The Jenolan Caves

which are as a rule not more than eighteen inches wide and built up here and there with soft mud which has to be avoided or a fall is certain. (N.B.—After any sort of a fall in soft ground like this, take out your cartridges and see that the barrels are clear.)

Burma is a sportsman's paradise and the Burmese most keen. Their jungle huts are usually very clean and I have slept several times in them.

Snipe in Burma or in any hot country are nothing like so difficult to kill as at home, except perhaps during the half-hour or so between dawn and sunrise. H. on the above occasion was shooting superbly, his "pick-ups" amounting to nearly four-fifths of those fired at. He had just come from winning the last Grand Prize at Monte Carlo.

Travel.

THE JENOLAN CAVES.

By Colonel S. F. Clark.

Probably few people in England have heard of these caves, but they are one of the prides of Australia, and all visitors to New South Wales are expected to see them. The Government Tourist Bureau in Sydney makes the path of the traveller to Jenolan very easy, and for the sum of seven pounds it will take him from Sydney to the caves and back on a five-day trip, will board and lodge him at the excellent Caves House Hotel, and will show him four of the caves. If he wants to see any more of them he can do so by paying the usual fees, two to five shillings per cavern.

We did this trip, and I shall try to tell of what we saw, beginning with some words on the journey.

We left Sydney on a Monday by the 9.25 a.m. train for Mount Victoria, the farthest of the holiday resorts on the Blue Mountains. These heights are very dear to the hearts of the city folk, and at Christmas or Easter the number of people who are compressed into a mountain hotel or boarding house is astonishing. The ranges begin thirty miles from the capital, and in the early days of colonization the time soon came when the settlers felt shut in by them. For the progress of the colony it was imperative to get over the mountains into fresh lands beyond where the flocks and the herds could multiply, but for a long time every effort to do this failed, for no white man could find a path across the barrier. The height was nothing—under 4,000 feet—but the precipitous cliffs which bounded the valleys like great walls were unscaleable, and man after man was beaten in the attempt to win the reward which the Government at last offered to anybody who could find a passage through the ranges. Even the indomitable Surgeon Bass of the Royal Navy, a man with the soul of an explorer was
completely defeated by this barrier of precipices, and he is reported to have said that no man would ever get through. His name lives in Bass Strait, for it was he who set out in a small boat and found that Tasmania was an island. For ten years all ships making for New South Wales had gone south of Tasmania, as it was believed to be part of the Continent of Australia.

By 1803 the need of more elbow room in the colony was so great that three men, whose names are household words to this day, determined to succeed where so many had failed. They were Blaxland, a farmer from Kent, whose holding was almost at the foot of the hills; Lawson, a lieutenant in the 102nd Regiment, and Wentworth, a local lad who afterwards made his name famous in Australia. Their plan to get over the mountains was to cross no stream, but to follow it up and to go round its source, and by this means they succeeded in keeping to the top of the main ridge, and in getting through to the plains beyond. An obelisk has been erected on Mount York, at the place where they realized that they had conquered the Blue Mountains, and began their descent on the far side of them.

As these men cut their way through the scrub they blazed certain gum trees to note their track, and one of these marked trees still stands on the roadside near Katoomba, the most popular of the mountain resorts. It is known as the Explorers' Tree, and there is not much of it left, but it is railed off and concreted up to make it last as long as possible.

In 1804 the Governor started convict labour on a road over the Blue Mountains, which is still the main high road, with the railway practically alongside it. In the bush near the Explorers' Tree are the graves of thirteen of these convicts, who died of some quick-killing epidemic. The guide books do not mention them, and one hears of them only by chance, but they are in a small cluster, plainly to be seen by anybody seeking for them. Kindly hands have heaped stones, and small branches, and bush flowers on the graves, and have placed on each a rude cross formed of saplings. These crosses fall down at times, but some visitor replaces or renews them, for these nameless men were one's own countrymen—perhaps from one's own county—and one trusts that their crimes were not black ones.

Before we reach the mountains our train goes through historic Parramatta, and crosses the Emu Plains. It passes poultry farms, fields, and sheep runs, and then begins to climb, almost in the track of the dauntless three who found the way up 120 years ago. We pass all the pleasant mountain townships, and after a three hours' run arrive at Mount Victoria, where we leave the train.

We lunch at a hotel here, and at 2 p.m. start off for Jenolan in one of the large motor cars that carries the party. We descend the Victoria Pass and are glad when we are safely down, for there is a big drop on one side of the road. The Mt. York obelisk, and the English weeping willows by the Cox River interest us, and then for miles we traverse country that is being
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cleared of trees. This process takes time, for the trunks are first ring-barked—a circle of bark cut off by an axe—which kills them by the loss of sap, and the dead trees are then burnt and cut down. These dead trees are of a greyish-white colour all over, trunk and branches, and as they stand there in their hundreds, gaunt and leafless, the country-side looks like a huge tree cemetery.

