

# The survey of glaciers [to be continued]

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## ANNUAL GYMNASTIC DISPLAY.

## Swiss Gymnastic Society.

The Annual Gymnastic Display of the above Society took place on Sunday, November 26th, at the Swiss Club (Schweizerbund), and proved to be a huge success. An audience of about 250 assembled in the homely Hall of the Club to watch the clever display. The Swiss Minister was represented by M. W. A. de Bourg, 1st Secretary of Legation.

The first item on the programme was team work at the parallel bars, which was well done, although the various movements might have been a little more synchronised. The individual work at the parallel bars, was a very fine item indeed, and proved that the team has some excellent material at their disposal. The exercises were both difficult and well combined, and execution on the whole was on a high standard.

The free exercises as a team item went very well indeed, the working together of the nine men was as good as could be expected, and the contrast between relaxation and contraction was clearly shown, in brief a very good item. It was followed by vaults on the vaulting horse; considering that the spectators encroached on both sides, and the gymnasts could only take two steps run (Anlauf), the palm of the evening must be given to this number, which showed the performers in very fine fettle. Squat, straddle, rear and flank vaults coupled with neck rolls, somersaults, somersaults from handstand, straddles and squats from handstand, scissors backwards, etc., proved not only the pluck but also the very fine training of the team and the generous applause was well deserved.

The pyramids which were of a very difficult nature, were a complete success without any untoward incident. They showed the team as a very fine set of handstand specialists on the floor, table, parallel bars as well as on their colleagues' bodies.

The leader, Mr. H. Knoll, is to be congratulated on his first display, and the untiring worker for this enterprising Society, Mr. Block also comes in for a fair share of compliments.

## THE SURVEY OF GLACIERS.

By A. E. H. Tutton, D.Sc., F.R.S.

*Although the movements of glaciers have been studied for more than a hundred years, it is only recently that observations have been adequately organized on an international scale. Dr. Tutton describes the methods employed by surveyors, and shows how much their work has done to prevent the disasters which formerly involved great loss of life.*

The slow but sure changes which occur in the dimensions and volumes of glaciers have for more than a century formed the subject of close study. Research has been specially directed towards the termination of glaciers in their valleys of descent — the signs of their "advance" or "retreat" — and the relative movements of their parts. At first the work was carried out by men of science, often in their private capacity at their own charges, with the primitive means of observation then alone available, but of later years the study has been systematized by the combined efforts of official government departments and of the organized scientific forces of Glacier Commissions, both national and international. This mass attack has been highly effective in revealing much more of the wonderful nature of these grand and immense natural rivers of ice, some even in Europe extending to nearly a score of miles in length. Moreover, these regular surveys have been the means of reducing to very small dimensions, and even of absolutely preventing, the disasters which formerly brought to ruin so many lovely Alpine valleys and destroyed so many lives.

## New Principles.

The character of any particular glacier is largely determined by its bed, the slope of the mountain on the side of which it is formed by the ever downward pressure of the upper snow-fields and *névé*, and by the nature of the valley down which it eventually finds its way. That is, it must be observed whether it is more or less crevassed or even torn into séracs, and in extreme cases precipitated as an icefall like that of the Rhone glacier. But there are many other factors contributing to its general appearance at any given moment. Such are, pre-eminently, the amount of snowfall which it receives, its *enneigement*, and its net loss in melting caused by solar heat, after accounting for the amount of refreezing during the night, and on cold wintry or stormy days. Hence, data as to the amount of snow accumulated and dissipated, and the net residue remaining as snow, *névé*, or solid ice — the *niometry* of the glacier — are all of essential value and necessarily included in a complete survey. Further, not only are obvious surface conditions,

The display was a great success, and the splendid and well merited support, given to the Gymnastic Society, must have been a source of satisfaction to them, it also proved that this institution is in a very flourishing condition.

We are informed that only two old faces remained from last year, but the youngsters and the team was probably the youngest that ever did duty, they showed great promise and there is every reason to believe that they will develop into a magnificent team. Deprived as they were of the services of their best man, they worked splendidly and those who did not attend the show, did miss a real treat, it was a most enjoyable evening.

