were also interested in chocolate. In 1528, Cortez took the first cocoa to Spain, along with the equipment needed to prepare the exotic drink, and it soon met with great approval in the Spanish court. In 1615, the infanta Anna of Austria, who grew up in Madrid, introduced drinking chocolate to the French court when she married King Louis XIII. In Paris it became a badge of status and the fashionable drink of the aristocracy, and from there it spread throughout the whole of Europe. Whereas in the 19th century, the importance of drinking chocolate declined, solid chocolate, which had its origins in France in the years following 1830, grew in importance.

## Chocolate arrival in Switzerland

In 1819, François-Louis Cailler opened one of the first mechanized chocolate production facilities in Corsier near Vevey, establishing the oldest brand of Swiss chocolate still in existence today. Thus chocolate had finally arrived in Switzerland, where it was soon to find its greatest patrons and pioneers.

Philippe Suchard set up a chocolate factory in

Serrières in 1826. He was followed by Jacques Foulquier (predecessor of Jean-Samuel Favarger) 1826 in Geneva, Charles-Amédée Kohler 1830 in Lausanne, Rudolf Sprüngli 1845 in Zurich, Aquilino Maestrani 1852 in Lucerne, later moving to St. Gallen, Johann Georg Munz 1874 in Flawil, and Jean Tobler 1899 in Berne.

Daniel Peter founded a chocolate factory in Vevey in 1867. After many attempts, he succeeded in combining chocolate with milk, an obvious but difficult move, thus inventing milk chocolate in 1875. Rodolphe Lindt opened a chocolate factory in Berne in 1879. He developed "conching", a process which created the world's first "melting chocolate". Many other Swiss entrepreneurs set up companies over the next few years, their activities helping to shape the reputation of Swiss chocolate, which soon became known throughout the world.

## Swiss chocolate flourishes

The years between 1890 and 1920 saw a real blossoming of the Swiss chocolate industry, coinciding with the golden age of Swiss tourism. Members of the top echelons of society throughout the world who spent their holidays in Switzerland came to know and appreciate Swiss chocolate, and took its reputation home with them. The initiative of Swiss chocolate producers conquered the world chocolate market between 1900 and 1918. Up to three quarters of Swiss chocolate was exported. Thus "little Switzerland" became a world power in chocolate. Of course, "Swiss chocolate" owed its global reputation not just to the quantities exported, but above all to its quality, which made it stand out above the great amount of chocolate produced in other countries.





## Through crises to a new golden age

The late 1920s saw the beginning of hard times for the Swiss chocolate industry. Increased protectionism, and the economic crises of the 20s and 30s, led to the loss of export markets. The Second World War brought strict import restrictions on sugar and cocoa, with rationing being introduced in 1943.

Since 1950, the Swiss chocolate industry has enjoyed constant growth. Automation and new chocolate production technologies have made great strides forward. Advances in economic integration, and the dismantling of customs controls throughout the world, have promoted the international exchange of goods. Manufacturers recognized the signs of the times and extended their market position in many parts of the world.

The development of new products and product forms in keeping with modern consumer habits, the maintaining of quality, the consistent pursuit of modernization in factories, and the promotion of professional training for employees, are the methods being employed by the Swiss chocolate industry to assert its global market position into the 21st century.

## Harvesting Cocoa

Cocoa is a particularly fine product of the tropics. The cocoa tree grows in the tropical regions to the north and south of the equator. Its fruits, which grow right on the trunk, are harvested twice a year and contain 20 to 30 white cocoa beans each.

The beans, after being removed from the skin, are shaken into heaps, covered, and left to ferment. This causes the beans to lose their capacity to germinate, and at the same time some of the chocolate aromas begin to develop. Once they are dry, the cocoa beans are ready for shipping. They are bought by processing companies at the international cocoa exchanges in London and New York.

## Manufacturing chocolate

Chocolate production depends on the ancient craft of the confectioner and the chocolatier. Even today, industrial manufacturing still follows the basic stages of the original craft, although highly sophisticated technical apparatus has taken over the work at every stage. As well as making it possible to rationalize production, this also guarantees consistently high quality. Cocoa beans are the most important raw material for making chocolate. After detailed quality control checks, the raw cocoa is cleaned thoroughly, crushed, roasted and ground, to produce cocoa paste. Mixing this paste with sugar and additional cocoa butter gives the basic mixture for traditional plain chocolate. If powdered or condensed milk is added, the result is the basic mixture for milk chocolate. For white chocolate, on the other hand, the brown cocoa paste is omitted. These three basic mixtures form the starting point for all types of chocolate. After mixing,



the basic mixtures are ground very finely and refined by "conching". This produces a chocolate mixture which is now ready to be made into solid bars, or bars filled with nuts, almonds, fruit or liqueur, filled chocolates, and many other specialties.

Now the delicious chocolates of various sizes are packed into wrappers and boxes, before finally being packed into large shipping cartons to be sent to the dealers' intermediary stores and to be exported all over the world.

## Quality

Connoisseurs recognize quality when they break a piece from a bar of chocolate: the break is hard and crisp, the edges of the break are clean, the surfaces do not crumble. The nose can also detect the quality: the smell of a fine chocolate is full and rounded, but never obtrusive. One then becomes very aware of true quality on the tongue: good chocolate melts like butter, does not stick to the roof of the mouth or feel gritty, and leaves hardly any aftertaste. Its flavour is fine, delicate, complete unique.

## Shelf life

Depending on the recipe, chocolate will remain at its best for up to 12 months, and plain chocolate for as long as 15 months. Chocolate should be kept at a temperature of between 10° and 18°C, protected from light and moisture. Chocolate is good for you! Seldom do we find concentrated in such a small space in a single food such large quantities of valuable and energy-giving substances such as proteins, carbohydrates, trace elements, vitamins and minerals, all of them completely natural. A 100 g bar of milk chocolate provides around 2300 kilojoules or 550 kilocalories of usable energy. Chocolate is good and healthy. It supports the balanced diet which should always be our aim, but it does not replace it. ■



# Milking Cows For Creamy Profits

Price increases for dairy products in Europe and a worldwide shortage of milk powder and butter are giving an unexpected boost to some Swiss farmers. It has also prompted calls for higher milk prices for dairy farmers producing mainly for the domestic market and renewed pressure on the agriculture sector amid moves towards liberalising global trade.

The price of low-fat milk powder has more than doubled on international markets since the beginning of the year, creating an unusual situation for Swiss dairy farmers. A tonne of milk powder is currently worth up to SFr6,000 (\$5,000) internationally, while Swiss prices have remained stable at SFr4,500. This allows Swiss producers of low-fat milk powder - used in chocolate or for ice cream - to make a healthy profit, since they also benefit from a state subsidy of SFr770 per tonne.

