



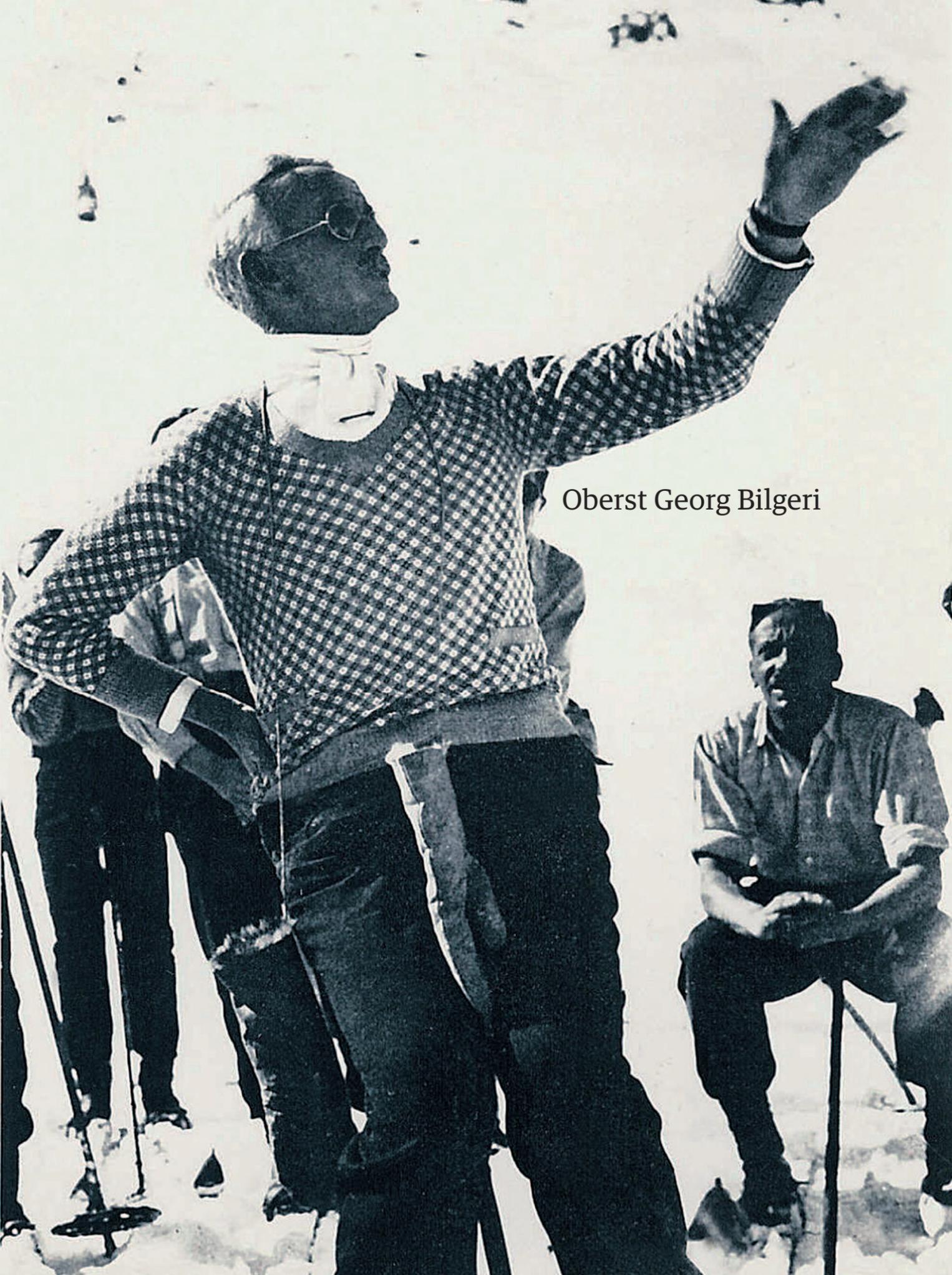


1900-1913

## SNOW KNOWLEDGE AND SKIING TECHNIQUES

---

CHANGING SNOW  
"MODES OF SKIING," SKI COURSES,  
THE SKI, AND BINDING  
SMOOTH, WOOD PLANKS, SKI SKINS,  
STEEL EDGES



Oberst Georg Bilgeri

The best snow and the most beautiful runs are, in my experience, mostly found in the forested areas, in the krumholz zones, and a bit further on. Windprotected alpine pastures, cirques, and basins also offer varying and often glorious snow conditions. Mountain knolls, high plateaus, and ridges are only suitable for skiing directly after fresh snowfall, as the high, unrelenting winds often quickly blow away the entire snow layer.<sup>2</sup> Hans Biendl und Alfred von Radio-Radiis, 1906

