enough to take up fully one-half of the Colorado as it spreads over the basin, and it would probably require from two to three years for the balance to fill the hole up to level. At such times as the river filled the basin to its level the flow to the Gulf of California has been through a channel which begins at the lower end of the basin, and makes a short cut directly south to the salt water. This is called Hardy's Colorado, and it is usually simply a dry channel or ditch. It may have been formed under circumstances similar to those existing at present. It is large enough to accommodate the entire volume of the Colorado after the evaporation which is sure to take place while the water is spread over the basin.

"Some idea of the terrible heat may be had from the evaporation which takes place. If the basin were filled to the river level, the lake would present a surface of about 1,600 square miles. This would be lowered at the rate of six feet a year by evaporation. The salt which is now being mined at Salton was deposited in the valley by the previous evaporations. The original salt deposit from the water which was a part of the Gulf of California is not responsible for all that is found there. The waters of the Colorado are saline, for the river flows through beds of rock salt at places many miles up from its mouth, and the successive deposits from the waters of this river as they have flooded the valley and then dried up have added largely to the original deposit."

## OXFORD SUMMER MEETING OF UNIVERSITY EXTENSION STUDENTS.[1]

THE process by which university extension is carried throughout the country and made a vehicle for the further education of the adult student is well known, and is gradually becoming more and more appreciated in proportion as those who are responsible for the method improve the lines on which it is carried out. The machinery employed embraces lectures, classes, travelling libraries, etc., but one element vitally necessary to the university student is not supplied by these aids. This element is that of residence, and it was a happy suggestion on the part of the originators to propose that, for one month in the long vacation, arrangements should be made by which those who have profited by being brought into contact with a university lecture should enjoy the additional advantage of being brought under the charm that haunts the colleges and cloisters of Oxford and Cambridge.

The Oxford summer meeting commences on July 31, and is continued throughout the month of August; but, for the benefit of students who are unable to be present during so long a period, the course is divided into two sections, the second commencing on August 12. It has been found desirable to remove as far as possible the fragmentary and isolated character of the lectures given at these meetings, and therefore, while the course will be complete and independent in itself, it will also form the first part of a cycle of study which for its full development will embrace a period of four summers.

That these lectures propose something more than to add piquancy to an agreeable picnic will be shown from the following slight sketch of the subjects treated — and treated by authorities of acknowledged reputation. To take the lectures on natural science first: in physiology, Mr. Poulton will discuss the recent criticisms of Weismann's theory of heredity, and Mr. Gotch will lecture on the functions of the heart. In chemistry, Professor Odling lectures on the benzine ring, and under the supervision of Mr. Marsh a course of practical chemistry will be conducted in the laboratory of the University Museum. In geology, a course of practical instruction will be given by Professor Green and Mr. Badger, to include excursions in the neighborhood of Oxford. A class in practical astronomy will be welcomed at the university observatory; while electricity finds an able exponent in Mr. G. J. Burch. But the distinguishing feature of this meeting is the attention given to agricultural science "designed for agricultural audiences under county council schemes." This designation seems somewhat vague, and it will be very interesting to see the character of the audience attracted by this title. Four lectures are offered: the first entitled, "The Application of Science to the Art of Agriculture." This description is sufficiently wide, but does not indicate whether the lecture is intended as a sample of those which state-aided board schools in agricultural districts might well offer to lads who have passed through the successive standards, or as one addressed to the sons of farmers, and supplying that form of instruction which it is the duty of agricultural colleges to impart. Another lecture is offered on the management of poultry. This is more definite and more hopeful; and when we remember that the students who come up for these summer meetings are, for the most part, ladies, who can well be supposed to take an intelligent interest in this part of farming operations, we must admit that the subject is well chosen. Manures of various characters form the subject of the other two lectures, and will be doubtless of a sufficiently technical character.

The literature and history lectures are of special interest, and by the combination of many lecturers are made to cover with great completeness the mediæval period. Mr. Frederic Harrison gives, as an inaugural lecture, a survey of the thirteenth century, and strikes the keynote of this section; while in the entire course, which embraces some sixty lectures, we meet the names of Professor Dicey, of Mr. York Powell, of Mr. Boas, and a host of others, affording alike a sufficient guarantee for the excellence of the work, and a happy augury for the success of the meeting.

[1] Nature, July 16.

## THE FORESTS OF ZULULAND.

AN interesting and valuable report on the forests of Zululand, by Colonel Cardew, has been issued by the British Colonial Office as an official paper. Colonel Cardew's report, an abstract of which we find in the Proceedings of the Royal Geographical Society for July, deals in the first place with the existing state of the forests of Zululand, then with the measures necessary to preserve them, and lastly with the establishment of a staff necessary for the enforcement of the laws and regulations required to effect the better preservation of these forests. As to their general distribution, the forests of Zululand, Colonel Cardew says, may be conveniently divided in the same manner as has been done by Mr. Fourcade, assistant conservator of forests, in his report on the Natal forests; that is to say, into high timber forests, thorn bush, and coast forests. The high timber forests are situated on the Nkandhla and Qudeni ranges of mountains in the Nkandhla district; on the Entumeni and Eshowe Hills and the Ungoye Mountains, in the Eshowe district; on the slopes of the Ceza, and on the Useme, Empembeni, Makowe, and other hills in the Ndwandwe district; and on the VBombo Mountains, in the district of that name. The thorn bush is to be found to a greater or less extent in all the river valleys of Zululand, the timber increasing in size and the bush in density on the lower parts of the rivers, especially in those of the Umkusi, and White and Black Umfolosi. It is very large and dense in the country west of St. Lucia Lake.

The coast forests are of no great extent, with the exception of the Dukuduku; they grow in small patches along the streams and rivers near the coast, and especially at their mouths, and also cover the low sand-hills which border the coasts of Zululand. The Dukuduku is situated on the north side of the lower Umfolosi River in the district of that name. It is several miles in extent and very dense, and was the place of retreat of the coast chiefs during the disturbances of 1888. Dealing more particularly with the distribution of the high timber forests, Colonel Cordew states that the Qudeni forests clothe the slopes and spurs of the Qudeni Mountain, a magnificent range rising to an altitude of some 4,500 to 5,000 feet, and situated between the Tugela and Insuzi Rivers. The forests are of great extent. In the absence of a survey it is impossible to say what area they cover, but they clothe the southern, eastern, and northern slopes of the mountain, and from their extent and vastness are most imposing in appearance. They are certainly the finest forests in Zululand, and are composed of the most valuable timber, of the same nature and variety as that of the high timber forests of Natal. Yellow wood, both onteniqua and upright, abounds, and there is also every description of hard wood, but from want of adequate protection these noble forests have in many parts been ruthlessly destroyed. Woodcutters do