"For the first time Swiss farmers are milking their cows for competitive prices," is how the Sunday edition of the *Neue Zürcher Zeitung* newspaper put it. In the past most Swiss farmers struggled to keep up with their counterparts in neighbouring European Union countries and depended on subsidies and other state pay-outs.

What is worse for many farmers is that there has been political pressure to scrap subsidies as part of parliament's drive to liberalise the agricultural sector and adapt to global markets.

Meanwhile, producers of fresh milk are still feeling the squeeze. The Association of Swiss Milk Producers has called for a staggered increase of seven centimes per kilogram of milk by the end of the year.

"Demand is high, supply is low and farmers have a low income," the Association's President Albert Rösti told Swiss television recently.

Milk prices in the EU - of which Switzerland is not a member - are expected to rise by up to 20 percent this year and are having an impact on the Swiss dairy market.

"A higher price for fresh milk is justified to avoid putting farmers at a disadvantage against low-fat dairy producers," the milk producers said.

The Association is confident that it will find a solution in negotiations with the dairy and retail industries, Association Deputy Director Stefan Hagenbuch said..



The federal authorities have only limited means to influence the markets, according to Andreas Galler of the Federal Agriculture Office. As of September 2007, subsidies for low-fat milk powder will be suspended. Export subsidies will be scrapped from the end of next year as part of revised legislation. Galler is not surprised by the latest demands.

"It's understandable that in the current situation milk producers are calling for higher prices," he said.

## EU free trade

It remains unclear what impact the current prices will have on exploratory talks between Bern and Brussels on a free trade accord on agriculture.

Galler says the more favourable position of Swiss farmers could potentially make it easier to find support for a deal.

But the rightwing Swiss People's Party, which claims to represent farmers' interests, is sticking to its position.

"The free trade accord with Brussels remains a taboo for us, because open markets will put Swiss farmers in a very difficult position," spokesman Roman Jäggi said.

This highlights the temporary nature of the dairy price boom, says the Farmers Association.

"The gap between some Swiss farmers and those in the EU might have narrowed as a result of the high price, but it won't solve the fundamental problems," said its spokesman Urs Schneider.

He added that negotiations within the World Trade Organization had wider ramifications for the industry than a possible EU deal. ■

# Nestlé Completes Takeover of Novartis Food Unit



Swiss food and drinks giant Nestlé has completed its \$2.5 billion (SFr3.03 billion) takeover of Swiss pharmaceutical giant Novartis's Medical Nutrition business.

Nestlé was required to divest healthcare nutrition units in France and Spain to comply with demands by the European Commission, which was concerned by Nestlé's new dominance of the market for liquid food, used to feed patients intravenously.

The deal, announced in December 2006, gives Nestlé control of brands such as the Boost and Resource nutritional supplements and Optifast dieting products. It also sees 2,000 Novartis employees join the Vevey-based company. Shares in Nestlé firmed on the Zurich exchange following the takeover.

Novartis, meanwhile, announced it would invest €270 million (SFr445 million) to expand its cooperation with Austrian vaccine maker InterCell AG. The move means the Basel-based pharmaceuticals company will increase its share in InterCell to 16.1 per cent from 10 percent and gain access to vaccines against pneumonia, among other diseases.



## Core category

Based in Gland, western Switzerland, Medical Nutrition was expected in 2006 to generate around \$950 million in net sales and around \$90 million of operating income. It is active in around 40 countries.

Medical Nutrition, formerly part of the consumer health division of the Novartis's business, is the number two global supplier of intestinal nutrition, oral nutrition and medical devices used to provide essential nutrients to patients with special medical conditions. These products are often required when illness, surgery or disability limit the ability of patients to eat a balanced diet.

"I am very pleased that this acquisition allows us to become a very strong player in the strategic core category of nutrition, including specific research and development," said Peter Brabeck, Nestlé chief executive and chairman, in December 2006.

"This is a very important step for the Nestlé Group in its strategic transformation process to a nutrition, health and wellness company as it strengthens the core of our globally managed Nestlé Nutrition business."





Ranjit Shahani

Ranjit Shahani, Vice Chairman & Managing Director, Novartis, presents a paper at IACC IPRs Conference recently on the topic of the Value of Incremental Innovation for Public Health, in which he argues how it adds further value to patents. In this context, Shahani raises fundamental questions about incremental innovations and answers them.

### What is Incremental Innovation?

"Incremental innovations are sequential developments that build on the original patented product and could be of tremendous value in a country like India. Therefore such incremental innovations ought to be encouraged by the Indian patent regime."

In many areas this is how innovation has happened...

- In the field of flight the only three "breakthroughs" were:
- The original propeller engine flight machine
- The helicopter
- The jet engine aeroplane

Similarly in land transport:

- The bicycle
- The petrol engine motor car
- The train

The pharmaceutical arena is no different.

- Incremental innovation is the major means through which significant benefit to the health of patients worldwide has been, and can continue to be improved.
- "Breakthrough" innovations are extremely rare, hugely difficult and oft times serendipitous in medical research.

### The Drug Development Process

1. R&D Intensity as a Proportion of Total Sales
2. R&D Costs are rising rapidly
3. Additional Industry Trends in R&D
4. Industry's Value Proposition Remains Strong
5. Major Achievements of Innovative Drug Therapy

### Why Incremental Innovation in Pharmaceuticals is Essential for Business?

Health Outcomes Better Quality of Life; Greater Longevity

- Pharmaceutical advances have increased longevity and productivity
- Incremental improvements enable individualised treatment of the elderly

### Faster Treatment

- Patients who fail to respond to one drug often respond to another drug in the same class. E.g.
- Selective serotonin reuptake inhibitors (SSRIs)
- Beta-blockers
- Calcium channel blockers

### Safety

Side-effects experienced in many drugs are eliminated. E.g.



- Second-generation antihistamines have significant improvements through reduced penetration of the blood drain barrier, with no anticholinergic effects and drastically reduced drowsiness.

## Interaction with other drugs

- FDA has approved the first ever once-a-day AIDS treatment combining three existing drugs into one pill. This is a marked improvement over original AIDS treatments developed in the 1990s.

## Sub-population treated

- Reduced treatment costs
- Through increasing compliance, reducing hospital and physician visits and increasing worker productivity
- The sub-population which was not getting treatment earlier gets treatment

## Patients Convenience

- Tailoring treatment to the patient
- By providing product alternatives that permit treatments to be tailored to individual patient needs

## Productivity Benefits

- Increasing productivity through
- Reduced overall treatment costs
- Shortened or eliminated hospital stays
- Increased worker productivity and less absenteeism
- Reduced drug costs from increased competition among manufacturers

## Releasing other healthcare resources

- Products that provide additional therapeutic benefit (notably a reduction in illness and death) arise from a series of incremental steps rather than a quantum leap. And over the years, medical science moves on a long way.