CHANGING SNOW



“Snow Consistency”<sup>1</sup>

Snow is not simply snow, and not every form of snow is appropriate for every skier. Indeed, early on, it was understood that snow quality is of foundational significance and a deciding factor in the success or failure of a ski tour: [...] Snow is at its best when it is in “powder and crystal snow” form, which is normally found in “the months of December to the end of February, and often in the beginning of March.” Any later and the “snow is regularly exposed to the effects of higher temperatures making a qualitative decline unavoidable.” In turn, fresh snow “is rarely good for skiing as it is usually too loose and the skis sink too deeply. Climbing a mountain is thus quite exhausting and the downhill ride is not particularly speedy.” Old snow, which develops “when the snow has settled” makes the “slope much more favorable,” while wet snow resulting from an influx of warmer temperatures makes the slope “sticky and nearly impossible to ride.” Should the wet snow freeze overnight only “to be thawed again during the day, a wet-grainy snow develops, which lends itself well to skiing. The run is, though also nice, a very different one from that in powder snow, through which one may glide silently downhill.” Nevertheless, with time, “crust snow” forms.

This type of snow is the “least conducive to skiing...as the skis no longer have any control and slip on the icy surface.” Skiing on crusted and steep slopes is not unproblematic “as sideslip and unwanted downhill slides occur easily” and the “thin icy crust, through which one breaks with each step into the softer snow beneath, is highly cumbersome.” The “ideal run, upon which the snowshoe has the best glide with the most control” is fresh snow on old snow, when “a slight layer of fresh snow falls on an old, stable snow layer” and, “without thawing, is thoroughly frozen, [this is especially ideal] when, during foggy conditions, a frost layer develops.”

The Art of Reading Snow

“Snow, this inventive artist of transformation, is, in the Alps, a brutal and treacherous despot,” claims the author and politician Anton Fendrich<sup>3</sup> of Offenburg. “Whosoever calls himself a skier and, in the summer or winter, dares to approach the snow of the high mountains, has lost his healthy common sense.”<sup>4</sup> Initially, skiers understood natural phenomena like avalanches to be fateful dangers, whose existence was determined by outside forces: [...]

Die Winterjagd, Mutter von Schneeschuh und Skilauf.



ANTON FENDRICH  
\* 1868 Offenburg, D † 1949 Freiburg i.Br., D  
Schriftsteller, Zeitungsredakteur und Politiker.  
Mitglied des badischen Landtages für die Sozialdemokraten. Verfasser zahlreicher alpiner Schriften und Handbücher.



Vierzehn entgleiste Waggons am Bahnhof Dalaas, Winter 1924

† From the Arlberg on January 9, we received the following message: Two men from Ulm; Günther, a regional court judge and Süß, a lawyer, participated in recent skiing activities in St. Anton. These two men undertook...an excursion to the Ulmerhütte, which was not without danger as, at the time, a half-meter of powder snow covered the entire area. In the evening, around 6 or 7, the innkeeper in Stuben heard cries for help and assumed the two men were in danger... until today...no trace has been found of the missing men, and they are most unlikely to be found alive.<sup>5</sup>

Vorarlberger Tagblatt, 1906

Welm Skiläufer verunglückt. Aus Bangen am Arlberg wird gemeldet, daß Dr. Heinrich Hofmann, Staatsbahnkommissär in Innsbruck und Mitglied des Klub. Alpeklub, beim Skiläufen tödlich verunglückt ist. Derselbe unternahm mit zwei anderen Herren vom Akademischen Alpenklub die Tour St. Christoph—Ulmer Hütte—Stuben. Das Unglück ereignete sich beim Abstieg von der Hütte nach Stuben und zwar offenbar infolge des Bitterungsumschlages, der mittags trat auch jene für den Skiführer ratenverhältnisse nicht genau erkennen ließ. So ist es zu erklären, daß Dr. Hofmann auf eine Wächter trat, die dann unter seinen Füßen abrutschte. Dr. Hofmann machte sich sofort zuweilen. Seine Begleiter machten sich sofort daran, ihn heranzuholen, aber es gelang, ehe er eine Stunde, ehe er ihnen gelang, Dr. Hofmann war leider schon todt, und auch die angestrichelten Wiederbelebungversuche fruchteten nichts. Einer der Begleiter eilte dann nach Stuben, von wo aus dann eine Expedition blieb inzwischen stille aufbrach. Der zweite Begleiter wurde dann nach Stuben gebracht, und von dort nach Bangen, um dort zu werden. Dr. Hofmann war verheiratet und hinterläßt außer der Witwe noch ein Kind, einen dreijährigen Knaben.



In 1909, the Bremen-born son of the Reeder family of Heligoland, a research-traveler, and alpinist, Willy Rickmer Rickmers,<sup>6</sup> fatalistically recommended that when “an avalanche rapidly descends from above” and one sees “a wall or ditch below,” then “to try it with a quick prayer.” “It cannot hurt,” he claims, “and perhaps it will help.”<sup>7</sup> With the modernization of daily life at the time of industrialization, common understandings of risk and danger changed. Since time immemorial, nature, especially that of the high, wintery mountains had presented certain dangers for man, dangers, which appeared as arbitrary events befalling individuals and which were dictated by the outside forces of destiny. A mountain farmer would never know in advance when an avalanche might destroy his property or when his crops might fall victim to drought. Now, at the dawn of the twentieth century, “nature, the origin of danger” was joined in ranks with industrial dangers like mining accidents, sinking ships, chemical accidents, and railway disasters, such as the catastrophic railroad accident of January 1st, 1911:

