

## PHOTO CREDITS

The 222 photos of this book were taken by:

Lionel Allemand : 223, 264  
Justin Audenino : 270-271  
Joseph Bertoncini : 248, 249b  
Jean Bouchet : 234, 235b, 237t  
Stéphane Brosse : 99b  
Davide Capozzi : 197, 205  
Nicolas Cardin : 124, 157S  
Franck Chevallier : 174, 175  
Emmanuel Darlix : 69, 71, 120  
Olivier DeLylle : 47b, 247b, 249t, 251, 256, 257, 259b, 275, 276, 277  
Laurent Dupré : 42, 45, 212, 214-215, 222  
Thomas Gremmel : 298  
Christophe Hagenmuller/coll. Volopress : 40-41, 52b, 58-59, 72-73, 77, 80-81, 89, 95, 100, 103, 106-107, 110, 123t, 156-157, 158, 159, 161, 162, 166-167, 170, 172, 173, 178, 181t, 192-193, 194, 202-203, 207, 211, 217, 226-227, 250, 252-253, 254, 255, 259t, 260-261, 262, 263, 274, 294-295  
Emmanuel Lefolgoc : 55b, 57, 61, 62, 84-85, 163, 164B, 171, 228-229, 304-305  
Olivier Lesbros : 55t, 220S, 238  
Sylvain Loyaux : 117t  
Jean-Baptiste Mang : 67, 75t, 79, 90, 94, 132, 139t, 139b, 140, 235t, 314-315  
Sylvain Milloud : 149  
Michel Puissant : 92, 101, 148, 150, 296-297  
Leïla Shahshahani : 63, 64, 291  
Volodia Shahshahani : 4<sup>th</sup> cover page, 39, 52t, 53, 75b, 119t, 131, 185, 218-219, 220-221, 273t, 273b  
Pierre Tardivel : 93  
Lionel Tassan : 1<sup>st</sup> cover page, 37B, 37S, 41S, 43, 44, 46, 47t, 49t, 49m, 49b, 51t, 51b, 54, 60, 65, 66, 68, 76, 78, 82, 83t, 83b, 87, 91, 96, 97, 104, 105, 109l, 109S, 111, 112-113, 114, 115, 116, 117b, 119b, 121, 122, 123b, 125, 126, 127t, 127b, 128, 129t, 129b, 130, 133, 134-135, 136, 137, 138, 141, 124, 143t, 143b, 145t, 145b, 146, 147, 151, 152, 153, 154, 155, 164S, 165, 168, 169, 177, 179, 181b, 183, 184, 186, 187, 188, 189t, 189b, 190, 191, 195, 198, 200-201, 209, 224, 225t, 225b, 230-231, 232, 233, 236, 237b, 239, 240, 241, 242, 243, 244, 245, 247t, 265, 266, 267t, 267b, 268, 269, 272l, 272r, 279, 280, 281, 282, 283, 284, 285t, 285b, 286l, 286r, 287, 288-289, 290, 292-293, 299, 300, 301t, 301b, 303, 304S, 306, 307, 308, 309, 310, 311, 313  
Nicolas Wirsching : 56, 88, 99t

B=big ; S=small ; t=top ; b=bottom ; r=right ; l=left ; m=middle

## INTRODUCTION

With the Chablais, this volume devoted to the Mont-Blanc range completes our coverage of the French Northern Alps. The Mont-Blanc range knows no borders, and is treated in its entirety, including both the Swiss and Italian sides. The print date of this TOPONEIGE was planned for a much earlier date: the Mont-Blanc range appeared to be one of the easiest ranges to adjust to our original, crystalline range model based on the Belledonne: not quite as long as the latter but higher, with a comparable stratum, a more omnipresent lift system, but much more committing terrain. At the outset, "TOPONEIGE" was conceived in order to serve multiple disciplines: first, skiing (*the preferred tool for traveling on snow*) and then mountaineering. The Belledonne range has north-facing couloirs that keep snow through mid-July, and until publishing the Belledonne volume, there was no inventory of them. A TOPONEIGE Mont-Blanc perfectly satisfies this dual usage, particularly the summit of Mont-Blanc itself. Almost all-year long it is possible for ski-mountaineers (*or for "mountaineer-skiers"*) to climb any one of a number of these faces via a route of reasonable difficulty, using skis for the entire approach or descent, whether ending up in the valley or at one of the multiple great elevators.