Here and there we pass a small shanty, and occasionally a collection of a few houses, but the whole area gives a sense of a lack of human life, and of wonder as to how the land yields anybody a living. Presently, however, a small war memorial by the roadside reminds us that the men are somewhere about. Soon we reach the highest point, 4,600 feet above sea level, and for the last three or four miles we pray for the staunchness of the driver and of the car, for if either fail we should be over the side of the road, rolling down for hundreds of feet. We descend 1,700 feet in three miles, the road being cut in the mountain side, and as we go round the sharp bends, tooting hard, we hope that there is nothing round the corner. Finally we run through a great arch in a mountain ridge, which is really a vast cavern broken through at both ends, and just beyond it we arrive at the Government Caves House Hotel—having done the 36 miles from Mt. Victoria in two hours.

The scenery at Jenolan is wild. All around are high mountains covered with trees and shrub, while the hotel and its annexes are the only habitations visible. They lie at the bottom of a funnel rather than of a basin, for the ground on every side rises so steeply and so high, that in the mild winter of this climate the hotel gets only one hour of sunshine daily. If it were not for the broken through cave by which one enters the funnel, the hotel would be completely shut in, and it is in the limestone formation of this cut-through mountain ridge that most of the famous caves lie practically in three storeys, one above the other. The waters have tunnelled their way through the obstruction to their outlet, and have gone right into the mountain and channelled passages downwards through the limestone, which forms the caverns we visit.

There are many caves here and in the vicinity, but practically only nine are ordinarily shown. A caretaker and a staff of some ten guides live on the spot, and conduct tourists through the caves twice daily.

The story of the discovery of these caverns by white men is not uninteresting. A convict named McEwen escaped from captivity and penetrated to the wild and unknown country around Jenolan, where he found two small caves which he used as hiding places. He must have seen the archway and two other great caverns, for they are obvious, but the rest of them have been found from time to time by exploration.

McEwen became a bit of a bushranger, and apparently lived for some time by robbing the nearest settler, named Whalan, of sheep and other food, but in either 1838 or 1841 he went too far by stealing a horse. Whalan then became annoyed, and traced the animal to McEwen's haunt.
Apparently the convict had been left unmolested owing to uncertainty as to whether he had companions or not, but Whalan now obtained the aid of two mounted police troopers, and the three men made their way into this unexplored region and saw the three great caves already referred to. They captured McEwen after a long hunt, for his chief haunt had a back door that his pursuers did not know of.

The fame of the caves gradually spread, and adventurous spirits occasionally visited them, but in 1866 the Government took possession of them, and stopped the genial custom of carrying away stalactites and other formations which was indulged in by the early visitors. It is said that most of these heavy souvenirs were dumped into the bush on the travellers' homeward journey.

The Grand Archway—the tunnel through which the road goes just before it reaches the hotel—is a great cavern 450 feet long, 35 to 180 feet wide, and 40 to 70 feet high. It forms a fitting prelude to the hidden caves, which are entered from its sides, and although its roof is so high yet a tortuous water channel is clearly marked upon it. Just outside this arch is another great daylight cavern—the Devil's Coachhouse—400 feet long and up to 160 feet high. The rocks and boulders of all sizes that lie in these two cavities have been so clambered over by wallabies—a species of small kangaroo—for unknown centuries, that their edges are polished to an
astonishing smoothness. Close at hand is the entrance to the Nettle and Arch cave, the third of the caverns that Whalan and the troopers saw in their chase of McEwen.

Formerly a visit to the hidden caves was no easy affair, but now narrow passages have been enlarged, steps cut, ladders and handrails provided, and electric light installed, so that an inspection is a comparatively comfortable matter. As the steps vary from a minimum of 700 to 1,472, and as some of the ladders are steep and slippery, liquid food is usually indicated at the end of the two hours which is the average time occupied in a tour of one cave.

The electric lighting is not constant, but is turned on by the guide section by section, and the bulbs are arranged to show up special features of the formations of each cave, and in most places the effect is wonderfully beautiful. One looks upon a cave as a dark and dismal place, and at Jenolan one certainly goes through narrow passages and great chambers which satisfy all one's requirements and expectations, but the marvellous beauty of a limestone cave comes as a revelation. The stream has cut out the tortuous tunnels and the great caverns, but then Nature has set to work to decorate them by means of the slow drip of water which holds in solution lime and coloured minerals, and the result is a veritable fairy land. The beauty of the caves lies in the many forms which the deposit from the drip takes, and in their splendid colouring. The work has gone on for countless centuries, and has produced formations of many shapes and of many hues—snow white, smoky white, cream, pink, salmon, green, and brown. The prevailing tints are white and various shades of brown.