## Tracking new diseases

**Evolutionary progress in pharmaceuticals can take several forms. E.g.**

- Introduction of a new medicine in an existing class
- New dosing or delivery forms
- New uses for existing medicines

## What is Section 3(d) of the Indian Patent Act?



- “For the purposes of this clause, salts, esters, ethers, polymorphs, metabolites, pure form, particle size, isomers, mixtures of isomers, complexes, combinations and other derivatives of known substances shall be considered to be the same substance, unless they differ significantly in properties with regard to efficacy.”

- One of the fundamental problems with the clause as it is constructed is that a test, such as that of “efficacy,” is almost impossible to perform at a time when the patents are filed.

## Need for Radical and Incremental Innovation

- The dramatic improvement in saving lives and health came about through both radical and incremental innovation.

- Pharmaceutical companies generate innovation in health needs by inventing new treatments for previously untreated health problems (radical innovation) and also developing new or improved uses for existing therapeutics (incremental innovation).

- The latter is crucial because the process of pharmaceutical innovation, just like any other innovative process, is built on constant improvements. This applies not only in biological sciences but also in physics, mathematics, engineering and about every human endeavour.

## The Status of Current Medicines: Continuous Need for Medicines Innovation

Importance of Incremental Innovation for Development

- Incremental innovation generally result in better health outcomes
- by increasing efficacy
- reducing side-effects and/or making administration easier
- resulting in improved compliance and
- greater effectiveness

## The Evolutionary Drug Innovation Process

Modern medicine would have been loser if...

- Analog research and development had not been carried out and new improvements not allowed to be protected by patents.

- Nitrates through transdermal patches
- Thalidomide
- Ciprofloxacin
- Vioxx
- Zelnorm
- Avandia??

## Why is Incremental Innovation Good for Public Health?

- Reduced overall treatment costs
- Shortened or eliminated hospital stays
- Increased worker productivity and less absenteeism
- Reduced drug costs from increased competition among manufacturers

## Bagh Prints

# Where Herbal Lustre Matches Tribal Creativity

Veerendra Bhargava

If you are looking for something exclusive in your dress or furnishing, the answer is Bagh prints, known for their block prints with vegetable dyes. The Bagh print derives its name from the village Bagh, situated about 150 km from Indore, commercial capital of Madhya Pradesh. The village name can be traced to its ancient temple dedicated to goddess Bageshwari Devi. Bagh is also known for its caves, which housed till a few years ago, ancient Buddhist paintings.



Inhabited in the region are largely Bhil tribal communities.

Varieties of dress material in Bagh prints range from sarees, kurtas, skirts, shirts and punjabi suits in cotton to silk, while in furnishing they are available in various forms of tapestry, curtains, table cloth, bed sheets, bed and pillow covers, etc. Even Bagh prints are used as elegant corporate gifts in the form of glass framed pieces. A few printers are also making innovations in office stationary by making file folders and file covers with Bagh prints.





The process of prints involves lot of running water at each stage. Quality (softness, hardness and chemicals present in the water) of the water is an important factor which decides the brightness of colours and its longevity.

### Technique for Printing on Cotton & Jute

Cotton cloth/jute is cut according to the size required. It is washed in river water, and dried on the riverbanks. When the cloth/jute dries it is rolled in bundles and soaked into the paste of castor oil and goat dung. It is then spread out on mud floor for twenty four hours.

Next day the cloth/jute is soaked again in the same paste and this process is repeated two to three times. This process is called the salt process. The cloth/jute is again washed in flowing river water after which it is temporarily dyed in harda (herb found in forest areas of Eastern Madhya Pradesh) paste and left to dry in the sun. This rigorous and methodical process makes the cloth/jute ready for the process of printing.

For printing there are two kinds of pastes made up of dhavda gum (extracted from dhavda tree and found in Bagh). One is the red paste and other is black paste, both of which have dhavda gum. This paste is filtered and poured into a wooden tray. The tray itself is organized according to specific requirement of printing. The cloth/jute is now printed with blocks and intricate designs are made by the skillful craftsmen. After printing, the cloth/jute is left to dry in the sun. Thereafter it is again washed in flowing river water and left to dry. After this the process of coloring begins.

One requires massive copper vessels to boil the ingredients which are: alizarin and dhavdi flowers. These are boiled with the printed cloth/jute for four to six hours. The color of the water becomes clear as it boils in the vessel. The printed red which has alum takes its color from alizarin and dhavdi flower which works like bleach on the unprinted portions which have been dyed in harda, makes it white after this process of boiling.

After the proper clarification of the color into red, white and black with the help of dhavdi flowers and alizarin, the cloth/jute is taken to the river bed to be spread in order to sprinkle water on it for three days. After this it is dried on pebbles and the cloth/jute is ready for the market in all its glorious colors and designs.

**Bagh prints are available at Mriganayanee stores of Madhya Pradesh Handicraft & Handloom Development Corporation.** ■





# Brain Drain Hits Rural Switzerland

Over a quarter of Swiss university graduates move from the country into large urban centres once they have received their degree, the Federal Statistics Office says.

Between 1998 and 2004, rural communes lost around 27 per cent of new graduates, whereas towns and cities gained between 19 per cent and 31 per cent more highly qualified young employees.

The Statistics Office has said in a recent study that urban areas acted as magnets because they offered more education and employment possibilities, a richer cultural life and greater individual freedom.

The study compared where students lived before their studies with their residence one year after they had ended them.

Almost all country areas of Switzerland lost highly qualified potential workers, whereas the big cities - Zurich, Basel, Bern, Geneva and Lausanne - absorbed an above-average number of graduates.

The regions worst affected by the brain drain were in east and central Switzerland, as well as the mountain areas of Graubünden and Valais. The central cantons of Appenzell and Uri lost more than 50 per cent of their talented young people.

Also badly hit were canton Thurgau (- 43percent), Basel Country (-42 percent), Glarus (-40percent) and Graubünden (-30 percent). In the Italian-speaking canton of Ticino south of the Alps, the drift away was less marked (- 8.2 percent).

## Why leave?

The study also examined the reasons why graduates were leaving rural areas and being drawn into cities in large numbers in some parts of Switzerland.

It found that leaving an area depended to a large extent on the state of local economy. In cantons with strong industrial and service sectors, the risk of graduates leaving was reduced by 18 per cent (industry) and 36



per cent (services).

Older graduates were more likely to leave their home cantons, the Statistics Office said. However, the younger they were at the end of their studies, the more likely they were to stay with their parents.