### Zones

**External limits.** The Miravidi range, bordered to the southeast via the most significant decrease in altitude (*Col du Petit Saint-Bernard*), completes a geographic (and traditional) divide between Chamonix, Martigny, Courmayeur and Bourg-Saint-Maurice (*the link between the Arve and the Tarentaise valleys being Val Montjoie via the Bonhomme and Croix du Bonhomme passes*).

**Internal subdivisions.** The descriptions cover twelve zones, going in clockwise order starting from Chamonix. In each zone, the routes, numbered based upon the starting point, go in counter-clockwise order.

A, "Chamonix west", starting from Les Houches (Bellevue aerial-tramway), and then describes the routes starting from the Aiguille du Midi tram, returning to Chamonix west of the Col du Géant.

B, "Chamonix east": all routes starting from the Aiguille du Midi tram, returning to Chamonix east of the Col du Géant. This includes the north side of the Grandes Jorasses area and the south side of the area that extends from the Talèfre basin to the Aiguille Verte.

C, "Argentière", includes the Argentière and Tour basins, with approaches either via the Grands Montets tram (for most), or from Le Tour.

D, "Martigny", includes routes starting from Trient, the Col de la Forclaz and the Arpette Valley to the Col de Champex.  
 E, "Swiss Val Ferret", includes routes above Som-La-Proz. The east side of the range between the Aiguille du Tour and the Dolent.  
 F, "Italian Val Ferret", includes routes starting from Courmayeur-la-Palud, either via the Doire de Ferret (river) or the Helbronner tram. These are the south and east sides of the summits from the Dolent to Mont-Blanc.  
 G, "Val Veni", includes all routes starting from Val Veni, both the Mont-Blanc and Miravidi sides.  
 H, "La Thuile", includes routes on the Italian side of the Miravidi range, starting between Courmayeur (*via the ski-lifts*) and the Col du Petit Saint-Bernard.  
 I, "Bourg-Saint-Maurice", includes the routes of the Miravidi range that flow towards the Isère River.  
 J, "Glaciers", includes routes starting from the Ville des Glaciers, in order: Miravidi, south side of the Aiguille des Glaciers, the east side of the Tondu -Têtes des Fours area.  
 K, "Saint-Gervais", includes all routes starting from Val Montjoie (Les Contamines) to the Tramway du Mont-Blanc, regardless of the starting station.

### **Snow and climate** (by Christophe Ancey)

The Mont-Blanc range is in the heart of a very wet zone that covers the Aravis, Chablais and Aiguilles-Rouges ranges, extending all the way to the Beaufortain range. Due to the Mont-Blanc range's location, it is exposed to all low-pressure systems from the west (40% of all storms), from the southwest (25%) and from the northwest (20%). Storms from the northwest are particularly impressive, usually accompanied by a significant drop in temperatures and snow at low altitudes. Precipitation intensity can be significant with the Mont-Blanc range on the frontline.

**The south side of the range (Courmayeur)** as well as the section on the border (from Mont-Blanc to the Pointe d'Archeboc) is also exposed to storms coming from the southeast. The Mont-Blanc range is relatively consistent in terms of precipitation amounts even if the topography comes into play for storms lasting longer than 24 hours; following the concept of "first snowed upon, most snowed upon," at a given altitude more snow falls on the western edge (Chablais), then on the Aiguilles-Rouges and finally on the Mont-Blanc range itself. If daily totals do not break any records (as with the Southern Alps), accumulation totals over multi-day storms can be significant and approach those measured in the Prealps. The average annual precipitation totals exceed 1800 mm in the upper Arve Valley (double that of the Tarentaise Valley), and

are close to those of Saint-Pierre-de-Chartreuse (2050 mm). Locally, the combined effects of the topography (clouds clinging to summits) and the trapping of cold air create exceptional snow conditions at modest altitudes. The village of Le Tour is often referred to as a "chamber pot" since the accumulation totals are often very similar to those above 2000 m in the Chamonix Valley; over the course of the winter Le Tour frequently receives 2 m of snow from multi-day storms.