To all former Members and Friends of the late Gymnastic Society "Schweizerbund" and the former Athletic and Gymnastic Society "Helvetia." May it be known that:

An Old Friends Evening and Reunion will take place on Saturday, December 16th, at 8.30 p.m., at 74, Charlotte Street, W.1, with Wurstesen and Metzgete, followed by Social and Dance. Kindly send early notice of intention to attend to the organising Secretary, Mr. H. Humbel, 74, Charlotte Street, W.1. All old Friends welcome.

**Veterans Section.** A commencement will be made on the first Friday in January, — 5th of January, 1934 — at 8.30 p.m., at 74, Charlotte Street, W.1. All Gentlemen who have already enrolled, will receive special invitation in due course. Any readers of the S.O. desirous of joining, kindly note the date or send P.C. to the Hon. Secretary.

**Juniors Section.** A fresh start will be made on the first Wednesday in January — 3rd January, 1934 — at 7 p.m., at 74, Charlotte Street, W.1. Ages 11 to 16 years; Swiss Parentage (either father or mother or both) essential, so as not to clash with our English sister societies, who have a hard struggle themselves.

XYZ.

size and volume, amount and velocity of movement of the glacier, invariable items of observation, but serious and occasionally successful attempts to determine the depth (thickness) of the glacier at a given point have in these later days been made on certain of the more important glaciers, by the more refined instrumental methods now available, involving in some cases only recently discovered principles.

## Many Observations.

The ordinary theodolitic, geodesic, and triangulatory methods of survey have, of course, been used, as well as the measuring of the positions of fixed marks, deeply driven-in stakes and other erections on the glacier relatively to fixed points on the rocks at the sides. These methods have been brought up to date with the more perfect surveying instruments of today. In addition the work has consisted in the following observations: Recording regular readings of immense nivometers, scales in metres and half-metres engraved on suitable rocks standing vertically up from the glacier; recording the "state of the snow" of the *névé* from density determinations; estimating the total and residual *enneigement* of the net bulk of the ice; taking soundings of the depth of the ice, between the surface of the glacier and its bed, by various methods adapted from those invented during the war (hydrophones) for depth-sounding at sea (and best of all by the method of the earthquake seismometer — determining the length to path of a seismic wave between the surface and bed); and finally, perhaps most interesting of all, determining the minute daily movements of the extremity ("snout") of the glacier by means of an ingenious little instrument, the cryocinometer, invented by Professor Paul Louis Mercanton, the Chairman of the Commission Suisse des Glaciers and Professor of Geophysics at Lausanne University. The writer spent a most interesting day last summer with Professor Mercanton, who has been for many years collecting the information for and compiling the reports of the Commission. Besides these essential observations, many others of a particular nature, on specific glaciers chosen for more detailed study, have been carried out, throwing an infinitely clearer light on the very remarkable phenomena of glaciology.

During the twenty years preceding the war, 1894-1914, the Commission Internationale des Glaciers supervised the work of glacier survey in Europe, and also published an annual report, the last, for 1913, appearing in 1914. After thirteen years of inactivity, the old lines of work being impossible, this Commission in 1927 dissolved itself, and became replaced by a new Commission des Glaciers, under the auspices of the Section d'Hydrologie of the Union Géophysique et Géodésique. Its first report was published in

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1930, and summarized the variations in the lengths of the Alpine (Swiss, French and Italian) and Scandinavian glaciers, as far as the data accumulated in those years (1913-1928) was available. The Swiss observations have been made by the Cantonal Forestry officials, the French (Savoie and Dauphiny) observations by the officers of the Département des Eaux et Forêts of the Ministère de l'Agriculture and the Italian observations by departmental officers of the various districts. In the comprehensive report (1914-1928) data are given for each year for 26 Savoie and Dauphiny glaciers, 101 Swiss glaciers, and 77 Italian ones, besides a considerable number of Austrian, Norwegian, and Swedish glaciers. The change of length is given to a half-metre, a positive value indicating advance and a negative sign indicating retreat.