The Statistics Office noted that older graduates who had already lived away from their parents at the beginning of their studies didn't go back to living with them once they had they received their degrees.

It also found that the absence of specialized higher education establishments in a canton played a key role in the behaviour of young qualified people. The exodus rate of graduates from a canton with a university was 47 percent less than for those coming from a canton without one.

However, the study found that graduates from specialized higher education establishments as opposed to universities - tended to stay in their native cantons because their chances of accessing local labour markets were higher. ■

# Novartis Loses Patent Case in India

Swiss pharmaceutical giant Novartis says it is unlikely to continue its legal challenge of Indian patent laws after a court rejected the case. Watchdog groups said the decision was "a major victory for patients' access to affordable medicines in developing countries". But Novartis claimed patients would be denied new and better drugs.

The Madras High Court has said in its recent judgment that it had no jurisdiction on whether Indian law, which denies patents for minor improvements to existing drugs, contradicted international trade rules.

The row has been rumbling since January last year when the Indian Patent Office rejected an application from Novartis to protect the intellectual property rights (IPRs) of the leukaemia drug Gleevec.

India subscribed to World Trade Organization rules on intellectual property on January 1, 2005. But the country's own patent laws deny protection to drugs that were patented before 1995 or are modifications or new forms of old medicines.

Gleevec fell foul of this clause despite being granted patents in 36 other countries. The Basel-based company's decision to challenge the law through the courts sparked a wider debate about how best to provide essential drugs to millions of patients on low incomes.

Novartis argues that without patent protection pharmaceutical companies will be commercially discouraged from producing new drugs. But human



rights groups accuse big pharma of striving to protect profits at the expense of less well-off patients by blocking other firms from producing cheaper imitations, or generic versions.

## Case grinds to a halt

"This is a huge relief for millions of patients and doctors in developing countries who depend on affordable medicines from India," said Tido von Schoen-Angerer, director of Médecin Sans Frontières' Campaign for Access to Essential Medicines.

"We call upon multinational drug companies and wealthy countries to leave the Indian patents act alone and stop pushing for ever stricter patent regimes in developing countries," he added.

Novartis India vice-chairman and managing director Ranjit Shahani appeared to concede defeat. "We disagree with this ruling, however we likely will not appeal to the Supreme Court. We await the full decision to better understand the court's position," he said.

But Paul Herrling, the company's head of corporate research, said Indian patent law would have "negative consequences for patients and public health in India".

## Economic advantage

Earlier this year Herrling suggested that the row centred on preserving India's thriving generics industry that stands to gain commercially from relaxed patent laws. "It reflects an important battle that is ongoing in India. There are two groups of companies, the big industrials who are contemplating going into innovation and then there are the other ones who don't want to go into innovation and want to keep the privilege of copying drugs that still have patent on them," he said.

However, the lobby against restrictive patent laws has gained momentum in recent months with former Swiss cabinet minister Ruth Dreifuss this year coming out against Novartis's legal proceedings in India.

A separate hearing by the Intellectual Property Appellate Board on the refusal to grant Gleevec patent protection has yet to take place. ■



# Experts Call for Big Boost in Swiss Solar Power Output

Swiss solar specialists have called for a massive increase of sun-generated heat and power by 2020, covering at least 10 percent of domestic electricity needs.

The demand from the country's industry comes as the gap between Switzerland's pioneering research in the field and actual use of solar power continues to widen.

In June 2007, Swiss know-how was on show in New York with the arrival of Sun21, the first solar-powered boat to cross the Atlantic. The result was no surprise for Stefan Nowak, head of the solar energy programme at the International Energy Agency.

"Switzerland is among the top countries when it comes to research and development," he said.

Yet when it comes to domestic solar energy use, the Swiss are dragging their feet, or so it seems. Last year, sales of solar-powered products and related services only reached SFr22 million (\$17.9 million) a small figure compared to worldwide turnover worth SFr15 billion.

The solar power professionals association, Swissolar, wants to see that change. They would like to see the amount of solar heating used increase 20 times and sun-generated electricity twice as much.

The aim is to have one square metre of solar panels per inhabitant by 2020, with public services leading the way. If its targets are reached, two thirds of the country's

hot water will come from the sun, while one tenth of its electricity requirements will be covered.

The proposal is similar to the European Union's own solar action plan, and its goals can be reached according to Swissolar.

It says that there is more than enough roof space available that could be used for solar systems, and that if those surfaces were entirely covered they could provide a third of the country's electricity and half of its heating.

Hot water heating is definitely a growth market for the solar industry. In 2006, sales increased by a third, while the domestic market for solar electricity panels stagnated.

In Europe, solar heating was up by almost 50 per cent last year, and solar power rose by more than a third.

## Alternative energy sources

The slow growth of Switzerland's solar market contrasts with official and public concerns about ecology and climate change.

Energy specialists say this is because of the strength of the national hydropower industry, but also because businesses have yet to turn to alternative sources for electricity.

Michael Kaufmann of the Federal Energy Office reckons that the government has also failed to adequately promote solar power. To suggestions that this type of energy is not adapted to the Swiss climate, he answers that Switzerland's neighbour Austria has ten times more panels.

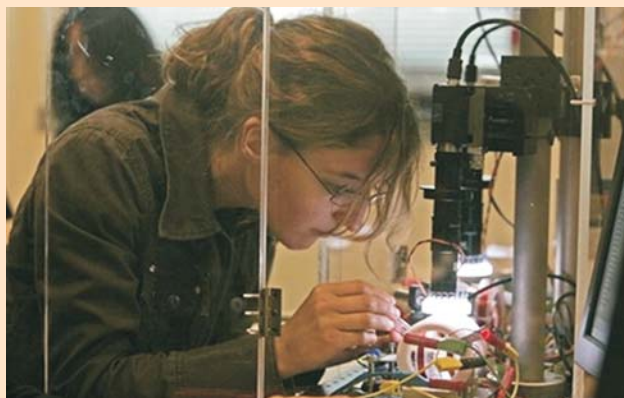
For the moment, the biggest problem remains the cost of solar power. While using the sun to heat water is now economically viable says Kaufmann, solar electricity remains an expensive option even though the price of fossil fuels continues to rise.

In the meantime, Swiss solar specialists will look abroad to expand their business. Last year, they exported SFr350 million worth of products. ■





# Wonder Chip to Prevent Energy Wastage



An intelligent computer chip designed to control electricity consumption could be the answer to current chronic energy wastage from household appliances.

The chip, designed at Zurich's Federal Institute of Technology, promises to dramatically reduce the consumption of appliances on standby and warn users when malfunctioning devices use too much power.