**The region extending from the Col du Bonhomme to the Petit Saint-Bernard** via the Miravidi takes advantage of very specific climatic conditions. In this case, the extraordinary snowpack owes itself to storms emanating from the southeast, which can produce impressive single-storm totals from La Rosière to Les Chapieux: low-pressure systems in the Mediterranean get trapped in the Gulf of Genoa. These low-pressure systems bring wetter air currents that traverse the Po Valley with ease, slamming up against the massive wall of the Mont-Blanc range. (This is also the situation referred to as a "return from the east" that generates significant snowfall along the border, from the Mercantour to the Haute Maurienne.) North of the Petit-Saint-Bernard, the general orientation of Mediterranean currents is south to southeast. This wet air is forced to rise at higher altitudes and must get rid of the heavier water vapor, thus producing significant snowfall. This phenomenon is usually accompanied by strong winds, meaning cold katabatic winds that ice over the Po Valley on the Italian side, and on the French side a warm and dry wind (the famous foehn wind) that ruins the snowpack of neighboring valleys. This explains why, in spite of being south facing, the Miravidi range and the Aiguille des Glaciers often have a deep snowpack, providing pure, unabashed enjoyment for springtime skiers.

**The abundant snowpack creates considerable avalanche activity**, which in some cases reaches a large enough scale to wreak havoc all the way down to the valley floor. In an area where multi-day storms that drop 2 m of snow are common, a combination of factors often leads to catastrophic damage. Thus, in mid-March 1914, following a dry and cold winter, a series of increasingly powerful storms passed through the Chamonix Valley with significant quantities of snow piling up on a thin and unstable snowpack. Huge avalanches, on a scale that no one had ever seen, ripped down the different sides of the Chamonix Valley. The powderblast of an avalanche that started from the Aiguille des Grands Montets, devastating Lognan's forest, covered Argentière's church. 1945 and 1954 also had heavy snow winters with significant avalanche activity. 1978 and 1999 were both wet and particularly deadly, casting a particularly tragic shadow over Le Tour. On February 9, 1999, heavy snowfall (2 m at Le Tour), but not out of the ordinary for the area, accompanied by cold tem-

peratures at low elevation plus strong winds at high altitude, caused an avalanche that started in the cirque beneath the Bec de Lachat; taking an irregular track towards Montroc, it destroyed 20 houses and killed 12 people.

***The north side of Chamonix's spires also has a reputation for gigantic avalanches.*** In May 1983, after a long warm period at high altitude, the slopes beneath the Aiguille du Midi broke loose creating a wet slide. Given the steepness of the terrain the avalanche quickly accelerated, turning it into an aerosol (mixed with dirt and other debris) that destroyed a part of the forest above the Mont Blanc tunnel's entrance.

One of the most extensive if not the most extensive avalanche site in the Alps is the Tacconnaz couloir, which starts beneath the Aiguille du Goûter and drops all the way down to the Arve River. Avalanches tumble down on a regular basis, sometimes as large as 1 million cubic meters of snow and threatening both the highway and the houses below. It is difficult to fight and defend against the power of these avalanches. In February 1999, a powerful avalanche almost completely destroyed the avalanche barriers in place, although coming to a rest as planned. In April 2006, an avalanche came to a stop in the deposition zone, destroying some barriers made of steel-reinforced concrete.