Especially haunting is the railroad accident in Bludenz, which in the dim morning light of the New Year left five dead; three strong men in the prime of life, providers and protectors of their families. Whilst churchgoers wished one another a happy New Year with candid joy, the cold morning air in the valley of Walgau shook with the cries for help of the wounded. A dull death rattle interrupted the joyous calm of New Year's Day.<sup>8</sup>

Such events were technical and manmade. Thus, the origins of danger no longer lay in incalculable nature, but with man, who was learning to regard and assess his actions in terms of their potential for future risk.<sup>9</sup> As skiers gained experience handling the “avalanche,” a seemingly incalculable phenomenon became a calculable risk: “Avalanche danger is not purely objective, it is also very subjective.”<sup>10</sup> The skier must know the world of the high, wintery mountains so well and be so familiar with the thereinlying dangers, that he may view them as risks dependent upon his personal decisions; for this, winter mountain experience is unconditionally necessary.<sup>11</sup> Under the heading, “Dangers of Skiing in the High Alps,” the Italian-born industrialist and pioneer of skiing, Alfred von Radio-Radiis,<sup>12</sup> warned:

Dr. phil. h. c. WILHELM RICKMER RICKMERS  
\* 1873 Lehe, D † 1965 München, D  
Forschungsreisender und Schriftsteller.  
Alpinist, Skibergsteiger. Als Skiläufer Schüler  
Zdarskys. Begründer der Bibliothek des  
Deutschen Alpenvereins, Gründer des Ski Club  
of Great Britain in Davos.



That he who dares to venture above the calm slopes of the alpine foothills into the heights must know more than those who are familiar with the skills and arts of snowshoe sports, but otherwise ignorant of the mountains. He must be an alpinist with a deep knowledge of all the difficulties of winter and characteristics of winter snow. And even then, such a man must exercise the greatest of caution, as sad examples have taught that often even the cleverest and most experienced have been surprised by sudden events, which have presented greatest puzzle!<sup>13</sup> Here, a Prerequisite for relatively dangerfree skiing was the ability to read snow. "A real skier must...be a good observer of nature. This means not just the snow...but [he must also] study the often rapid changes in snow composition, which occur through the influences of weather." Only then, wrote Max Medlener, can the experienced man "best note when the snow hangs from the mountain flanks, threatening to crash," and on the basis of his risk assessment, reach a decision. Madlener deeply recommended a thorough theoretical "knowledge of avalanche development in the available literature."<sup>14</sup> Publications from alpine clubs and scores of contemporary instructional manuals provided such knowledge. The fourth edition of *Der Skilauf (Skiing)* by the geologist, ski pioneer, and avalanche expert from Karlsruhe, Prof. Dr. Wilhelm Paulcke, which was released in 1908, along with the first (1906) volume of *Skitouren in den Ostalpen (Ski Tours in the Eastern Alps)* by Hans Biendl and Alfred von Radio-Radiis, for example, included a "small encyclopedia of snow." Nevertheless, these theoretical foundations were not to be confused with valuable, personal, firsthand experience with snow.<sup>15</sup>

### Dangerous Snow: Avalanches

"The development of avalanches is dependent upon a number of different factors: especially important is the grade and composition of the ground upon which the snow falls, the height of the snow cover, and the consistency of the snow itself."<sup>16</sup> Snow quality, soil type, and avalanches were understood to be fundamentally connected and dependant on one another. "In the high mountains, the least danger of avalanches is when early winter snows, generally those occurring until the beginning of January, have not been especially thick. From then on until March, weather for large alpine excursions is rarely favorable. This is why the time period from April into the late spring is recommendable for high alpine tours."<sup>17</sup> Especially conducive to avalanches are long slopes with consistent decline, upon which large, interconnected layers of snow develop, grassy slopes free from forests and rocks, and "rock faces made smooth by glaciers," in high alpine valleys, "especially when there is no wide valley floor." Frozen, grassy slopes, hard snow, iced firn, or ice, form the most ideal slide surfaces for avalanche development.<sup>18</sup> It was considered impossibly dangerous to ski upon steeper slopes during warm weather and foehn wind conditions, "when the chances of an avalanche or triggering an avalanche are too high. Escape from an avalanche normally seems quite unlikely."<sup>19</sup> In addition, skiers must be especially careful of snow cornices, "as their beautifully deceptive slopes tempt one to ski upon their ridges." Like many of his peers, the author Wilhelm Paulcke differentiated between "the following types of avalanche, placing especial emphasis on snow as the basic criteria for classification." new snow avalanches, including those of powder snow and moist snow, and old snow avalanches.



Abb. 72. Lawinenrinne mit Stellstufen, welche durch aufeinanderfolgende Lawinenstürze 1-4 ausgeglichen wurden. Im Spätwinter (z. B. nach Lawinenfall 4) stellt der ganze Rinnenboden eine einheitliche Gleitfläche dar. Auch tief unten erfolgende Störungen können dann weit nach oben, und in die Nebenrinnen hineinwirkende Folgen haben.