Energy watchdogs have welcomed the innovation that cuts the amount of electricity needed to power an appliance on standby from up to 40 watts to just 0.3 watts. Devices on standby are calculated to account for some 10 percent of the total electricity consumption of a typical household.

The designer, Ludger Hovestadt, said that the so-called dSID Chip could save up to eight per cent of standby wastage and a further 20 percent associated with inefficient appliances such as kettles that have become chalked up.

"The chips can communicate along normal power lines so they act like a team. The system can control power consumption and acts as a meter, telling users when an appliance is using more electricity than usual," said the professor.

"The chip is able to switch off any device that is not being used and to take over standby functionality of, for instance, a remote control using a fraction of the power. If the stereo is playing and the doorbell or telephone rings, the music will automatically go down. The interlinked system of chips can also act as a central system, switching off all the appliances and lights when

people leave the house.

## Mistakes made

"Nobody really wants to walk around their whole [house] checking and there are a lot of mistakes being made," Hovestadt added.

The Swiss branch of the World Wildlife Fund (WWF) welcomed the innovation that could help save household energy wastage. "Swiss households waste enough energy with standby appliances alone to power a large city like Zurich for a year," spokesman Fredi Luthin said. "It is very important that this is better regulated."

Because the chips use the normal power grid system to communicate, there is no need for the cumbersome and expensive electronic paraphernalia associated with similar systems. Hovestadt predicted that appliances installed with the chip should cost little more than traditional devices already on the market.

## Cost is key

According to energy consultant Thomas Bürki, the introduction of newer household appliances, such as energy hungry digital set-up boxes, made the need for an energy-saving system more acute. But he warned that costs must be kept down to make the chip a feasible commercial venture.

"It can be very hard to get manufacturers on board even if it costs only a few cents more. If you can convince the manufacturers then you have won the war," he said.

With this in mind, the federal institute has joined forces with German electricity supplier Yello Strom and energy think-tank Aizo to form a collaboration called digitalSTROM aimed at producing the chips commercially.

"We need a permanent, neutral, non-profit platform to establish an international standard system with commercial partners. There are already 10,000 chips in use in a test environment, and we hope to start commercial production by the end of 2009," said Hovestadt. ■

# Use more recycled paper, Swiss govt told

Swiss environmental groups have hit out at the federal authorities for failing to use more recycled paper. The news has raised eyebrows in a country which normally prides itself on being a champion of recycling.

The Swiss association for the promotion of ecological paper and ecology in the workplace (FUPS) and the "foretsanciennes.ch" initiative, launched by Greenpeace and the Fonds Bruno Manser, criticised the federal authorities recently for using less and less recycled paper.

They claim the percentage of recycled paper used in photocopiers and printers in government offices has continued to fall over the past 10 years from 51 percent in 1998 to only 33 percent in 2004.

They have demanded that at least 60 percent of paper used in federal offices be recycled and 20 percent be certified with the Forest Stewardship Council (FSC) green label.

"For years the government talks about sustainable development, but the share of recycled paper used by the federal authorities continues to drop," said Rahel Wunderli from foretsanciennes.ch.

"If you look at overall paper consumption and not just photocopy and printing paper the authorities appear in a better light," Daniela Feldmann, head of communication at the Federal Building and Logistics Office, said.

Federal Environment Office spokesman André Simonazzi said it would comment once a new federal environmental report is published. The production of recycled paper consumes one third less energy and water than that made with virgin fibres, and recycled paper is ten to 15 percent less expensive, FUPS said in a statement.

## Leading recycler

Switzerland is among Europe's leading recyclers of rubbish. In 2005 it recycled around 51 per cent of rubbish collected from households and small businesses, compared with around 60 per cent for

Germany and the Netherlands, and 25 per cent for Britain.

"Paper is the biggest part of this. In 2005 we collected 2.5 million tonnes of waste separately, of which 1.2 million tonnes were paper and cardboard. The recycling rate for paper was 74 percent in 2005 and rose to 77 percent in 2006," Peter Gerber, from the Federal Environment Office said.

While Switzerland excels in the recycling of glass (95 percent) and plastic bottles (70 percent), more can still be done for paper and cardboard, he claimed.



"Seventy-seven percent is a good result, but this could be increased by improving the collection and separation of paper and cardboard," said Gerber.

Recycling old paper is generally cheaper than incineration, according to the Federal Environment Office. Depending on the type of plant, incineration of a tonne of waste costs between SFr150-300 (\$124-248), while the processing costs SFr100-150 per ton, excluding collection costs.

## Who pays?

"The problem in the past was the financing of the collection," said Gerber.

For decades, refuse collection and disposal were financed by the communes via taxes and fees.

"[In the past] everyone in Switzerland knew that there was a paper collection, but when the commune had to pay for it, it was not always interested in collecting large amounts and so only did it irregularly. But it's been getting better over the past few years," he added.

"A new solution has been in place since the beginning of 2007 involving a minimum payment [by the paper industry] to the communes for the separate collections of paper and cardboard."

Waste paper is the most important raw material for the domestic paper and cardboard industries. Just under two-thirds of industry needs come from waste-paper collections.

"Swiss paper industries need used paper as they don't have enough raw materials to produce things like newspapers and cardboard," explained Gerber. "So it's not a surprise that the communes are collecting to sell on to the paper industry."

## Researchers find HIV- Resistant Genes

International researchers, co-led by a Swiss team, have discovered three genes in the DNA of HIV-infected patients that offer protection against the virus.

They say the findings should aid the search for a vaccine to boost the effects of the genes and help the body's immune system overcome infection.

The results, published recently in the journal Science, stem from the first ever study analyzing how the human genome responds to the virus that causes AIDS.

"We found three genes that were very powerful against the virus. If you have the good luck to have these gene variants, they will protect you from the virus," Amalio Telenti of Lausanne University's Institute of Microbiology said.



Researchers in Lausanne and Geneva analyzed the genetic make-up of 486 patients, screening blood samples for more than half a million variants to produce a "bar code" for each individual.

The data was sent to the United States where the genes

were ranked in a "hit parade" according to their capacity to fight off the virus.

"People have very different abilities of controlling the virus naturally. Clearly there is a human impact and we need to find the key to imitate this," explained Telenti.

The Lausanne professor heads the European arm of a vast genetic research project run by the Center for HIV/Aids Vaccine Immunology (Chavi) at Duke University in the United States, which has a seven-year, \$300-million (SFr360 million) budget to help develop a vaccine.

### Immune system

Two of the variants were found in genes controlling the human leukocyte antigen (HLA) system, which plays a major role in the immune system by identifying foreign invaders and tagging them for destruction.

Those behind the Chavi study say the latest findings will greatly increase the knowledge of why patients differ in how well they control the virus.