### **Geomorphology, mountaineering, skiing (by Louis Volle)**

Extraordinary beacon in the northwest corner of the western Alps, the Mont-Blanc range articulates the entire chain, justifying the term "alpine arc". A maximum of tectonic energy raised the range and its penultimate summit to supreme lord of the Alps. South, from all of the major summits running north-south on the Franco-Italian border, Mont Blanc's radiant mass towers over the panorama; east, the immense west-east running Swiss-Italian chains, a genuine "forest" of 4000 m peaks, tries in vain to contest Mont Blanc's supremacy; their efforts wasted, the giant sits on a pedestal high above everything else. The forces of the Earth created a masterpiece that transcends the universal history and traditions of mountaineering. A benchmark for mountaineering, but considered longtime second-rate for backcountry skiing, the range has demystified little by little the idea of skiing down terrain where once only mountaineers dared venture. Two inseparable elements combined to create a wonderful playground of the most unique variety: various rock structures, erected by tertiary alpine compressing, and glaciers of all types that, since the quaternary, have sculpted and continue to sculpt the terrain. The positive variations of Mont Blanc's elevation illustrate this constant change. The 4807 m when I was in school have changed to 4810.9 m for school-kids today.

As with the Ecrins, the ancient Hercynian platform, the surface and terrain are the eroded remnants of a much larger and higher mountain range than the current one, providing

the heavier substance and forms of the borders. Composed of crystalline schist and especially gneiss, the range was pushed to the upper altitudes during the tertiary when plutonic granites (climber's granite) burst through its center, between Mont Blanc and the Pointe d'Orny. The sedimentary cover hung on to the south (Pyramides Calcaires, Miravidi) and to the west (Val Montjoie, Vorassay). The beautiful spires correspond to the hardest rocks, but the tectonic forces were so strong that entire sections were crushed, allowing quaternary glaciation to carve out large basins such as the Vallée Blanche. Significant glaciation since the quaternary continued to reshape the terrain, exploiting faults and other weaknesses, smashing and carrying away the softer rocks and polishing the hardest. The highest summits have been sharpened as well as highlighted by lower shoulders such as the Plan de l'Aiguille or the wide glacial valleys such as the Mer de Glace. On the flip side, the connection with the lower valleys via steep gorges and ravines makes it somewhat difficult to move from one elevation zone to another. Ladders put in place in order to reach the various huts, increasing in number due to the glaciers thinning and the safety needs of the general tourism public, provide an important service.

Skiers have thus inherited a few itineraries amidst the jagged terrain that is usually the exclusive playground for rock climbers. Until the 1970s the "traditional" skier exploited only the large glacial basins. Few routes led to the major summits, typically topping out at a pass or at a bergschrund marking the start of a mountaineering route. Thus in Argentière, the longtime most popular summit, prior to building the tram and the ski area, was the Aiguille des Grands Montets. The Col du Tour Noir was a classic and one crossed over the Col du Chardonnet at the start of the long traverse to Zermatt. The Aiguille d'Argentière via the Milieu Glacier longtime remained a route for the elite of skiing. Mont Blanc was a highly sought out objective. The heavy forms of the old platform, combined with the high elevation, accumulate and retain large amounts of snow that feed a few of the Alps's most powerful glaciers (Vallée Blanche, Bossons, Tacconnaz, Miage or Tré-la-Tête); wide easy boulevards or sometimes steep and crevassed terrain, with a spectacular finish via the three Monts Blanc. The older backcountry skiing guidebooks were simple annexes to the Vallot guidebook, with very few but very prestigious routes. Construction of the Aiguille du Midi, Helbronner and Grands Montets trams exploited the most spectacular areas of the range, providing access to high-mountain skiing attracting thousands of tourists. The Vallée Blanche has no equal anywhere in the world, and has helped to demystify the high-mountain environment and revive its exploration. The routes skied since the end of the sixties descend the glacial couloirs - the faults and weak-lines of the range (Blatière's Spencer couloir, the Tacul's Gervasutti couloir, the Verte's Whymper couloir). Even more routes descend the steep faces of the range, rarely steep slabs (as with the Droites), but more often down piles of fractured