It need scarcely be pointed out that the terms "advance" and "retreat" refer to the increase or decrease in total length, as afforded by the position to the "snout" termination. For, of course, the ice is always bearing downwards, the position of the snout-end being determined by the net balance of fresh precipitation and loss, dissipation, by melting. When the former is the greater the glacier is advancing, encroaching on the terrain in front of its snout; when the latter is in excess, the glacier is in retreat.

It will be of interest to be reminded that on August 11th, 1840, Professor Louis Agassiz and some companions from Neuchâtel initiated the first really scientific attempt at the measurement of glacier movement. They constructed a durable bivouac-shelter out of a large clock of micaceous schist, which arose on the ridge of the great medial moraine of the Unteraar glacier, and arranged for its regular revisitation and determination of its position. In 1842, however, they quitted this precarious refuge, facetiously called the Hotel des Neuchâtelois, for a hut on the left bank, the well-known Pavillon Dollfus. In 1844 the block had already split in two, in consequence of violent storms and continual changes of level of the glacier in its slow but sure movement downwards. Long lost to view, it was re-found in at least three pieces by a tourist, and its position measured in 1884 by Professor F. A. Forel. In 1899 it was reviewed by him, and again by Messrs. Bonard and Riklin in 1904.

Lastly, it was discovered in eight pieces in 1922 by Professor Mercanton and a party of his students from Lausanne, and a life-history of its movements was constructed by them, the travel since 1842 being well established with the aid of the most recent form of theodolite. For, happily, in 1842 Wild had determined the position of the original block with great care; the number two was still clearly visible on it when Professor Mercanton found it, and on other of the eight

## BALLET IN SWITZERLAND.

By L. Franc Scheuer.

The great vogue that Switzerland had enjoyed abroad since as early as Rousseau's "Back to Nature" doctrine and Marie-Antoinette's dairy practises had reached its zenith, when Marie Taglioni danced *La Laitière Suisse* and the Paris Opera mounted idyl after idyl in the pastoral vein of Salomon Gessner. Shortly afterwards a general reaction to this sentimental attitude set in and condemned not only alp-horn and yodel, Allemand and Laendler, but Swiss art as a whole, about which it knew little at all.

From this moment date most of the difficulties the Swiss artist, whatever his mode of expression, experienced in familiarizing his work; difficulties that were greatly augmented by the linguistic differences of the land and by the peculiar situation of Switzerland as bridge between Germanic, Slavic and Latin cultures. On every side the artistic integrity of the Swiss met with ridicule, professional distrust or preconceived associations. His efforts were crowned with success only when he stooped to assume a foreign nationality, and in this case Switzerland gained no recognition.

A striking parallel might be drawn between this latter state and that of the Dance in England until a few years ago, but since it is with Swiss dancing that we intend to deal, having recently spent several months on Swiss soil, we will hasten on to it.

There is, first of all, no contemporary form of dancing that might be labelled "Swiss," despite the fact that both Daleroze, who is Swiss, and von Laban, whom rumour describes as Czecho-Slovakian with meridional antecedents, sowed the first seeds of their respective methods in Switzerland.

One of the most plausible reasons for this, according to Mme. Suzanne Perrotet, an authoritative teacher of dancing and gymnastics in Zürich and one of von Laban's early associates in the days when the present ballet master of the Berlin Staatsoper was living in Ascona, is that

pieces found were still legible the carved names of Agassiz, Nicolet, and Stengel, ensuring their trustworthy identification. The block had early quitted the crest of the moraine, and glided along its left flank down to the bordering ravine. Starting from a fixed point on the Abschwing, where the two great affluents, the Finsteraar and Lauteraar glaciers join to produce the Unteraar glacier, the positions at each of the epochs, 1842, 1884, 1899 and 1922 were found to be respectively 0.9, 3.2, 3.8, and 4.6 kilometres. These correspond to the following velocities: 1842-1846, 74.0 metres per annum; 1846-1884, 51.5; 1884-1899, 40.0; and 1899-1922, 32.2.