"There are some things that are useful for the pharmaceutical industry and others that are useful for science," said Telenti. "It's up to the people coming after us to examine the list and decide what use to make of the more interesting genes."

He added that virologists and immunologists were already "very excited" about one of the genes as a potential vaccine target. It is not the first time that a gene capable of blocking HIV has been found. One called CCR5 was pinpointed in 1996 and a vaccine is currently awaiting regulatory approval.



# Inside Switzerland: An Unusual Guide

An illustrated guide to Switzerland written in French and English takes readers off the beaten track and away from clichés of watches and chocolate.

"Petit guide de la Suisse insolite: Made in Switzerland" to give Mavis Guinard's book its full title introduces curious tourists to unusual aspects of Switzerland, explaining for example how Frankenstein's monster was "created" by Lake Geneva.

The guide charts how the English invented tourism in the Alps, which until the 19th century were unexplored. It also looks at Swiss heroes under a new light: instead of giving a formal biography of William Tell, it explores the impact of the "medieval Swiss Superman" on theatre, cinema and other commercial tie-ins.

Tell has shot apples for example in Schiller's play, Georges Méliès's film not to mention a Mickey Mouse cartoon. Many others who contributed to the making of Switzerland are described through their impact on literature and arts.



Almost everyone has heard of Frankenstein's monster, but how many know he was "born" in Switzerland on the shores of Lake Geneva? English author Mary Shelley, wife of poet Percy Bysshe Shelley, wrote the Gothic classic aged 19 when they were travelling through



Switzerland in the 19th century. During a dramatic storm, Mary had a vision between sleep and waking which would become the famous "Frankenstein".

Arthur Conan Doyle, creator of British detective Sherlock Holmes, also lived in Switzerland and has two museums devoted to him: one in Lucens, where his home is, the other in Meiringen.

## Practical advice

In "Made in Switzerland" the Alps are seen through trains, luxury hotels through their creators, including César Ritz, and lakes through boats.

"Switzerland's merchant fleet ranks among the largest of nations with no sea access (...) The world laughed when (...), an obstinate Swiss crossed the Atlantic alone by rowboat. But the world really gaped when these alpine landlubbers won the most fabled sailing trophy of all, the America's Cup," Guinard writes.

The guide comprises 20 chapters, which are sometimes accompanied by practical advice. Guinard, an American journalist who has lived in Switzerland for several years, originally wrote the book in English and then translated it into French.

Most chapters appeared in the International Herald Tribune, for which the author worked, between 1981 and 1995. The articles were updated for this guide. ■



## When Spring Smiles on Summer... Nature Merges with Culture

By Dilnawaz Bana



No matter what time of the year, Switzerland has something exciting to offer to one and all, big and small, native and tourist alike. The nature in all its beauty and diversity speaks for itself, it is there to be admired and explored. Spring and summer bring the long, warm days and sunny school holidays, so these are the tourist seasons par excellence: hiking in the woods, trekking in the hills, rafting on the rivers or sailing on the lakes; take your pick, you can't go wrong.

Then there are the cultural offerings like festivals and fairs, music and dance programmes and artistic performances, both Swiss and international, to balance out the outdoor activities and sports. For those interested in modern trends and design, the Watch and Jewellery Show in Basel in April 2007, which has already been written about at length, was definitely one of the highlights of the Swiss trade fairs. The Indian Pavilion roused a great deal of interest among the large number of visitors.

Another outstanding fair which features annually in the city of Basel is the art fair, this year ART 38, one of the best of its kind in the world today. Over 300 galleries from all the continents present works of art of over 2,000 artists of the 20th and 21st centuries. It is the ultimate thrill for the art connoisseurs and collectors. Of course modern contemporary art also has to do with a very personal taste and it may not be to everyone's liking. During the period of the art fair there are also many interesting art exhibitions in the various museums and art galleries of Basel and a networking with some other European cities.

Also in Basel, the city of trade fairs, in May 2007 there was the international Book and Media Fair, BOOKBASEL, which saw many prominent authors, publishers, illustrators, artists and other personalities from all over the world converge to present their works and exchange views with one another and with the daily visitors. Most of the books and the discussions were in German of course,

but there were also a substantial number of works in French and English. One of the most prominent personalities invited to this fair was the Nigerian author and Nobel Prize winner for literature, Wole Soyinka. Besides him there were well-known authors from Khirghistan, Arabia, Turkey, France, Germany, Sweden and the top grade authors of Switzerland. The famous Swiss television personality, war correspondent and author, Erich Gysling, brilliantly moderated, with ease and international flair, a discussion on the topic "How justified are wars". The fair also had a section for children's books and many related activities. Being Mother's Day, there were many families with young children at these stalls and it was heart-warming to see that their love for books has not faded, in spite of the inroads made by television, computer and cinema in our daily lives. It is really wonderful that in Switzerland such events are open to the general public and are not "by invitation only". This enables all people who are interested in these matters to have the opportunity to gain knowledge and broaden their perspective.

The fascination for India continues and in the city of Rheinfelden there was a weekend festival showcasing the arts and crafts of India, which was open to all. Many great musician, dancers and artists from India performed at this venue which saw a large number of visitors. It is really marvelous how much appreciation and knowledge of Indian art and culture the people of the West have and how they attend such gatherings in large numbers!

It is this continuous exposure to the various activities which makes the people aware of what is happening in the world today. The Cancer League too had a festival to create awareness among the general public about the various aspects of this illness. There were stalls with information leaflets and people who could give advice and answer questions which the visitors had, there were



lectures and discussions and of course entertainment as well. People came with many doubts and concerns and left feeling better informed.

If you happen to be in the city of Lucerne, do make it a point to visit the IMAX Film Theatre at the "Verkehrshaus". Besides an excellent museum showcasing the different modes of transport past, present and future in Switzerland, there is a huge planetarium with the biggest sky simulator. Another interesting display there is the amazing Swissarena with the biggest aerial photograph of Switzerland, measuring over 200 sq. meters, over which one can walk in felt slippers! In the IMAX cinema itself, with its screen of 475 sq. meters, which happens to be the biggest in Switzerland, one can see the Swiss Alps close and up front in a film which takes us to the north face of the Eiger peak, considered to be Europe's most difficult climb! This particular film may not be playing when you get there, so find out the programme beforehand. But all the films shown at the IMAX are outstanding.

Music lovers will take great delight in knowing that there is an exhibition about the family Silberman, makers of the best musical church organs in the world, first designed in the 17th century. This exhibition is in the village of Arlesheim, about 10 km from Basel. In this village one can also visit the magnificent Baroque cathedral and listen to music played on the Silberman organ from the year 1761, either during a religious service or at a concert.

