

ICE-CAVES.*

MANY classes of readers may be expected to take a lively interest in this book; the subject is, to the English public at least, practically new, and the author's style a good one, the ice-caves which he has explored with such zeal, and his own personal adventures in search of them, being alike accurately and pleasantly described. In addition to the narratives of his own visits to no less than twelve ice-caves, or *glacières* (to use the proper appellation), Mr. Browne has collected notices of numerous *glacières* in all parts of the world, and has added chapters on the scientific questions arising about them. Thus his book contains nearly all that is known on this curious subject; and the man of science, the practised traveller in search of new objects of interest, and the gentleman or lady who stays at home at ease to sit in an arm-chair and read of the difficulties encountered by others, may all find in it congenial mental food.

It unfortunately happens that scarcely any of the known *glacières* can be visited except by those prepared to rough it to the utmost, and also to devote more time to the purpose than most travellers like to spare out of a short tour. Several of those described by Mr. Browne are situated in the Jura, a region which might be more interesting if the Alps were not so near at hand to suggest odious comparisons, two or three are near Annecy, and a couple in the still duller country near Besançon; and none of these are accessible without going considerable distances even from the roughest accommodation, while the chance of not finding them at all is by no means small. But, fortunately for travellers who may be desirous of seeing a *glacière* incidentally to a Swiss tour, and yet do not care to go far out of their way or spend precious days in going to it, one of the largest and by no means the least interesting may be visited in an easy day from Thun or even Berne. The Schafloch, so called because the sheep feeding in the neighbourhood take refuge there from storms, is situated at no very great distance from the N. shore of the lake of Thun. About half way between Neuhaus and Thun, the *Justis Thal* runs in a northerly direction between the *Beatenberg* on the E., and the *Sigriswylgrat* (as it is called in sheet xiii. of the Federal map) on the W. The cave is situated at a very great height above the valley, immediately below the *Rothhorn*, the highest point of the last-named ridge; and the shortest and easiest way of access is certainly not that by which Mr. Browne went to the cave, but, very nearly, that by which he returned. His description of the objects which came immediately under his notice is most vivid and accurate, but he scarcely seems to do justice to the marvellous beauty of the distant views towards the *Oberland*, which are to be obtained not only from the *Ralligflue*, but at every step from thence to the *Schafloch*. It would appear that Mr. Browne must have passed along the western face of the *Sigriswylgrat*, or he could hardly have failed to notice the very remarkable view presented by the ridge on the opposite side of the *Justis Thal*, perfectly flat-topped

* *Ice-Caves of France and Switzerland. A Narrative of Subterranean Exploration.* By the Rev. G. F. Browne, M.A. London: Longman and Co., 1865.

and bare, with the white summits of all the great peaks of the Oberland rising singly above it.

But Mr. Browne's theme is *glacières* and not scenery, so perhaps we have no right to quarrel with any omission with respect to the latter topic, when his account of the ice-caves is so perfect. It is probably necessary to serve a considerable apprenticeship to visiting *glacières*, before one can expect to appreciate them properly. One must be very keenly interested in the investigation before one can reconcile oneself to darkness, the perpetual smell of tallow candles, and crawling on one's hands and knees over muddy, stony floors. And the imagination must be a powerful one that can see the beauties on which Mr. Browne dilates so enthusiastically by the dim light of a single dip. However, though we cannot in honesty say that we could discern much beauty in the Schafloch, the one *glacière* which opportunity has allowed the present writer to visit, there was much that was curious and novel in it. Our own advice to travellers would be, to explore one ice-cave as completely as time and opportunity will permit; and if one person in a hundred cared to visit a second except for the sake of scientific investigations, we should be very greatly surprised.

With regard to the scientific part of the subject, when it has been cleared of the legendary marvels due to the imagination of the few peasants who have half known and wholly feared the *glacières*, there does not appear to be much that is not easily explicable. The general formation of the ice-caves is very closely analogous to the stalactitic and stalagmitic formations in the limestone caverns, though of course the ice columns form very much more speedily, and, unlike the stone ones, are liable to melt again; and there seems no difficulty about accounting for the temperature in the caves remaining low enough not to melt all the ice. The most curious phenomenon observable in these caves is in the interior structure, so to speak, of the ice itself. The icy floor of the cave is found, on being cut into with an axe, to be composed of a congeries of hexagonal prisms of uniform shape, though very different sizes, which are easily divisible with a knife; and this is found to be the case in all the *glacières*, so far as has been observed, without exception. But we must refer our readers to Mr. Browne's book for what he has to say on this and other minor points connected with the formation of the ice-caves; and we may safely say that, whatever the value of his scientific conclusions, of which we do not pretend to judge, a more painstaking and accurate observer will seldom be found.

NOTES AND QUERIES.

ALPINE BYWAYS. XII.—*The Brunni Pass from Amsteg to Disentis.*
 —The excellent inn opened this summer in the Maderaner Thal may be advantageously reached by the hills which bound the valley on the N. After walking an hour from Amsteg, a path on the left leads in $1\frac{3}{4}$ hrs. by a steep and little-sheltered ascent to the hamlet and lake (1,413 m.=4,636 ft.) of Golzern—an exquisite spot, and well worth the labour and scorching the walk inflicts. But the guides will suggest