

**Zeitschrift:** The Swiss observer : the journal of the Federation of Swiss Societies in the UK  
**Herausgeber:** Federation of Swiss Societies in the United Kingdom  
**Band:** - (1932)  
**Heft:** 577  
  
**Artikel:** The romance of glaciers  
**Autor:** Frith, Ernest  
**DOI:** <https://doi.org/10.5169/seals-696066>

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commercial and industrial enterprises, and even to private individuals domiciled in Switzerland, guaranteed by collateral which the Swiss National Bank is not obliged to accept as security. The Caisse des Prêts possesses a guarantee fund of 100 million francs, of which 75 millions were subscribed by the Government and 25 millions by the banks and other private enterprises. Any commitment beyond that figure will be guaranteed by the Government. The first monthly report, dated August 31st, shows, in addition to the guarantee fund, an amount of 9.4 millions for advances secured by bills, the counterpart of which is represented by the same amount in liabilities under the head of rediscounts. These bills have been absorbed by the market. Although the extent to which the Caisse is drawn upon is likely to increase during the coming months, its modest figure shows that the situation of certain debtors is regarded without undue uneasiness. The possibility of mobilizing their foreign credits has restored the confidence of their creditors.

The situation of the eight leading commercial banks continues to be characterized by a strong liquidity. Against short-term liabilities of 1½ milliards, the liquid assets in cash and with the National Bank amount to 1,077 millions. At the same time, the aggregate figure of the balance sheets, which showed a steady increase between 1926 and 1930, has been declining ever since, especially during the second half of 1931. The decline since 1930 was 1.9 milliards, or about 22 per cent., of which 1½ milliards took place in 1931. On June 30th, 1932, the total of the combined balance sheets of the banks was 6.7 milliards. This marked reduction, which was in part deliberate, is one of the most characteristic signs of the effect of the crisis upon the banks. On the liabilities side, it is due to the decline of deposits and acceptance credits. While in 1930 and until the middle of 1931 there was a strong influx of foreign capital, since then until the end of 1932 the eight leading Swiss banks were called upon to reimburse deposits amounting to 1,374 million francs. It is necessary to point out that until the middle of 1931, the gold reserve and the balances of the banks on clearing account were declining steadily. It is thus not correct to state, as has been stated abroad, that the big increase in these two items in the balance sheet of the central bank was due essentially to the influx of foreign capital that has taken refuge in Switzerland, and that the major part of the gold reserve, as well as the Swiss franc itself, is at the mercy of foreign funds. In reality, far from there having been an inflow of foreign funds since the middle of 1931, the greater part of the foreign funds has been repatriated or invested elsewhere. The increase of the gold reserve is due in part to the withdrawal of foreign balances of Swiss banks to increase their liquidity, and to the realization of the foreign exchange holding of the Swiss National Bank, amounting to some half milliard francs.

The recent return of the Swiss franc to parity, after having been for a long time at a premium in relation to all gold exchanges, was due to a recovery in foreign stock exchanges, which created a strong demand for foreign currencies for the purpose of buying securities of the Swiss National Bank remain covered to the extent of nearly 100 per cent. by gold.

Banker.

## A RECOMMENDABLE XMAS PRESENT.

We propose recommending to our readers the purchase and study of a book which has been issued last year by the New Helvetic Society and the Commission of the Swiss abroad, in French and German, entitled: *Les Suisses dans le vaste monde... Schweizer im Auslande...* (The Swiss abroad). This book had been preceded by another similar work, a few years previously, which was called "Ta Patrie," and was dedicated to the Swiss abroad. Many thousands of copies were sold all over the world wherever Swiss congregated and this extraordinary success was another proof that we cannot forget our homeland.

The second book "The Swiss abroad" now serves a double purpose; it intends to inform the Swiss at home of the activities and achievements of the Swiss abroad, whilst it has forged a new and powerful link between the various colonies and settlements of our compatriots all over the world by instructing the one of the doings of the other. We can do no better than to translate a portion of the foreword to this book, written by no less a person than, M. Giuseppe Motta, President of the Swiss Confederation, he says:—

"The statement that the activities of the Swiss abroad be an integral part of the pride and glory of Switzerland is perfectly true. Our emigration has never been a mass — emigration, it has always remained an emigration of quality. At every point of its settlement, all over the world, this emigration has left a deep and lasting impression. There you will find schools, charitable societies, towns with homely Swiss names, vast engineering works, great industrial and commercial undertakings, there you will find men and women who have reached high positions in business, in the professions, in the practice and

teaching of charity and humanity; deeds which are infinitely more eloquent than words."