Just as Gomukh in the Himalayas is the source of the holy mother Ganges river in India, the source of the father Rhine river is in Switzerland. In order to get there, one takes the Matterhorn train to Oberalppass (2,044 m) and then southwards in the direction of Val Maighels (2,310 m). From there onwards to the beautiful, serene lake of Toma (Tomasee) at the place called Piz Baduz. The entire hike takes three hours, but at the junction called Trutg Nurschals the terrain gets steeper. One can also visit Tschamut, the very first town to get the crystal clear waters of the Rhine. Ren in Celtic means the flow and the old Germanic people called it rein which means pure. From its origin in the lake of Toma, which in fact gives rise to two rivers, the Vorderrhein (front Rhine) and the Hinterrhein (rear Rhine), to its destination in the North Sea, the Rhine makes its journey of 1,324 km. It is said that father Rhine is about 12,000 years old!

The newly reopened Loetschberg Tunnel for trains is a blessing for commuters as it will shorten the time of travel even more. It is indeed a wonder of modern technology. The 34.6 km long tunnel connects two cantons, Bern and Valais, the north end opens in Frutigen and the south end opens in Raron. The entire traveling time inside the tunnel is eleven minutes, during which one passes underneath several alpine peaks. The Gotthard tunnel however, which is still under construction, will be 57 km in length when it is ready! Tunnels are a necessity in a mountainous country like Switzerland, but it means missing out on the spectacular view. ■



# *The Castled Mystery of The Glorious Swiss History*

Alpine slopes, lush green meadows, tinkling cowbells and the fresh aroma of chocolates welcome you to the wonderful country of Switzerland. But apart from its scenic beauty, Switzerland also boasts of a rich history that still lives in the majestic castles that adorn its landscape. Standing proudly for centuries, the castles in Switzerland have never failed to amaze with their sheer grandeur and elegance.

As you unravel the hidden delights of the castles in Switzerland you will find the rich history of this fairy country coming alive right in front of your eyes. From the rural countryside

to the bustling cities, the whole of Switzerland is peppered with castles of varied proportions. So no matter where you are in Switzerland there will always be a castle located nearby for you to explore.

Many of the castles in Switzerland house museums that hark back the past in all its glory. Some of the castles in Switzerland can also be leased for a short period of time thus adding up to a memorable experience. Even budget travelers can have their share of memories as they enjoy a stay at youth hostels that are housed in medieval castles.



## New Castellum

New Castellum or the "New Castle" is located in canton Neuchâtel in the western part of Switzerland. This majestic castle was built in the 12th century and proudly towers over the city. The western side elevation of the New Castellum (New Castle) is divided with architectural relief belts with a single window that is adorned with the image of two dogs. However, the upper half of the castle is supposed to have been built in the 15th century.

As you explore the southern part of the New Castellum (New Castle), you will come across well-laid gardens that are a treat to the eyes. Besides, southern part also houses the gallery of Phillipe Hocheberg, the Earl of Neuchâtel, who rebuilt the New Castellum in the 15th century. You can also have a look at the huge main portal with

two side towers and embrasures that reflect the sheer genius of their creator.

The private living apartments at the New Castellum (New Castle) may not elicit great interest but are worth a look. The massive Knight Hall at the New Castellum was earlier used as a gala hall and has had its own share of dazzling events. The small room with archives (grotto) is also an important attraction at the New Castellum.

As you view the New Castellum (New Castle) from the foot of the hill it is located upon, you will notice a high tower with toothed embrasures. This is a prison tower that is also known as the oldest construction of the downtown. The tower also houses two wooden punishment cells that were in use before 1848. Besides, you can also have a look at two 15th and 17th century models of the Neuchâtel town that add up to quite an interesting experience.

## Castle in Eglet

Eglet is a picture perfect town that is situated on the plains of Switzerland. Complete with lively narrow streets and splendid houses, Eglet is truly a treat to the senses. It formerly belonged to the Earls of Burgundy before it came under the Princes of Savoy. Eglet produces some of the best wines you can ever taste. In fact, the famous 'Royal Eagle' brand is produced here along with a variety of semi sweet white wines. As you explore this wonderful town, you will come across a majestic castle with peaked towers that would simply fascinate you. Well, this is the famed Castle in Eglet that was built by the Princes of Savoy in the 13th century.

The Castle in Eglet was burnt down in 1475 but was reconstructed after some time when the town passed on to canton Bern. The circular patrol road that passes along the covered walls of the Castle in Eglet has still managed to retain the traces of old wall paintings that used to adorn them earlier. The main tower at the Eglet Castle houses a wonderful museum that harks back the Eglet's



history and the development of wine making in the region.

The main building of the Castle in Eglet is a fascinating collage of architectural styles that date back to different periods of history. However, the gothic element is the common thread that links all the architectural forms on display. As you tour the Eglet Castle, you will come across a hall that displays antique furniture and archives. Besides, the hall also offers a lot of information about the winemaking industry in the region. You will also be able to visit a historical building located near the Castle in Eglet that a rich musical collection of organs including the real size copy of the first organ that was made in 246 BC.

## Castle in Gruier

Gruier is a medieval village that is located at the foot of the ancient Gruier Castle. Built in the 11th century, the Castle of Gruier derives its name from the crane (this bird was depicted in the Court of arms of Earl Gruyere Rudolf the 3rd, who started the construction of the castle. You are almost transported back in time as you cross the castle's impressive frontiers. The courtyard at the Castle in Gruier is surrounded by buildings and walls that date back to the 12th century.

As you explore the Castle in Gruier, you will note that its interiors are a combination of different styles of architecture. From feudal architectural styles to the luxurious elegance of the 18th century, you can see them all. It was the Bovey artists that designed this elegant castle that simply fascinates the mind. It must also be mentioned that the Castle in Gruier has been a proud host to many aristocratic guests who were simply overwhelmed by their stay.

The first arched hall at the Castle in Gruier houses a great collection of art works. Other elegant and luxurious halls follow that display rich collections of antique furniture. The Earl's hall is a must visit place with its Renaissance style décor, marvelous



goblins and stained-glass windows. You will also come across a beautiful hall dedicated to a peasant girl. The girl in question was greatly admired by one of the Earls who ordered a number of luxurious apartments for her.

The St. John chapel at the Castle in Gruier is a wonderful combination of Roman and Gothic architectural styles of architecture and is a must visit site. The 16th century altar and the stained glasswork that depict the emblems of the Earls of Gruyere are indeed an experience to remember.

## Schloss Habsburg, Aargau Canton

The Schloss Habsburg (Aargau Canton) castle was built somewhere in the 11th century and stands proudly on the summit of the Wulpelsberg peak. The castle was also the former seat of the counts of Habsburg whose ancestors played a major role in



shaping the history of Europe.