The diminution in velocity is partly due to the drive to the left from the middle of the glacier, and partly to the diminution of the glacier, the end of which was continually in retreat from 1872 to 1922. We have thus a continuous record for eighty years of the movement of this very interesting glacier. And the work of Professor Mercanton is only just in time. For owing to the completion in 1931 of the barrage work at the Grimsel (for the provision of immense electric power stations at Handret, Boden and Innerkirchen), and the consequent very large increase in the size of the lake now three and a half miles long, the end of the Unteraar glacier has actually been reached by the waters. Cliffs of ice twenty or more metres high were standing up directly out of the lake the whole time from August 19th to mid-October, 1932, the appearance being exactly like that of a Norwegian fjord. This attack by water has naturally acted fusion and undermining of the ice, no less than fifty metres of retreat of the glacier being the direct result. The ice cliffs were of a wonderfully clear azure-blue colour, and formed a very beautiful spectacle during the summer months. The old Grimsel hospice, so well remembered for its resonant sleep-preventing wooden cubel-rooms, has disappeared for ever, the lake covering its site, and a new hospice has been built on the rocks well above the new lake level. Besides the loss of 206,500 cubic metres of its snout due to the lake, the Unteraar glacier has lost in the last two years another 2,375,000 cubic metres of its volume. All this renders it the more fortunate that Professor Mercanton's completion of the work of Agassiz should have occurred before this large disturbance of the conditions.

Before proceedings to give the latest results of the official measurements, a few words about the new refined methods are due. And first as to *enneigement* and its determination by nivometry. On a lovely autumn day, September 22nd, 1902, three members of the Diablerets section of the Swiss Alpine Club, Messrs. Mercanton, Lacombe and Ramelet, painted the first nivometric scale in the Alps on the Glacier d'Orny, the realization of a suggestion of Forel in 1890. (To be continued).

the Swiss has greater proclivity for sports than for aesthetics, for the "Hosenlupf," let us say, which is a form of wrestling that consists of "swinging" one's opponent by the trouser leg, than for elementary exercises at the *barre*.

In his turn, the Swiss dance critic, M. Edouard Szamba, suggests that the political history of Switzerland with its democratic trend may have had a great deal to do in preventing ballet traditions from taking root in Helvetia as they did in Italy and France. Not only was court life, so salutary to the Ballet in these two countries, lacking, M. Szamba explains, but likewise regular theatrical troupes, so that until a century ago even the largest Swiss cities were dependent upon ambulating companies of comedy or ballet.

Nevertheless, a varied and ardent choreographical activity is pursued in these same cities to-day, stimulated in certain cases by the experimental, even sectarian, tendencies of Central Europe, but modulated often by the tact and measure for which the Swiss are known.

Centre of gravity of the Dance in Switzerland, Zürich, for instance, has frequently furnished Berlin with representative exponents of modern dancing, or in times of social upheaval, such as Germany is now experiencing, has harboured those in search of refuge or artistic independence. In the first group we discover the names of Max Terpis, former ballet-master Unter den Linden; Berthe Trümpy, prominent Berlin demagog; and the late Vera Skoronel; in the second those of Mary Wigman and the Sacharoffs, who made Zürich their headquarters during the war.

The actual head of the municipal ballet of Zürich is Hellmuth Zehnpenning, who evolved a great deal of theatrical routine, if not creative energy, as leading solo dancer of the Städtische Oper of Berlin. He disposes of a comparatively limited troupe, indifferently formed, insufficiently remunerated (where is this not the case?), obliged, as in all municipal theatres of Switzerland to participate in operetta performances as well as in operatic and ballet. These difficulties made themselves felt during a production of Stravinsky's *L'Oiseau de Feu* we had the opportunity of witnessing in Zürich.

A second troupe to present occasional ballet and to tour Switzerland under the banner of the Zürich Stadttheater is now being composed, partially of German dancers, by Zürich's well-known humoriste, Mme. Trudi Schoop. An interesting experiment that will show us whether the ballet-mistress of *Fridolin en route* — the work that gained Mme. Schoop recognition at the competition of the International Archives of the Dance — is capable of converting her talent for comedy portraiture into more serious channels.

The Mohr-Macciachini School, with a decided trend towards expressionism, is also settled in Zürich, while further we find Thunselda Walter, whose original compositions won honourable mention in the recent competition at Warsaw.