"Of late years, the position of the Swiss abroad has become more difficult. The various states have put up barriers not only against the import of merchandise and manufactures, but also against the immigration of humanity. It is a disaster that, at the moment when the idea of national independence and international unity appeared to be ripe to take practical shape, narrow and selfish nationalism should break out afresh in every part of the world, in this circumstances, it is difficult not to feel discouraged. Yet it is unthinkable that the nations should not again arrive at a freer, a more generous, conception of nationalism. How incompatible, how tragic, this aloofness and withdrawal into themselves of individual nations at an epoch when ease and rapidity of transport has made the world so small!"

"May this book, a recital of the achievements, always honourable and often glorious, of our compatriots abroad, awaken in us warm sympathy and interest for our brothers. To all readers, I feel sure, it will be an incentive to the exercise of courage, tenacity and the true love of home."

The contents of this book are no less admirable than its construction. It is divided into three main divisions:

1. The interrelation of Switzerland to the Swiss abroad;
2. Descriptions and pictures of the Swiss colonies abroad;
3. Biographical notes on notable Swiss abroad of our own time, such as Anton Cadonau of Singapore; Ulrico Hoepli of Milano; Sir Arnold Theiler of South Africa; Dr. Charles Bernard of the Dutch East Indies; and Dr. O. H. Ammann of New York.

Each chapter of the three divisions has been written by an absolute expert and authority, f.i. that of the Foreign Office in Berne and the one on Swiss Diplomats in foreign services by Dr. Benziger. Among the other contributors, we meet many names well-known to us in London: Dr. H. Lätt, Dr. Paul Lang and Dr. Jacob Job, all of whom have at one time or another filled the post of secretary of the London Group of the New Helvetic Society.

Here then is a book which ought to be read by every Swiss in the United Kingdom! If you want fiction... in this book there will be found truth more exciting and romantic than any fiction; if you love biography, the most profitable branch of literature... here it is in its exquisite form; if you search for historical information, the possession of this book will leave you a very much better student of Swiss and World history than you were before. Let us give you one or two examples, taken at random from the section "Swiss in England" by Dr. A. Lätt:

How many of our readers know that William the Conqueror was crowned the first King of England by a Swiss Bishop. It was Bishop Ermenfroy of Sion in the Valais, already here under Edward the Confessor and the Coronation took place at Windsor on April the 4th 1070. Again, do you know that Queen Elizabeth had as Swiss doctor? Do you know that the greatest friend and collaborator of John Wesley was a Swiss Pastor from Nyon who was called "The Apostle of Methodism"? Do you know that it was a painter from Schaffhausen who founded the Royal Academy and was its first President? Do you know that two other Swiss painters also became Presidents of the Royal Academy?

We could go on asking you "Do you know" for a long time, but we must also be fair and confess that we did not know before we read this book. Therefore, our advice to our readers and their friends is:

Buy this book and you will know and be proud of your knowledge.

"Schweizer im Auslande" can be obtained at our offices, 23, Leonard Street, E.C.2., or from the London Group of the New Helvetic Society, at the price of 7/6 post paid.

## THE ROMANCE OF GLACIERS

By ERNEST FRITH, F.R.Met.Soc.

Nature does not need our applause or court our admiration. We stand in awe and wonder at Nature's majesty and mystery. So many things appeal to our sense of wonder that perhaps there is a danger of our losing not only the habit of wondering at them, but the very power of wonder.

Among the glorious things of Nature are the glaciers. These rivers of ice are a system of drainage by which the snowfall above the snow-line is removed. Above a certain height the snow never melts and its enormous pressure upon the snowfields compresses the lower layers and converts them more or less completely into ice. This imperfectly consolidated substance, partly snow and partly ice, is called by the French 'névé,' and by the Germans, 'firn.' Finally, the increased pressure of the accumulated snow brings about the formation of a compact blue ice which slowly creeps down the mountain's slopes and valleys.