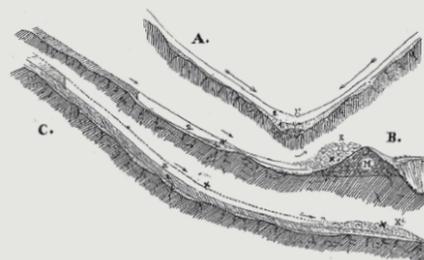


Abb. 73. Verschiedene Gestaltung von Hängen und Lawinenbildung mit Bezug auf die Gefährlichkeit für den Menschen.  
**A.** Enges Tal, ohne Talboden. Der Bach kann den Schnee unterwaschen, sodaß beiderseits Lawinen losbrechen. Ein Mensch X, der sich in der Talsohle bewegt, kann gleichfalls von beiden Seiten Lawinen loslösen. Entrinnen kaum möglich. — höchste Gefahr! —  
**B.** Durch Störung bei Stelle X wurde eine Lawine von oben losgelöst; sie stürzte zutal und staute sich an Moräne M). Da ein Ausgleiten der Bewegung nicht möglich war, wurden die Touristen K X (Fall Ehlert-Mönnichs) vom nachstürzenden Schnee völlig eingebettet.  
**C.** Die bei X gestörte Lawine konnte am allmählich sich verflachenden Hang auslaufen. Die Möglichkeit, sich in solchen Fällen oben zu halten, und gerettet zu werden, ist, im Gegensatz zu Fall A. und B., sehr groß.



Abb. 71. Entwicklung einer „Trockenen Neuschnee-Lawine“ zur „Staub-Lawine“.  
 In der Muldung unterhalb der Wächte schildartige Ansammlung von trockenem Neuschnee an einem Lehang. Störung durch Fußgänger oder Skiläufer bei X mit Querspuren. Der Schild brach oben ab, glitt als Ganzes bis zum Gefällsbruch (in Höhe der Tannen) und wäre, wenn sich an dieser Stelle der Hang ausgeflacht hätte, dort liegen geblieben. Da nach dem Gefällsbruch die Sturzbahn steiler wurde, erfolgte zunehmende Beschleunigung des Sturzes und Zerstäuben der Schneemasse zu einer Staublawine. Der Tourist wurde bei X erfaßt, und in die Tiefe gerissen. (Sehr ähnlich Fall Scheller am «Felsenweg» Feldberg, Schwarzwald).

## "AVALANCHE PROFILE"

### POWDER AVALANCHE (dry, new snow avalanche)

#### When and where?

Normally "after heavy snowfall" with intense cold "from the steep slopes"<sup>20</sup>

#### Snow Composition

"dry - powdery - dusty - grainy - airy - loose - cannot be pressed into shape and settles slowly"<sup>21</sup>

#### Characteristics

The "most characteristic of winter avalanches, this is also the most fatal type for mountaineers and skiers. The danger is often difficult to recognize and asses as such, as it is not only expansive under specific weather conditions, but may also be present in the seemingly safe surrounding areas."<sup>22</sup>

They can "develop quite unexpectedly...even in areas, which have never before been home to avalanches...a small catalyst causes some of the loose snow to shift, which then descends as a cloud, the resulting wind pressure pulls additional snow from vulnerable slopes, stirring up more and more snow on the way, and finally the powder avalanche sinks as a mighty cloud to the valley, generating a terrible pressure, which devastates everything in a wide radius."<sup>23</sup>

### WET OR MOIST NEW SNOW AVALANCHE (Grundstaublawinen)

#### When and where?

Occurs at times of fresh snowfall accompanied by higher temperatures, warm airstreams created by foehn wind, the effects of sunshine, or by rain that immediately follows the fresh snowfall. <sup>24</sup>

#### Snow Composition

Wet and heavy.

#### Characteristics

Snow may be pressed into cloddy shapes and flows, like an avalanche of moist snow, toward the valleys.

Most likely to develop in the spring and summer following fresh snowfall, but may also occur in the winter. "Presents a very real danger for tourists!"<sup>25</sup>

### WET FIRN OR OLD SNOW AVALANCHE

#### When and where?

Develops at times of warm weather, foehn wind, rain, or strong sunshine.<sup>26</sup>

#### Snow Composition

Wet, heavy, condensed, granular ice, old.<sup>27</sup>

#### Characteristics

Normally develops when the snow, because of "its own weight," breaks through "upon a wetter, melted underlay." Often, old snow deposits have hollow interiors as they are melted from below by streaming snowmelt water - the entire mass shifts and falls, pulling other clod-like snow deposits along with it to form a singular massive and dirty downhill flow."<sup>28</sup>

### SLAB AVALANCHE (SHELF SOFFIT) ? FIG. 70 (RIGHT)

#### When and where?

May occur even at the coldest of temperatures.<sup>29</sup> "When, after a thaw, the slopes refreeze and develop a nearly smooth surface, and when, after especially cold temperatures, powdery fresh snow falls, is swept together by the wind and thus firmly pressed together without binding to the older layers below."