Basel presents a double and unexpected aspect with the ballet of the Stadttheater on one side and the *avant-garde* group of the Tanzstudio Wulff on the other. The former is directed by a new ballet-mistress from Mme. Edwardowa's Berlin school, Frä. Ruth Sendler, whose repertoire for the coming year includes such widely diversified works as *Coppelia*, *Gartenfest in Schönbrunn* (Haydn) and a new ballet by the Swiss composer, Pierre Maurice, *Tanzlegendchen*, after Gottfried Keller. The latter with Käthe Wulff as directress and Marietta von Meyenburg as choreographer specialises in fresh presentations of ballets of confirmed merit, such as *Mercur* (Satie) and *Le Bal* (Riet), in which Laban technique is reinforced by selected elements from the Classical School. Marie-Eve Kreis, whom Paris saw for the first time last year, hails from this school.

To this by no means complete list it is fitting to add the names of several movements whose endeavours have recruited sympathy in Switzerland. In Dornach we find the late Rudolph Steiner's Academy of Eurythmics. Emmi Sauerbeck, long associated with the Swiss theorician of dancing, Gustave Fueter, has her studio in Bern. At the other end of Switzerland, in Geneva, which likewise boasts the Ballet School of Mme. Missol-Rivaux, Jacques Daleroze has centred his activity, while in Ascona may be found Charlotta Bara's Teatro San Materno, a regular laboratory for young dancers.

Dancing Times.

## H. JENNE †.

The interment of the late Henri Jenne took place last Tuesday at the Hörnli cemetery at Basle.

A great number of his former friends and colleagues assembled to pay their last tribute to the departed. Pastor Buxtorf, in moving words, described the life of Henri Jenne, General Manager Schumacher, of the Swiss Bank Corporation spoke of the great services which he had rendered to the Bank, and General Manager Hatt took a touching farewell from his late friend.

## CITY SWISS CLUB.

Over forty members and friends assembled at Pagani's for the usual monthly meeting, which was preceded by a dinner.

Amongst the visitors were Dr. Rüfenacht, 1st Secretary of Legation, M. Lardy, M. Desponds from Roubaix and M. Boehringer, jun.

The President, M. H. Senn informed the meeting of the passing away of a member, M. H. Jenne, the members stood in silence to honour the memory of their former colleague. The Assistant Secretary read out a report concerning the Annual Banquet, which took place at the Grosvenor House, on the 24th of last month. The committee was heartily congratulated on the success of this function, which was attended by about 300 members and friends.

It was decided to hold, during the months of January, February and March, three Cinderella Dances at the Mayfair Hotel, for which the necessary funds were voted. A sum of £5. 5. 0. was allotted to the Xmas tree celebration of the Swiss children.

## AN EXCELLENT XMAS PRESENT.

We have had the privilege of seeing the advance copy of a small book edited by M. R. Hoffmann-de Visme, entitled "Dieu Sait Pourquoi," which contains a collection of letters of great spiritual value, written by the late Mme. Hoffmann-de Visme.

In publishing this book, M. R. Hoffmann-de Visme has been guided by the advice of several friends, who felt that all who had come into contact with Mme. Hoffmann-de Visme, or known of her work in our Colony, would welcome an opportunity of possessing this work in remembrance of her.

We are very glad to be the medium of making this book known, especially since the proceeds will be devoted to the Sunday School of the "Eglise Suisse," founded by the late Mme. Hoffmann-de Visme.

The price per copy will be 3/- including postage, and can be obtained at the offices of the Swiss Observer, 23, Leonard Street, E.C.2. A few personal friends have already asked if this work could be obtained in a more lasting binding, and we shall publish in our next issue the price at which such a copy can be obtained. The book will be reviewed in our next number.

## AN APPEAL.

The Swiss Benevolent Society, l'Eglise Suisse and the Schweizerkirche in London appeal to their countrymen for their kind contribution in cash or kind to provide some extra cheer for Christmas for our poor. Clothing, and particularly warm underclothing, footwear and children's clothing are most welcome and should be addressed to:—

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