rock or small spurs suitable to the formation of glacial or mixed big walls; the north faces of the Courtes, the Verte, the Aiguille du Midi and especially the Dômes de Miage or the Brenva guarantee steepness, vastness, continuousness and, depending on the case, huge walls of ice or mazes of seracs, of parallel couloirs separated by dizzying snowy ridgelines or prominent rocky ridges. As Gaston Rebuffat always said, the Mont-Blanc range is an obvious "Enchanting Playground" whether it be for geologists, glaciologists, mountaineers, skiers or the hikers who walk around it, and for tourists, artists and writers who find a never-ending source of emotion.

### Skiing in the Mont Blanc range

The ski lift equipment of the range has no equal. The mid-altitude ski areas cover terrain well suited for backcountry skiing. Ski areas such as Saint-Gervais-les Houches, Charmaillon-Balme, Courmayeur provide access to coombs and gullies that you can ski to via gravity alone. However, backcountry skiers will find easy and panoramic itineraries, most notably in the Val Montjoie, Miravidi areas as well as on the Swiss side of the range (Trient and Arpette). Three major ski lifts (Aiguille du Midi, Helbronner, Grands Montets) provide access to high-altitude from the low valley floors. But the Mont-Blanc range, due to its steepness and its chaotic glaciers, still has plenty of areas where the approach and access are not so easy. The range's popularity all year long does affect the landscape, safety and the freedom to go where one wants. For the moment, the proposal by the city of Saint-Gervais to regulate climbing up Mont Blanc (quota and being required to hire a guide), was rejected by the local guides and guide companies.

#### **A Toponeige for extreme skiing?**

When compared to the *Ecrins Nord* guidebook, which until now covered the most difficult terrain and routes of the TOPONEIGE collection, we notice almost an overabundance of routes in the grade 5 range, representing one-third of all routes in the Mont-Blanc guidebook. There are more moderate routes (3 and 4) in the Ecrins Nord book and more easy routes (1 and 2) in this guidebook.

	Ecrins Nord		Mont-Blanc	
SKI 1	0	0%	5	3%
SKI 2	20	13%	28	16%
SKI 3	57	37%	36	20%
SKI 4	43	28%	50	28%
SKI 5	35	22%	60	33%

In the Mont-Blanc range, access to passes or high-altitude peaks is made possible via the type of long glacial approaches that have thinned or altogether disappeared in the Ecrins range. But even here the accelerated shrinking of the Mont-Blanc range's glaciers has caused an increasing number of approach and safety problems. The Grands Mulets route up Mont Blanc is bombarded by serac fall and the maze of crevasses has developed to such a point

that you simply cannot pass late in the season without artificial means; the classic Trois Cols route has become more and more difficult due to crevasses and crossing over the last few meters of each pass; summer skiing down the Vallée Blanche or down the Argentière glacier is but a distant memory; there is no longer anything "regular" regarding the regular route up the Grandes Jorasses. For steep skiing, the slopes in the Mont-Blanc range are of greater scope than those in the Ecrins range, but they are also wider and more open, have more snow, and are easier to scout out on the approach, which is often greatly shortened with the help of cabled transport. This is the case for the Aiguille Verte (the most popular) and the neighboring summits along its long ridgeline, although none of the itineraries provide an escape route: a common reality for routes in the Mont-Blanc range with the exception of the Mont Blanc summit itself.