#### Snow Composition

The term "slab" refers to the slab-like structure of the snow and the way in which it, like a slab, simply rests upon the surface below.<sup>30</sup> Thus, "sudden pressure on the snow layer or a surface disturbance...easily initiates movement."

#### Characteristics

This "misleading snow layer," deceives those who walk upon its falsely stable surface.<sup>31</sup>

"When, after a thaw, the slopes refreeze and develop a nearly smooth surface, and then, after especially cold temperatures, powdery fresh snow falls, is swept together by the wind and thus firmly pressed together without binding to the older layers below, this is when a slab-like layer develops upon the smooth underlay." The oft-hollow snow layer "breaks off as one singular mass, fracturing into angular slabs, which descend toward the valleys"<sup>32</sup> and present a danger "from which skiers must absolutely protect themselves."<sup>33</sup>

The old Trojer [Oswald Troier] wanted nothing to do with the Kaltenberg, which is one of the most beautiful skiing runs in the Arlberg, because he, rightly so, considered it too at-risk for avalanches. Yet he was beside himself when someone did not want to go up the steep slopes of the Peischelkopf or Schindler, as he had never before seen an avalanche there.

Adolf Kutschera Ritter von Aichbergen

Tourists were quite aware of the high level of experience locals had with high-risk slopes. Thus, in addition to theoretical knowledge and practical experience, skiing guests were well advised to garner information from locals on "the avalanche's prime locations."<sup>34</sup> During this time, Oswald Troier, for example, advanced in his position as innkeeper and warden of St. Christoph to become a veritable avalanche expert: [...]

When Troier assessed the weather as too dangerous, he did not allow his guests to venture out upon the slopes. Court counselor, Dr. Adolf Kutschera Ritter von Aichbergen recalls an instance when, following three days of heavy evening snowfall, he had planned to go to St. Anton. Troier convinced him to remain at the Hospiz:

I argued that I had to be at the chancellery the following day, to which he responded with these words: "If ya descend now, ya won' be at the chancellery tomorrow either." And he was right. As I finally embarked the morning after the poor weather had lifted, I witnessed the remains of two vast powder avalanches, which had downed the forest and multiple hay sheds, and now lay across the Arlbergstraße. A snow tunnel, which held well into the spring, was constructed to serve as a path through one of the avalanches.<sup>35</sup>

Even the most experienced and knowledgeable of mountaineers was not immune to the danger of avalanches. Generally, "alpine skiing was still simply too young for vast amounts of experience to have been collected. It would be some time before even the most rudimentary of tips and rules of conduct could be established."<sup>36</sup> Thus, one of the most difficult questions of skiing at this time was "How to prevent the inexperienced from encountering alpine dangers, without hindering him completely?"<sup>37</sup> Fendrich provided an answer: "Whosoever does not understand skiing simply has to learn it first."<sup>38</sup> Willy Rickmer-Rickmers, who developed the idea of the alpine ski course, shared this simple perspective and on Easter 1909, through the "friendly support" of the 1901-founded Skiclub Arlberg, he was able to bring his idea to fruition.<sup>39</sup> What exactly those lacking in ski knowledge ought to learn constituted the second most important question of the time.

