

The Advertiser
July 15th 1914.

LOST RIVERS OF SOUTH AUSTRALIA.

On Tuesday evening, at the University, Mr. W. Howchin gave the last of his series of extension lectures on the lost rivers of South Australia before a large and appreciative audience. He asked how it came to pass that South Australia, which at some former period of its geological history had possessed magnificent waterways, should now be almost destitute of water to fill the ancient courses. They had to look to several factors to find the explanation. One of the most important of these was the great earth movements which had taken place. A great rift valley had transformed the north and south drainage into an east and west drainage. The alterations in the configuration and altitudes of the country had resulted in a new direction being given to the watersheds. As they looked on the old watercourses in which there was now no water, they could not help asking the question—will these dead rivers live again. It was never easy to resuscitate the dead, and he was afraid that in the present age, at any rate, the lost rivers would not be revived. In a fine series of lantern views illustrations were given of the various physical features of different parts of the State. Mount Lofty was shown, and the lecturer explained that there was a continuous plateau from there to the Barossa ranges. The changes effected by the steep faulting of the Mount Lofty ranges down to the rift valley were explained, and their effect on the waterways indicated. The ranges were of recent elevation, and in their present form they were quite modern, although the rocks of which they were composed were of ancient geological structure. They had been reduced in a comparatively late geological cycle. There were several striking instances of rivers flowing through rift valleys, but amongst the best examples in the world were the Rhine and the Jordan. A good illustration of the new direction which the rivers of South Australia had taken was found in the Broughton, all the tributaries of which flowed at right angles to the main channel, and ran north and south. Originally the main stream took that direction. The Light showed similar characteristics. Referring to the Torrens Mr. Howchin said it was a young river, but its grade was well advanced. At one time there had been fine waterfalls in the course of the stream, but none of these were left. It had worn its way down through a barrier of not less than 1,000 ft. The changes which have occurred in the basin of the Onkaparinga were explained, and their effect on the country was illustrated by lantern views. With the exception of the Murray it was the only true antecedent river in the State. The Murray was the largest and oldest river in Australia, and it belonged to a former geological cycle, and had made its history in that cycle. In conclusion, Mr. Howchin said the climate had changed for the worse, and had had its effect on the rivers. The changes were evident from the fact of the disappearance of whole classes of fauna. Crocodiles, turtles, and the curious ceratodus (mud-fish) had become extinct. Not only had aquatic species disappeared, but land fauna, such as the diprotodon, and huge birds which required ample and succulent vegetation for their subsistence, were no longer found in the country. The vegetation, too, had changed. The palms found in the valley of the Finke were survivals of an ancient flora which had largely passed out of existence, and which showed that fertility had been replaced by the saline deposits now found in many localities. Still, the position might have been worse. Nature had given Australia a mixture of her best and her worst, and it was for her people to strike a balance and be thankful.

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ANCIENT AUSTRALIA.

Living Relics of Diprotodon Days.

South Australia is not the place she used to be. Mr. Walter Howchin, F.G.S., painted a picture in sombre contrasts last night. The occasion was the third and last of his series on "The lost rivers of South Australia," and a large attendance listened in fascination to the geologist's exposition. First he dealt with matters which may be sketchily summed up thus:—Of the one-time continental rivers of Australia only one remains. That is the Murray, and it has been partially be-headed; its northern tributaries have been cut off by vast natural change. The rivers of South Australia have in recent times changed their directions. A great barrier has been raised across the courses of the ancient waterway, and they no longer run north and south, but east and west. The Mount Lofty ranges were once the top of a plain. That plateau has slipped away in terraces, portions of which to-day are beneath the gulf, while the waters of the ocean have drowned the great original valley. The geological histories of South Australia's rivers—the Broughton, Light, Para, Torrens, and Onkaparinga—are full of change and strenuous conflict. The Torrens, for example, has cut her way 1,000 ft. deep. She is essentially a young stream, but has already worked for herself a comparatively even grade. She possesses not a single waterfall. Once there were magnificent falls, several hundreds of feet in depth.

—Crocodiles at Port Augusta.—

All these points of Mr. Howchin's concluding discourse entertained his hearers; but the lecturer secured absorbed attention when he fluently compared the almost forbidding interior of South Australia to-day with its once luxuriant splendour. There was no doubt but that the climate of South Australia had changed for the worse in comparatively recent times. One illustration was that the whole of the fauna formerly existing in the interior plains had disappeared. Once there were crocodiles at Port Augusta. Those creatures disported in the Finke, where it poured its waters into the head of Spencer's Gulf. Remains of the saurians were still to be found there. Large turtles also existed, and still another aquatic type—a fish built like a huge tadpole. Its fins were more than fins. The ceratodus would go for a walk on the land on a nice dewy night, and in periods of comparative drought it would settle down in the mud, philosophically, to await better times. Those aquatic fauna could not have existed except where there was abundant and perennial fresh water. There was no permanent fresh water unless it connected with the sea, so that he was now citing evidence that the northern rivers once had an outlet to the ocean.

—Tragedy and Extinction.—

Then there was extensive land fauna, such as the enormous diprotodon, gigantic kangaroos, and wombats, and running birds which would completely overshadow the ostrich of to-day. Such living things could have existed only where there was abundance of succulent herbage. The vegetation must have been riotously rich and lovely. Smaller birds must have been immensely extensive. Professor Gregory had found no less than 20 new fossils of birds away in the interior. But then came tragedy—inescapable death, stern extinction. With the denudation of the climate the innumerable living things, large and small, were surely driven back and back, until there remained only one great lake basin, whose fresh waters and fertility could sustain the prehistoric life. That was Lake Callabonna—a region in which Professor Stirling had done notable work, particularly in the assembling of the remains of the diprotodon. There the vegetation gradually died away, the waters steadily shrank, and finally in the muddy bog of the lake bottom the last of the race of monsters were trapped and died in the agonies of hunger and thirst. That was the wiping out of Australia's ancient fauna.