Work on the Schloss Habsburg castle started around 1028 AD and it took quite a number of years before the castle finally saw its completion. However, the Schloss Habsburg (Aargau Canton) castle was passed to Bern in the 15th century. It was subsequently used as a farmhouse till it was acquired by the Canton of Aargau in 1804.

With a captivating old worldly charm about it, the Schloss Habsburg is certainly worth a visit. Every inch of this elegant castle speaks of its rich past and glory. In fact, you will simply be left spell bound as the past springs to life right in front of your eyes.

Part of the residential building and the terrace at the Schloss Habsburg are now used as a restaurant. It is indeed a delightful experience to enjoy some mouth-watering dishes as you bask in the ancient glory of the Schloss Habsburg castle.

It must also be mentioned that the Schloss Habsburg is open all throughout the year for you to enjoy its splendor.



## Chillon Castle

The Chillon Castle is considered to be one of the most impressive relics of Switzerland's past. Located between Montreux and Villeneuve, the castle is indeed an interesting sight to behold. If we try to delve into the castle's history, we get to know that it stands in place of small fortress that used to guard an important trade route to Italy through the St Bernard's pass. The fortress originally belonged to Princes - Bishops of the medieval era. Around 1150 AD, the fortress came under the Princes of Savoy who wielded a lot of power during those times.

The Chillon Castle has witnessed a number of intrigues and other political events that shook it from time to time. For instance Bonivard, a strong supporter of Church Reformation was imprisoned at the order of the Duke of Savoy who was a jealous supporter of Catholicism. Bonivard spent the whole four years in the castle chained to a post, until he was released by Bern Protestants in 1536.

The Chillon Castle undergrounds that were cut out inside the rock, served as an arsenal for Bern Canton troops. One of the most important attractions of the castle is the Grand hall that is decorated with the emblems of Dukes of Savoy. The hall has also retained its gorgeous painted ceilings and the massive fireplace. It is really interesting to take note of the columns cut out of oak-trees, the antique furniture and the collection



of tin goods. You can also explore the Knight's hall, Duke's bedroom and the Judgment Hall as you unravel the delights of the Chillon Castle. Besides, the in house chapel showcases some wonderful wall-paintings fragments.

As you explore the Chillon Castle you will come across a remarkable museum located in the ancient square tower. Dedicated to the ancient glories of the castle and the region, it is indeed a place to visit. A number of valuable archeological findings occupy the pride of place at the museum. The she-wolf sculpture, fed Romulus and Remus, wall paintings, copy of Mark Aurelius bust (original version is displayed at the Lausanne museum), bronze statues of Mineura, Juno, Bacchus, coins, stamped in Aventicum.

## Tourbillon Castle

The magnificent Tourbillon Castle is located in Sion that lies in the southwestern part of Switzerland. It was constructed by Bonifatzy Shallen in the 13th century and has been a witness to many events and intrigues of the past. The Tourbillon Castle had its own share of troubles when it was destroyed in the 15th century. However, Bishop Giyom VI restored the castle to its earlier glory besides adding a chapel to it. But the Tourbillon Castle was destroyed again in 1788 by a raging fire that damaged it beyond repair.

The Tourbillon Castle is in ruins now though it still continues to reverberate with untold tales of its past. The castle has served as a residence to a number of princes - bishops of Sion. As you cross the wall gates of the majestic Tourbillon Castle, you reach the territory of ensemble with eminent Donjon above the ruins. The chapel has a conical dome that is supported by columns with carved capitals. A few wall-paintings fragments still remain as proofs of the Tourbillon Castle's past glory.

## Stockalper's Castle

The Stockalper's Castle in Brig is one of the finest castles you can come across during your Switzerland tour. Also known as the Stockalper Schloss, it was built between 1658 and 1678 by Kaspar Jodok von Stockalper. As one of the most important descendants of an old family, he was a man of great talents. After he built the castle, Kaspar Jodok put it under the protection of the Three Wise Men and called the towers Caspar, Melchior and Balthazar. Complete with an outstanding baroque garden with rosaries, vineyards and dancing fountains, the Stockalper's Castle of today is indeed a sight to behold.

## Vaduz, Liechtenstein



The Vaduz Castle is one of the most impressive castles you can ever come across during your Switzerland tour. It is situated in Liechtenstein that lies to the east of

the Rhine, in the mountains between Switzerland and Austria. It is one of the smaller states of Europe and derives its name from Hugo of Liechtenstein who is the first known ancestor of Prince Hans. He was first mentioned in 1133 in connection with Liechtenstein Castle situated about 30 km south of Vienna.

Its construction began somewhere in the 12th century and was one of the grandest palaces ever beheld. However, the Vaduz residence in Liechtenstein was badly damaged by the Confederate in 1499 AD.

In the years to follow, a number of modifications were made to the structure to bring back its old glory. For instance, the massive round bastions that decorate the Vaduz Castle in Liechtenstein were added in the 16th century. However, the period from 1901 - 1910 saw some elaborate modifications being made to the place. The Vaduz Castle in Liechtenstein is indeed a marvel in itself. Unfortunately, it is not open for public viewing.

## Lenzburg Castle



The castle of Lenzburg is situated on top of a hill between Aarau and Baden. The oldest part of the Lenzburg Castle consists of a spacious High Medieval complex, which was the seat of the ruling Counts of Lenzburg. The castle later passed on to the Kyburg dynasty and subsequently of the Counts of Habsburg. Around 1415, the Lenzburg Castle became a Bernese bailiff's residence as Lenzburg fell to a Bernese seize.

Today, the castle houses the famed museum Canton Aargau besides a cultural and conference center.

## Castelgrande Bellinzona

Bellinzona was once the gateway to the Alps from the south and Italy from the north. As the present capital of Canton Ticino, Bellinzona is a bustling city that prides itself in its rich heritage. An important cultural crossroad between the Latin and Teutonic world, Bellinzona is indeed a charming place to visit. Everything about the place reflects an old worldly charm that is hard to ignore. Three majestic castles dating back to the Middle Ages depict Bellinzona's rich history at its best. They are the Castelgrande, Castello di Montebello and the Castello di Sasso Corbaro.

## Château de Grandson

This medieval fortress was built somewhere during the 11th and 14th century. One of the most well maintained relics of Switzerland's glorious past, the Château de Grandson is a must visit site. Besides, the castle also boasts of a permanent exhibition that displays old weapons and details of the famous battle of Grandson in 1476. A popular automobile museum is another attraction that draws many. Greta Garbo's Rolls Royce is one of the most prized possessions displayed by the museum.