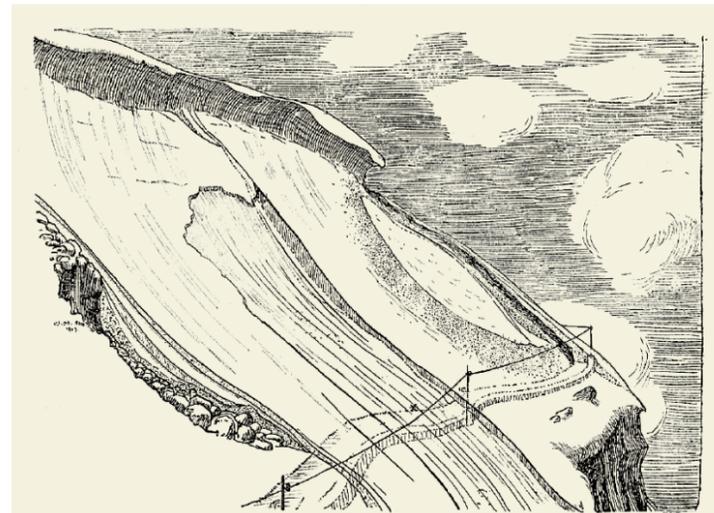


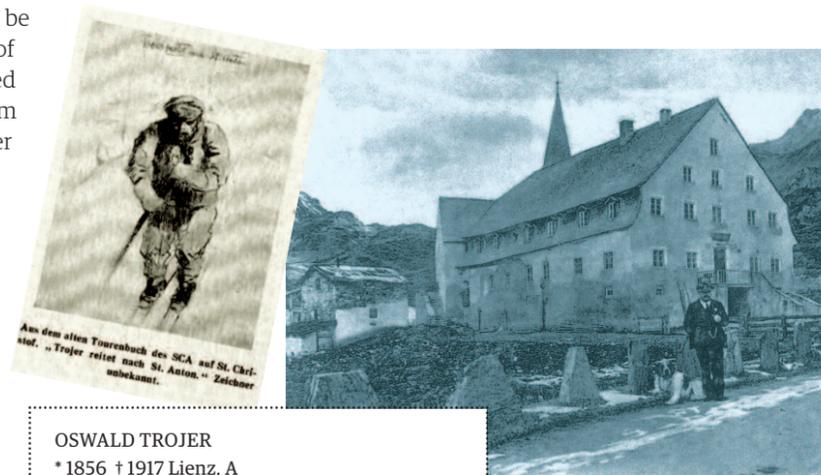
Abb. 70. Schneehang im Spätwinter.

*Links:* Im Durchschnitt die verschiedenen Schneeschichten übereinander. Anfangs, nach dem ersten Schneefall, Blöcke, Straßen etc. noch deutlich erkennbar (noch keine Lawinengefahr!)

*Nach und nach Ausfüllen der Unebenheiten, der größeren und kleineren Mulden und Einschnitte (Wege, Straßen); Herstellung großer einheitlicher Gleitflächen.*

*In der Mitte:* Ein „Schneeschild“, aus lockerem Schnee, als örtliche Lawine, aus der Muldung unter dem Kamm losgebrochen. Störung bei \*.

*Rechts:* Kleines „Schneebrett“ auf körniger Altschneeunterlage an kleinem Geländerücken festgeweht.



OSWALD TROJER  
\* 1856 † 1917 Lienz, A

Hospiz-Wirt und Wächter von St. Christoph am Arlberg. Gründungsmitglied des Skiclub Arlberg. Als armer Wirt nach St. Christoph gekommen, als Schlossbesitzer (Schloss Neuenburg bei Lienz im Pustertal) gestorben.

Oswald Trojer 1902 mit einem der beiden legendären Bernhardiner Lawinenhunde von St. Christoph.

...that golden, lucky shoe, that carries me into the realm of my desires, my love, in my mountains.<sup>41</sup> Franz Nieberl, 1910/11



Oben: Fridtjof und Eva Nansen; Portätzeichnung von C. Krohgs.



Rechts: Mathias Zdarsky

"MODES OF SKIING,"  
SKI COURSES, THE SKI, AND BINDING

Of fundamental importance in skiing is not the simple practice of travelling up and then back down a mountain in one piece, but rather in what way this is done. Here, skiing techniques become especially important. At the time and unequivocally related to technique, in turn, was the search for the optimal construction of ski binding systems. Alternatives to the equipment and techniques of the Lilienfelder and Norwegian systems were heavily debated during the controversial "sport debate," which was fought between those who followed the Lower Austrian artist and teacher Mathias Zdarsky and those who adhered to Wilhelm Paulcke's methods. The older Norwegian system, which had been made famous by Fridtjof Nansen's accounts of his 1888 Greenland expedition, used long, wide planks with flexible reed binding, which offered little lateral support. Dominant swinging techniques associated with this system were the Telemark and Christiana. Zdarsky's Lilienfelder system was based on shorter skis, which were adapted to the body size of the skier and implemented a (steel) sole binding and the *Schlangenschwung* technique, which was dependent upon an in-motion stem shift. Up for discussion "was which criteria define the best technical form for a function that is yet to be defined." That is, was the ski ideally suited for simple

transportation on flat land, or was it also a tool for movement through high winter mountains?

Oskar Vorweg, a captain from Herischdorf im Riesengebirge, summarized his experiences in 1892 using the Norwegian ski: "Ascending a mountain is the easiest, considerably more difficult is walking on a flat surface, and the truly difficult and dangerous is the descent." Theodor von Wundt expressed a similar sentiment. Three years after Vorweg, the Württemberg-born Ludwigsburg native, mountaineer, author, and officer described his experience with the long planks: "The ascent is especially tedious and difficult, the descent very dangerous. Obstacles are almost impossible to overcome, and when one falls, which happens easily, one is completely helpless with those long boots." The Kufstein customs official from Würzburg, Franz Nieberl, a.k.a. "Kaiserpapst," who, at the beginning of the century was a "fresh-blooded newbie," yet "in possession of an astoundingly long pair of ashen planks" undertook his first ski tour in the company of an Arlberg regular: Josef Ostler. Nieberl also described the true difficulty of skiing in alpine territory:



OSKAR VORWEG  
\* 1841 Herischdorf i. R., PL † 1916 Teplice, CZ

Hauptmann und Sozialaktivist. Erster Skiläufer im Riesengebirge. Autor zahlreicher Fachartikel zum Thema Skilauf.

Generalleutnant THEODOR VON WUNDT  
\* 1858 Ludwigsburg, D † 1929 Stuttgart, D

Offizier, Schriftsteller, Fotograf. Pionier der Vermittlung des Alpinismus in Wort und Bild.