These ice rivers behave much the same as rivers of waters, eroding their beds and transporting their load of waste. The fractures of the moving ice (crevasses) are curved and the curve is usually convex towards the valley. A row of stakes may be driven into a glacier in a straight line. After a time the middle stakes are observed to have travelled further down the valley than those at the sides. In summer the movement is greater and quicker than in winter. The Mer de Glace moves twenty-seven inches per day in summer and fifteen inches in winter. The average daily rate of an Alpine glacier may be taken as two feet. The Greenland glaciers move much faster. The Jacobshaven glacier, on the west coast of Greenland, varies from sixty-five feet per day in summer to forty-eight feet in winter.

Hartwig tells us, 'It might be supposed that the waters which congeal on the sides of the mountains covered with perennial snow, or fill Alpine valleys in the form of glaciers, were eternally fixed on earth — but we are deceived by the delusive appearances of immobility. Every year the glacier slowly but relentlessly makes a step forward into the valley, and while its lower end dissolves new supplies of snow constantly feed it from above.' Some of the Swiss glaciers are dwindling and retreating but recent investigations show that the glaciers of Savoy are advancing and growing in volume. In the Alps there are over a thousand glaciers having an average length of five miles and varying from a quarter of a mile to three miles in breadth. The longest is the Aletsch Glacier from Finsteraarhorn. It is fifteen miles long and one thousand five hundred feet deep. All these, however, are dwarfed by those of the polar regions. The Beardmore Glacier was found by the Shackleton Expedition to have a length of no less than one hundred and thirty miles.

A line of debris fringes each side of a glacier, some of the stones being perhaps several tons in weight. Such accumulations of rock are termed 'moraines,' and this moraine rubbish often falls down the crevasses and gets wedged in the ice. As the ice-river slowly moves on, the angular stones press firmly against the bed-rock leaving on the surface scratches, flutings, and striations, which reveal to future generations the presence of glacial action. It is astonishing the quantity of sand and clay that result from the eroding of the rocks in the bed and on the sides of an ice-river. Glaciers are most efficient agents of erosion and of transportation. Rock debris is carried for miles and piled up in a heterogeneous mass at the lower end of a glacier.

The ice at the glacier's snout generally forms a rough archway, from which issues a stream of ice-cold water, milky with mud. This milky appearance is due to the fine, almost impalpable powder of rock carried along in suspension. We are informed that the river issuing from the Aar glacier, in Switzerland, carries in suspension two hundred and eighty tons of fine particles per day in summer, in addition to the coarser material pushed along the river bed.

In earlier geological times glaciers were much more widespread throughout the world than they now are. There is abundant evidence of glacial action in Scotland, Ireland and in North Wales. It is a common thing in these parts to meet with perched blocks, erratic blocks, and occasionally with the remain of old moraines. Even in the neighbourhood of London, as at Finchley, deposits of gravel and clay with ice-borne boulders fluted and scratched by glacial action have been discovered. The character of this rock with its glacial polish and striations gives conclusive evidence that ice flowed over the surface of that part of the country.

In very remote times, when the coal measures of the northern hemisphere were being formed, glacial conditions prevailed over South Africa. There is abundant proof that at one time the climate of this country was like Greenland is at the present day. A vast ice sheet extended over the Transvaal, Natal and the Cape Province. A rock called 'Dwyka Conglomerate' was identified by the late Doctor P. C. Sutherland as a boulder clay of glacial origin. It is called Dwyka from the Dwyka river in the Cape Province, where there is a typical exposure of the rock. Dwyka is widely distributed in the eastern Transvaal and around Kimberly. The rock is also represented in Zululand where it rests unconformably on the Table Mountain sandstone and granite. This boulder clay consists mainly of a dark, compact matrix in which are embedded boulders, pebbles and angular fragments of all the older series of rocks. The inclusions are of all sizes and shapes, some of them weighing many tons.

There can be no doubt that this Dwyka is morainic in a very indurated condition and found in the form of a bed lying at the base of the Karroo formation. The writer has observed its outcrop in the Karroo frequently to present a tombstone appearance. The character of the rock and its groovings are conclusive evidence of its glacial origin and that South Africa which now enjoys a sub-tropical climate, was many ages ago as cold as the Polar regions.