There are stalactites and stalagmites by the thousand, many of which have joined together to form pillars. The stalactites vary from three or four inches in length, with the thickness of a slate pencil to massive pendants many feet long and several inches in diameter; the stalagmites also are of all sizes, culminating in one massive column which is forty feet high. Some of the columns and pillars are quite smooth and straight, while others are terraced or beautifully fluted. Many stalactites hang in numbers side by side, shaped like great tongues, forming immense canopies in white or brown. There are wonderful things called "shawls," which occur where the roof slopes. In these cases, instead of forming a pointed stalactite, the drip runs down the incline and makes a thin, wide structure which is just like a shawl or blanket hanging down. Most of them have narrow bands of a brown colour running with the utmost regularity from side to side of the shawl, exactly like the blue or red lines that one sees at the top end of a blanket. There are many of these "shawls" in the caves, of all sizes, but the champion one, in the River Cave, is 20 feet long and 4 feet wide. It is only about half an inch thick, and when the light is switched on to the bulbs concealed behind it and the whole structure glows, it is a superb sight.
There are strange objects called "mysteries," which it is said no man can explain. They are lime formations which defy the laws of gravity and they occur in the roof or sides of a chamber or passage singly or in clusters, forming delicate filagree work. Many of them are no thicker than a hairpin, and bend back on themselves just like one of those necessary articles. Most of them are only a few inches long and are very delicate and fragile, while others are larger, but all twist and bend in every direction, upwards and sideways. The puzzle is to account for the growth upwards of an object which is formed by deposit from drops of water.

There must be some action allied to the way in which fluid can run up a capillary tube. These mysteries are the most delicate formations in the caves, and they very closely resemble the work of an artist in spun glass, while it gives one quite a jolt to see such fragile and beautiful things in the depths of the earth.

All over the caves there are formations which at once suggest well-known objects, one of the best being the "weeping willows"—a structure which is not only perfect in shape but is green in colour. Here and there are small cavities, known as jewel caskets, which contain masses of crystals which look just like diamonds as they scintillate in the light. In certain places the guide turns a large hand electric lamp on to the walls, where
crystals glisten and twinkle like stars in the heavens. There are fairy-like grottoes, and one recess in particular—the Mafeking Cave—is indescribable in its beauty. It is one mass of countless delicate stalactites and pillars, sparkling cascade formations in white and various tints of brown, tongues, canopies, mysteries, silk-like shawls, and jewels—all crowded into a small space and glistening in the light.

Every now and again one comes to the underground river, the Styx, which until lately had to be crossed in a punt, and one is led to the spot, deep down, where it is usual to throw coins into the water, which are retrieved annually and given to charities. The water is quite clear and its motion almost imperceptible, so the coins are clearly seen lying a foot or two below. The use of paper money has caused a big loss here, as many sovereigns used to be fished out in the days when they circulated.

In one cave there is an extraordinary formation on the floor, where a pool once existed, which resembles a group of Lilliputian cities, with walls and fortifications five or six inches in height. These so closely copy the thick ramparts of ancient days, and are so realistic in their setting, that at first one can hardly believe that they have not been faked up for the astonishment of visitors, especially as the open spaces seem to be full of people.
The Skeleton Cave is so named because it holds a human skeleton embedded in the floor. These bones are supposed to have belonged to some luckless aboriginal who probably entered by some small opening in the hill side, and then in his wanderings in the darkness fell down unseen shafts and chasms, for he lies deep in the bowels of the earth. The guide suggested that this may have happened 6,000 years ago.

In the Temple of Baal our party stood in an awed silence, with a feeling of being in church. Above was a dome ninety feet high, lighted up; on the floor beneath was a glistening pure white stalagmitic mass measuring thirty feet across. This was the white altar. Close by was a similar red altar, while around hung great shawls like angel's wings, and beautiful clusters of delicate mysteries. There were grand masses of large brown lime "tongues," and stalagmites which resembled images. The whole chamber was most majestic and impressive, and at no other time did we notice a party of tourists so reduced to silence by the sublimity of their surroundings.

One could write volumes about the Jenolan Caves, and to have seen them is an education. For countless centuries, hidden in the depths of the earth, Nature has been preparing these works of grandeur, massiveness, and majesty, contrasted with delicacy, charm, and fragility. Our generation gazes on them enthralled, but so slow is their growth, that although the work is still going on, yet many centuries hence those who come after us will see much the same effects as we see now.

We inspected seven of the caves, and returned to Sydney on the Friday by the same route as we had gone. As we left the grand mountains and the marvellous caves we felt that we also had seen the works of the Lord and His wonders in the deep—of the earth.

Current Literature.

The following abstract of an address delivered by Professor Calmette before the Medico-Chirurgical Society of Edinburgh on June 7, 1922, is circulated on the recommendation of the Senior Medical Officer Med. III, Ministry of Health, in whose branch it was prepared.

The Protection of Mankind against Tuberculosis.—Villemin, finding it difficult to transmit tuberculosis to the dog, the cat, and the sheep, was the first to raise the question whether animals existed which were non-sensitive to this disease.

Later, we learned that almost all the mammalia could be artificially infected, but that only a small number of species contracted tuberculosis spontaneously, and that some others were so highly resistant as to be immune even to artificial inoculation.