**Historical perspective.** For grade 5 routes, following the description, we have listed the name or names (and sometimes the date) of those considered to have made the first descent. This precision, not systematic in the other volumes, was made possible due to the high profile of the Mont-Blanc range: the best skiers of the world come here to test themselves. The earliest grade 5 descent would be the Col des Jorasses by Colossa and Tonella in 1931. Subsequent descents (Milieu Glacier in 1941, Col des Droites in 1946), less difficult, remained the benchmark for steep skiing until "extreme skiing" came onto the scene at the end of the sixties. Sylvain Saudan skied the Blatière's Spencer couloir (1967), the Tacul's Gervasutti couloir (1968), Bionnassay's north face (1969), and the west face of Mont Blanc (1973). Also in 1973, Jacky Bessat skied Mont Blanc via the Gouter's west couloir and Serge Cachat-Rosset, then Anselme Baud and Patrick Vallençant, skied the Verte's Couturier couloir. Another barrier was broken when Daniel Chauchefoin skied the Austrian route down the Courtes in 1977, undoubtedly the most impressive year in the history of the range. During that year routes previously considered impossible were skied: the Peuterey ridge (Baud-Vallençant), the Aiguille du Midi's north face (Chauchefoin-Détry-Baud), and the Col de la Verte (Potard-Williot). In the years that followed, the number of talented skiers increased: among them, Jean-Marc Boivin on the Aiguille Verte (Y couloir, Nant-Blanc, south face of the Moine). Over a period of seven years, Stefano de Benedetti descended every side of Mont Blanc, finishing with the south face (Innominata) in 1986. One of Chauchefoin's disciples, Pierre Tardivel, has led a long career making first descents in the range: from the Grand Pilier d'Angle in 1988 to a new path down the Nant-Blanc (without rappels) in 2008. In the 1990s, almost all of the high-profile steep routes saw snowboard descents, most notably by Eric Bellin, Sam Beaugey, Pierre-André Rhem, Jérôme Ruby, Laurent Dupré, Marco Siffredi, Bertrand Delapierre... When compared with the huge supply of steep slopes yet to be skied in the Ecrins range, the unpredictable snowpack and long, arduous approaches, it appears that the history of first descents in the Mont-Blanc range may have come to a close. In the last few years new lines to ski or snowboard have become more difficult to find or piece together, often requiring numerous rappels (such as the Linceul on the Grandes Joras-

ses, the Droites's Lagarde couloir, the north faces of the Triolet or Grand Charmoz). The subsiding of the range's more ominous seracs may open up new opportunities. However, in the future, it is more likely that the cutting edge of extreme skiing will head in new directions: the style of the descent (jumps, speed) introduced by the generation of "freeriders", or the significance of link-ups by high-level athletes (some from competitive ski-mountaineering, some not), as is currently the case in lower altitude ranges.

### Selection of routes

---

The stance of the TOPONEIGE collection is to be both exhaustive and to prioritize. This is why each range passed through a fine-toothed comb: all of the valleys are described and represented. However, in order to remain both readable and usable, all of the routes are not placed on the same map. Certain routes are primary routes (numbers without decimal points), others are considered to be supplementary routes or variations (with decimal points). The rule of prioritizing is useful in the following three cases:

- repetitive: the same starting point, the same scenery and landscape, similar technical traits. The skier will visit the given valley at one point and, a few years later, will come back to ski a "variation". This also allows a backup plan when the first choice route is too crowded.
- introductory (grade 1): true alpine touring; excluded are routes around a small village such as flat traverses, so as not to discourage the budding backcountry skier.
- steep skiing (grade 5): retained are the most aesthetic and logical routes (even extreme) with a good chance of being repeated, but not every small strip of snow on a steep face that does not top out on a summit and that requires multiple rappels or systematically taking off one's skis.

After meeting with the selection committee, we have retained 179 primary routes with a wide range of landscapes, approaches, vertical, aspect, and difficulty.

#### What this TOPONEIGE does not include...

- **off-piste routes...** that you can simply ski or traverse to... with the exception of those routes on the north and west faces of the Aiguille du Midi. The major descents starting from each lift (Vallée Blanche, Mer de Glace from the Grands Montets, the Toule Glacier from Helbronner) are preceded by a short ascent to a summit or a pass that widens or provides a new view.

- **a specific chapter on "hautes routes"**. The Mont-Blanc range is not well suited for this type of traverse since you will quickly come up against serious, difficult and technical terrain. Most of the classic one or two day tours are described in each chapter.