FRANZ NIEBERL  
\* 1875 Würzburg, D † 1968 Kufstein, A

Zollfinanzrat in Kufstein. Bergsteiger, „Kaiserpapst“. Alpinschriftsteller. Vorsitzender der AV-Sektion Kufstein.

Skykurs unter Leitung Zdarsky.



Then came a slope...Ostler could not resist the temptation - which skier's heart would not empathize? He raced downward in elegant curves, and, in the blink of eye, was far, far down below, I was stuck above on the snowy height. In frustration, I tried everything, except that which would have been correct. I ought to have continued with my serpentine curves. Instead, I tried, of course without the faintest of clue of his technique, to follow Ostler's path. I was unsuccessful. I rode endlessly across the slope and could not guide the uncontrollable planks downhill toward the valley. The result - a voluntary fall. Afterward, and with much effort, I turned, and attempted it with the "straight as an arrow descent." The planks seemed to have gone mad, I raced toward the valley, my surroundings became a blur, thoughts of broken legs, and fractured skulls and other such mishaps raced like lightning through my agitated mind, I attempted to find hold with the ski pole behind me - the result was to be expected - a sudden fall, a rolling chaos of legs, confusion as before the Creation of man.' The skis lay above me on the slope, I was head-

down, and the poles were God-knows-where -I struggled with all of my strength, but could not manage to remove the long shoe. "Unbuckle a ski!" shouted Ostler. That was impossible while wearing mittens. Off with them! With my naked hand and using every contoured maneuver imaginable, it was finally possible. In my infinite wisdom, I did not consider the perfidy of the thing, the loose ski, free from its silly master...took off. I was almost relieved; I would have granted the thing permission to go as far as the ends of the earth. Ostler was of a different opinion and caught the runaway with fabulous agility. I shouldered the second ski and marched downhill through knee-deep snow...Yet - Ostler would not have it. I grudgingly re-buckled and again, lurched clumsily through one serpentine curve after another; then there were small depressions, sparse forest. Truly, every tree that I attempted to avoid remained precisely and stubbornly in my path. Had I clutched one of these behemoths in a hearty embrace, it would have been more difficult to let go of than leaving a fair maiden.



**JOSEF OSTLER**  
\* 1873 Traunstein, D † 1959 München, A  
Zollfinanzrat in Kufstein. Alpinist, Skibergsteiger.  
Nacherschließer des Kaisergebirges.

Hüttenrast nach der Skitour:  
Viktor Sohm und Josef Ostler, 1907



**MATHIAS ZDARSKY**  
\* 1856 Koschichowitz, CZ  
† 1940 St. Pölten, A  
Volksschullehrer, Maler, Bildhauer, Landwirt auf Gut Habernreit im Bezirk Lilienfeld. Erfinder von Lilienfelder Ski, Bindung und Fahrweise. Lawinensachverständiger. Gründer des Alpen-Skivereins. Autor des weltweit ersten Skilehrbuches und zahlreicher weiterer Schriften. Entwickler der ersten Lehrweise für Massenunterricht. Begründer der reinen Abfahrtswettbewerbe, Erfinder des Torlaufes.

Alpenstange und Einstocktechnik anno 1905: Mathias Zdarsky präsentiert seine Lilienfelder alpine Skilauftechnik, 1905

Whoever practices mountain skiing and would like to do so with real joy must above all be an expert in the techniques of the sport...nothing is more aggravating than the inability to master one's skis in the mountains, nothing is more miserable than...when, at somewhat steeper points, one feels compelled to carry one's skis. In doing so, one not only denies oneself a genuine pleasure, but especially during winter tours, wastes the precious time of shortened days. Diligent practice on mountainous terrain is an absolute prerequisite for alpine activity.<sup>55</sup> Max Madlener, 1901

... [in these tours] we abandoned our old upright stance and increasingly adopted a deep, crouched position. We coupled this crouching technique of descent with our stem-Telemark and thus, developed our own style with which we rode the largest and steepest of slopes...in many consecutive swings and with a high speed we descended and thus, with the low center of gravity, we achieved what was, for the time, a relatively high level of stability.<sup>66</sup>

Arnold Fanck und Hannes Schneider

The Freiburg film director and author, Dr. Arnold Fanck, recalls the year 1908 and his time as a skier in the high Black Forest: "we youngsters...skied, one pole in each hand, with proud composure...downhill until that proud composure ended, mostly in a much less proud way." Generally, skiers that had mastered the bow-legged and pole-reliant style, the "schuss, swing...and fall system" for downhill skiing, could not cope with "forest, level terrain, and the steeper regions of the alpine foothills."

Max Madlener advised: [...]

Based on such awareness and the belief that mastery of "the technique of the sport," was necessary for a skier in the high mountains to find enjoyment in his activities, events were conducted "in which not only the basic elements of skiing, but also its advanced intricacies [were] taught by experienced skiers." Yet the mastery of skiing demanded prior practice in less difficult terrain. First mountain guides, then locals, and finally ski tourists obtained instruction for practice. At the same time, as self-taught skiers adapted to the unique challenges of the high mountain terrain, they developed their own techniques independently both from one another and from the theoretical guidelines established by the Norwegian and Lilienfelder schools.



**„self made men“.<sup>58</sup> Learning to Ski among Friends**

At the time, learning to ski primarily meant finding a friend to introduce one to its secrets.

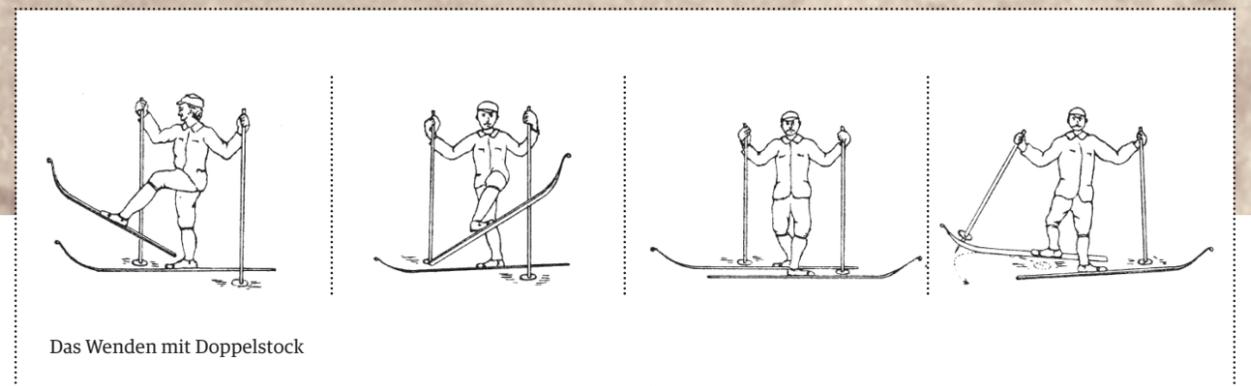
In the winter of 1904/1905, the geology and paleontology student in Freiburg im Breisgau, and Breslau native, Günter Dyhrenfurth found, "tours to join and a certain amount of guidance."

Schneepflug



Abfahrtstellung

In the beginning, "everyone quickly becomes a 'misery-loves-company' type of skiing instructor." Indeed, "very few skiers" learn by "loneliness and self-teaching," most likely because this type of learning is rarely successful. In their "constant attempts to master skiing without poles," skiers gradually "favor the stem-turn and make a variety of compromises with it, the snow plough turn, and the swing technique." In addition, this process of compromise and adaptation occurs "for the most part unconsciously," as most skiers are "unaware or only somewhat aware of their own deviations from the schuss and swing technique." According to Arnold Fanck, this was because skiers "con-demned ski-theoreticians and large ski poles to the devil," preferring instead to undertake "extensive ski tours" silently and, "in free-form swing or stem-turn," while racing through "their four thousand regions," and joyfully "skiing for the sheer sake of tempo and swinging momentum." Rudolf Gomperz recalls, "Back then, there was no technique," and asks, "For what would we have needed technique? One wanted to labor and exhaust oneself, and then to find pleasure in the joy of a descent...as a reward for the effort and strain that had been endured." Fanck added that "very few of us involved ourselves, in writing, in the prevailing discussions and differences of opinion at the time," instead, techniques of descent presented themselves during high skiing tours: [...]



Das Wenden mit Doppelstock

Thus, simply by way of "adaptation to the difficult terrain while on tour" and separate from the discourse on Lilienfelder and Norwegian techniques, "a generation of competent ski-ers" was born. Indeed, Arnold Fanck and Walter Schaufelberger, an experienced high-terrain skier from Zurich, developed their ski climb and descent techniques, which were wholly dependent upon the terrain. Schaufelberger skied with the stem-curve technique, using two poles, and marveled at Fanck, who mastered the slopes with "elegant Black Forest swings." Reciprocally, Fanck observed Schaufelberger descend a slope with a two-thousand meter height differentiation, a high unbelievable height for Fanck, using "many consecutive stem-turns and [with] an astounding security and almost without stopping, while I,

despite all my elegant swinging, fell far too often and was thus too tired to ... maintain Schaufelberger's tempo." From this moment on, Fanck learned "security and the stem technique" from Schaufelberger, while the latter learned the swinging technique. Thus, "after only a year," both men "developed a very similar technique of descent," in which the stem-Telemark played a major role.

It was around this time that these "inseparable touring comrades of the winter" wit-nessed "two skiers in Davos" who, independently of themselves, also skied "in the crouched position," yet with a "security and elegance using the Christiana, and not, as we did, the Telemark... [in such a way that] we had never seen it's approximate." These men, the Engadine Eduard Capiti and Johann Schneider, were "surely the best skiers," of their time.



Stemmfahren links



Dr. ARNOLD FANCK  
\* 1889 Frankenthal, D † 1974 Freiburg i. Br., D

Geologe und Berg-, Sport- und Naturfilm-Pionier. Gründer der Berg- und Sportfilm GmbH Freiburg. Filme u. a.: Das Wunder des Schneeschuhs (1920), Der Berg des Schicksals (1924), Der weiße Rausch (1931)